Scientific Publication No. 524

HEALTH CONDITIONS IN THE AMERICAS

1990 Edition

VOLUME I

HEALTH CONDITIONS IN THE AMERICAS

1990 EDITION

Volume I

Scientific Publication No. 524

PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION
525 Twenty-Third Street, N.W.
Washington, D.C. 20037, U.S.A.

1990

Published also in Spanish (1990) with the title:
Las condiciones de salud en las Américas, 1990 edition
PAHO Scientific Publication No. 524
ISBN 92 75 31524 8

ISBN 92 75 11524 9

© Pan American Health Organization, 1990

Publications of the Pan American Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. For rights of reproduction or translation of PAHO publications, in part or *in toto,* application should be made to the Editorial Service, Pan American Health Organization, Washington, D.C. The Pan American Health Organization welcomes such applications.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Pan American Health Organization concerning the legal status of any country, territory, city, or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the Pan American Health Organization in preference to others of a similar nature that are not mentioned.

CONTENTS

	Page
Preface	xiii
PART I. GENERAL CONTEXT	1
Political, Economic, and Social Situation	1
The Region and Changes in Today's World	1
Relationship Between Health and Economics	3
Social Effects of the Crisis	9
The Regional Political Process	10
The Population: Characteristics and Trends	12
Data Sources and Information Quality	12
Size, Growth, and Composition of the Population	13
Components of Population Growth and Demographic Transition	15
Age Structure of the Population	16
Fertility: Levels and Trends	16
Fertility in High-risk Age Groups	17
International Migration	20
Urbanization	21
Degree of Urbanization and Urban Population Growth	21
Settlement Patterns of the Urban Population	23
Rural Population, Its Growth and Dispersion	23
Mortality: Progress, Problems, and Prospects	24
Data Sources and Estimation Methods	24
General Mortality	25
Situation in the Subregions	25
Situation by Country	27
Mortality by Age Groups	28
Mortality by Sex	35
Mortality by Major Groups of Causes	35
Health Situation, Standard of Living, and Infant Mortality	44
Environmental Health	49
Health and Work	50
PART II. HEALTH STATUS	52
Health Problems of Specific Groups	52
Health of Children and Adolescents	52
Infant Mortality	53
Mortality in Children Aged 1 to 4 Years	68
Mortality in Children Aged 5 to 9 Years	69
Specific Health Problems of Children	73
Diarrheal Diseases	73
Acute Respiratory Infections	75
Diseases Preventable by Vaccination	79
Poliomyelitis	80
Measles, Diphtheria, Whooping Cough, and Tetanus	83
Health of Adolescents	84

Mortality 85
High-risk Behavior 85
Health of Adults 92
Noncommunicable Chronic Diseases 94
Cardiovascular Diseases 94
Malignant Neoplasms 97
Other Chronic Conditions 100
Risk Factors 101
Accidental Injuries 102
Mental Illness 108
Alcohol and Drug Abuse 110
Disabilities 112
Health of Women 113
Differences in Mortality Levels and Structure by Sex 113
Children 1 to 4 Years Old 114
Age Group 15 to 44 Years Old 118
Female Morbidity and Mortality and Gender Determinants 119
Mortality and Morbidity Associated with Maternity 119
Anemia and Malnutrition 123
Gynecological Cancer 123
Cerebrovascular Diseases 125
Mental Health 125
Family Violence 126
Occupational Health and the Double Workday 126
Risks Associated with the Lack of Drinking Water 126
Menopause and Aging 127
Fertility Control and Reproductive Rights 127
Reproductive Dynamics and Changes in the Prevalence of Maternal Morbidity and Mortality Risks 129
Reproductive Rights and Gender Differences in Fertility Control 131
Final Considerations 136
Health of the Elderly 137
Prevalent Problems 138
Other Problems Affecting the Daily Life of the Elderly 139

Other Health Problems of Importance in the Region 143
Communicable Diseases 143
Malaria 143
Dengue 149
Yellow Fever 154
Plague 155
Cholera 156
Schistosomiasis 156
American Trypanosomiasis 160
Leprosy 164
Viral Hepatitis 166
Acquired Immunodeficiency Syndrome (AIDS) 169
Tuberculosis 174
Zoonoses and Vesicular Diseases in Animals 178
Rabies 178
Brucellosis 180
Leptospirosis 181
Bovine Tuberculosis 181
Hydatidosis 182
Trichinosis 182

Taeniasis and Cysticercosis 182
Equine Encephalitis 182
Vesicular Diseases in Animals 182
Food and Nutrition Situation 184
Food Availability 184
Food Consumption 186
Biological Utilization of Food 186
Food Aid Programs 186
The Food and Nutritional Status of Children and Adolescents 187
Trends in Nutritional Status 190
Specific Nutritional Deficiencies 192
Iron-deficiency Anemia 192
Iodine-deficiency Disorders 193
Vitamin A Deficiency 195
Malnutrition and Chronic Diseases 196
Oral Health 196
Principal Problems 197
Dental Caries 197
Periodontal Disease 198
Dentomaxillary Anomalies 198
Oral Cancer 198
Maxillofacial Injury 198
AIDS 198
Preventive Measures 199
Dental Human Resources 199
Disasters 202
Effects of Disasters on Health 203
The Countries' Response 205
Future Prospects 207
Violence 207
Food-borne Diseases 212
Food-borne Infections 212
Food Poisoning 214
Environmental Problems Affecting Health 215
Drinking Water and Sanitation 215
Quality of Services 218
Operations and Maintenance 218
Collection and Disposal of Sewage and Excreta 220
Urban Refuse Collection 220
Pollution of Water Resources 220
Underground Water 221
Surface Water 222
Biological Pollution 222
Chemical Pollution 222
Air Pollution 223
Cases of Air Pollution 224
Pesticide Use 224
Management and Handling of Hazardous Toxic Wastes 227
Accidents Caused by Chemical Agents 227
Food Contamination 227
Health of Workers 228

PART III. HEALTH SYSTEMS INFRASTRUCTURE 230

Policies and Strategies 231
Institutional Organization of the Health Sector 231
Health Legislation 233
Priority Policies and Programs 235
Health Care Financing 243
Intersectoral Coordination 246
Decentralization and Development of the Health Systems 247
Local Health Systems 248
Community Participation, Health Promotion, and Health Education 251
Managerial Capacity of the Health System 255
Planning and Programming in the Health System 255
Administration and Operation of the Health Systems 256
Information Systems 257
Human Resources 258
Supply and Demand in the Health Work Force 259
Organizational Aspects 261
Training of Professionals 262
Physical Health Resources 264
Inpatient Capacity in Hospital Establishments 264
Operation and Maintenance Conditions 268
Special Diagnosis and Treatment Resources 271
Laboratory Services 271
Diagnostic Imaging and Radiation Therapy 275
Drugs, Vaccines, and Biologicals 279
Drugs 279
Production and Quality Control of Biologicals 282
Production of Services 284
Hospital Discharges 284
Outpatient Consultations 284
Environmental Health Infrastructure 285
Water and Wastewater Disposal Services 286
Urban Refuse Collection Services 287
Environmental Pollution Management 287
Occupational Health 288
Laboratories for Analysis of Chemical Substances and Toxicology Laboratories 289
Science and Technology in Health 289
Trends in Health Research 289
Scientific and Technical Health Information 294
Technological Development: Policies and Process 297

ANNEX (Tables)

Technical Notes 301

Annex I. Economic data 307

I-1. Gross domestic product per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988 307

I-2. Total imports of goods and services per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988 308
I-3. Gross domestic investment per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988 309
I-4. Total consumption per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988 310
I-5. Total central government expenditure per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988 311
I-6. Total central government expenditure as a percentage of gross domestic product in countries of Latin America and the Caribbean, 1970–1988 312
I-7. Central government health expenditure per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988 313
I-8. Central government health expenditure as a percentage of total central government expenditure in countries of Latin America and the Caribbean, 1970–1988 314
I-9. Central government health expenditure as a percentage of gross domestic product in countries of Latin America and the Caribbean, 1970–1988 315

Annex II. Population 316

II-1. Censuses in the Americas and enumerated population, by subregion and country, around 1970 and 1980 316
II-2. Estimated and projected population and annual geometric growth rates, by subregion and country, 1985, 1990, 1995, and 2000 317
II-3. Midyear population estimates (in thousands), by subregion and country, 1980–1989 318
II-4a. Live births, by subregion and country, 1980–1988 319
II-4b. Birth rates per 1,000 population, by subregion and country, 1980–1988 320
II-5a. Estimated and projected population (in thousands) under 15 years, 15 to 64 years, and 65 years and over, by subregion and country, 1985 and 2000 321
II-5b. Estimated and projected percentage population under 15 years, 15 to 64 years, and 65 years and over, by subregion and country, 1985 and 2000 322
II-6a. Estimated population (in thousands) in selected age groups, by subregion and country, 1985 323
II-6b. Projected population (in thousands) in selected age groups, by subregion and country, 2000 324
II-7. Estimated and projected urban population (in thousands) and percent of total population living in urban areas, by subregion and country, 1985, 1990, and 2000 325

Annex III. Mortality 326

III-1. Crude birth and death rates (per 1,000 population) and infant mortality rates (per 1,000 births) reported around 1987 and estimated for 1985–1990, by subregion and country 326
III-2a. Total number of deaths, by subregion and country, 1980–1988 327
III-2b. Crude death rates (per 1,000 population), by subregion and country, 1980–1988 328
III-3a. Total number of deaths by age, sex, and country, latest data available 329
III-3b. Crude, age-adjusted, and age-specific death rates (per 1,000 population), by sex and country, latest data available 331
III-4a. Number of infant deaths, by subregion and country, 1980–1988 333

III-4b. Infant mortality rates (per 1,000 live births), by subregion and country, 1980–1988 334
III-5a. Number of deaths of children 1 to 4 years of age, by subregion and country, 1980–1988..... 335
III-5b. Death rates of children 1 to 4 years of age (per 1,000 population), by subregion and country, 1980–1988..... 336
III-6. Number of deaths of children under 5 years and percent of all deaths, by subregion and country, latest data available..... 337
III-7a. Maternal deaths, by subregion and country, 1980–1988..... 338
III-7b. Maternal mortality rates (per 10,000 live births), by subregion and country, 1980–1988 339
III-8. Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available 340
III-9a(1). Number of deaths from infectious and parasitic diseases (001–139), by age, sex, and country, latest data available 367
III-9b(1). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from infectious and parasitic diseases (001–139), by age, sex, and country, latest data available 368
III-9a(2). Number of deaths from enteritis and other diarrheal diseases (007–009), by age, sex, and country, latest data available 369
III-9b(2). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from enteritis and other diarrheal diseases (007–009), by age, sex, and country, latest data available..... 370
III-9a(3). Number of deaths from tuberculosis, all forms (010–018), by age, sex, and country, latest data available..... 371
III-9b(3). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from tuberculosis, all forms (010–018), by age, sex, and country, latest data available..... 372
III-9a(4). Number of deaths from malignant neoplasms (140–208), by age, sex, and country, latest data available..... 373
III-9b(4). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasms (140–208), by age, sex, and country, latest data available..... 374
III-9a(5). Number of deaths from malignant neoplasm of lip, oral cavity, and pharynx (140–149), by age, sex, and country, latest data available 375
III-9b(5). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of lip, oral cavity, and pharynx (140–149), by age, sex, and country, latest data available 376
III-9a(6). Number of deaths from malignant neoplasm of stomach (151), by age, sex, and country, latest data available..... 377
III-9b(6). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of stomach (151), by age, sex, and country, latest data available..... 378
III-9a(7). Number of deaths from malignant neoplasm of colon (153), by age, sex, and country, latest data available..... 379
III-9b(7). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of colon (153), by age, sex, and country, latest data available..... 380
III-9a(8). Number of deaths from malignant neoplasm of rectum, rectosigmoid junction, and anus (154), by age, sex, and country, latest data available 381
III-9b(8). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of rectum, rectosigmoid junction, and anus (154), by age, sex, and country, latest data available 382

III-9a(9). Number of deaths from malignant neoplasm of trachea, bronchus, and lung (162), by age, sex, and country, latest data available 383
III-9b(9). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of trachea, bronchus, and lung (162), by age, sex, and country, latest data available 384
III-9a(10). Number of deaths from malignant neoplasm of the female breast (174), by age and country, latest data available..... 385
III-9b(10). Crude, age-adjusted, and age-specific death rates (per 100,000 women), from malignant neoplasm of the female breast (174), by age and country, latest data available 385
III-9a(11). Number of deaths from malignant neoplasm of the cervix uteri (180), by age and country, latest data available..... 386
III-9b(11). Crude, age-adjusted, and age-specific death rates (per 100,000 women), from malignant neoplasm of the cervix uteri (180), by age and country, latest data available 386
III-9a(12). Number of deaths from malignant neoplasm of placenta and uterus, excluding cervix (179, 181, 182), by age and country, latest data available .. 387
III-9b(12). Crude, age-adjusted, and age-specific death rates (per 100,000 women), from malignant neoplasm of placenta and uterus, excluding cervix (179, 181, 182), by age and country, latest data available..... 387
III-9a(13). Number of deaths from malignant neoplasm of prostate (185), by age and country, latest data available..... 388
III-9b(13). Crude, age-adjusted, and age-specific death rates (per 100,000 men), from malignant neoplasm of prostate (185), by age and country, latest data available 388
III-9a(14). Number of deaths from leukemia and other malignant neoplasms of the lymphatic and hematopoietic tissue (200–208), by age, sex, and country, latest data available 389
III-9b(14). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from leukemia and other malignant neoplasms of the lymphatic and hematopoietic tissue (200–208), by age, sex, and country, latest data available 390
III-9a(15). Number of deaths from diabetes mellitus (250), by age, sex, and country, latest data available 391
III-9b(15). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from diabetes mellitus (250), by age, sex, and country, latest data available 392
III-9a(16). Number of deaths from nutritional deficiencies (260–269), by age, sex, and country, latest data available..... 393
III-9b(16). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from nutritional deficiencies (260–269), by age, sex, and country, latest data available..... 394
III-9a(17). Number of deaths from diseases of the heart (390–429), by age, sex, and country, latest data available..... 395
III-9b(17). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from diseases of the heart (390–429), by age, sex, and country, latest data available 396
III-9a(18). Number of deaths from hypertensive disease (401–405), by age, sex, and country, latest data available..... 397
III-9b(18). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from hypertensive disease (401–405), by age, sex, and country, latest data available 398
III-9a(19). Number of deaths from ischemic heart disease (410–414), by age, sex, and country, latest data available..... 399

III-9b(19). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from ischemic heart disease (410–414), by age, sex, and country, latest data available 400
III-9a(20). Number of deaths from cerebrovascular disease (430–438), by age, sex, and country, latest data available 401
III-9b(20). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from cerebrovascular disease (430–438), by age, sex, and country, latest data available 402
III-9a(21). Number of deaths from influenza and pneumonia (480–487), by age, sex, and country, latest data available 403
III-9b(21). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from influenza and pneumonia (480–487), by age, sex, and country, latest data available 404
III-9a(22). Number of deaths from chronic liver disease and cirrhosis (571), by age, sex, and country, latest data available 405
III-9b(22). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from chronic liver disease and cirrhosis (571), by age, sex, and country, latest data available 406
III-9a(23). Number of deaths from complications of pregnancy, childbirth, and the puerperium (630–676), by age and country, latest data available 407
III-9b(23). Crude, age-adjusted, and age-specific death rates (per 100,000 women), from complications of pregnancy, childbirth, and the puerperium (630–676), by age and country, latest data available 407
III-9a(24). Number of deaths from abortion (630–639), by age and country, latest data available 408
III-9b(24). Crude, age-adjusted, and age-specific death rates (per 100,000 women), from abortion (630–639), by age and country, latest data available 408
III-9a(25). Number of deaths from symptoms, signs, and ill-defined conditions (780–799), by age, sex, and country, latest data available 409
III-9b(25). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from symptoms, signs, and ill-defined conditions (780–799), by age, sex, and country, latest data available 410
III-9a(26). Number of deaths from accidents and violence (E800–E999), by age, sex, and country, latest data available 411
III-9b(26). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from accidents and violence (E800–E999), by age, sex, and country, latest data available 412
III-9a(27). Number of deaths from accidents (E800–E949, E980–E989), by age, sex, and country, latest data available 413
III-9b(27). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from accidents (E800–E949, E980–E989), by age, sex, and country, latest data available 414
III-9a(28). Number of deaths from motor vehicle traffic accidents (E810–E819), by age, sex, and country, latest data available 415
III-9b(28). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from motor vehicle traffic accidents (E810–E819), by age, sex, and country, latest data available 416
III-9a(29). Number of deaths from suicide (E950–E959), by age, sex, and country, latest data available 417
III-9b(29). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from suicide (E950–E959), by age, sex, and country, latest data available 418
III-9a(30). Number of deaths from homicide (E960–E969), by age, sex, and country, latest data available 419

III-9b(30). Crude, age-adjusted, and age-specific death rates (per 100,000 population), from homicide (E960–E969), by age, sex, and country, latest data available 420
III-10a. Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 421
III-10b. Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available 430
III-10c. Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 437
III-10d. Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 443
III-10e. Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 449
III-10f. Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 456
III-10g. Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 464
III-10h. Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available 473
III-11. Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available 482
III-12. Cause groupings used for ranking leading causes of death in Tables III-10 and III-11 502
III-13. Detailed mortality data available in the Pan American Health Organization data bank as of 30 June 1990 503

EXPLANATION OF SYMBOLS IN TABLES

..	Not applicable
...	Data not available
—	Magnitude zero
0.0	Magnitude greater than zero but less than 0.05
*	Provisional data

PREFACE

Health Conditions in the Americas, 1990 edition, is the tenth publication in a series of quadrennial reports issued since 1954 as a way to document the health progress attained by the Member Governments of the Pan American Health Organization. This publication also presents to the XXIII Pan American Sanitary Conference an assessment of the health status of the Region's population in terms of the goal of health for all by the year 2000. This report does not include technical cooperation activities conducted between PAHO and its Member Governments; those activities are presented to this Conference in the *Report of the Director, Quadrennial 1986–1989, Annual 1989.*

As did previous publications in this series, this edition responds to the varied interests of many different users. It offers Member Governments and the Governing Bodies of PAHO information on the major health trends in the Region as a whole and in each one of the countries. In addition, it serves as a reference source for national and international organizations and for students, researchers, and health workers in the countries.

The 1990 edition's two volumes present information mainly for the 1985–1988 period. The first volume reports on health conditions from a regional perspective and comprises three parts and a statistical annex. The first part deals with the overall context: it describes some of the Region's political, economic, and social trends; the main demographic characteristics; and an overview of mortality and environmental health. The second part explores health conditions in the Region, focusing on children, adults, the elderly, and women, and health problems that affect the population in general. The third part, which examines the health systems infrastructure, describes the health sector's response to the problems that have been identified and reports on the environmental health infrastructure in terms of water supply and sewerage, urban sanitation, environmental pollution, and occupational health. The annex to this volume is a compilation of the most up-to-date statistical data available, which supplement information published in previous reports and serve to document the text. The second volume summarizes the health conditions and infrastructure in each of the Region's countries; its analysis by subject area follows the organization of the first volume.

Data from many official and semiofficial sources were used to assemble both volumes. Despite every effort made to reconcile this information, not all discrepancies could be eliminated, and some of these may warrant concern. Nonetheless, we firmly believe in the importance of this information, and we are convinced that its wider use will be the best incentive for generating, processing, and analyzing increasingly pertinent, valid, and timely data.

Carlyle Guerra de Macedo
Director

PART I

GENERAL CONTEXT

Political, Economic, and Social Situation

This section examines the political, economic, and social context within which the health conditions in the population of the Americas have evolved during the past quadrennium, as well as the ability of the Region's societies to deal with their health problems. The premise for this analysis has been that health conditions are the result of an interaction between biological and environmental determinants, as well as economic, cultural, and political factors. In addition, activities to promote, protect, or recover health also depend on political, economic, and social factors that lie outside the technologies and knowledge of the health sector itself. As will be shown below, these factors depend not only on the historic heritage of the countries, which differs greatly from one to another, but also on the far-reaching changes that are taking place within economic and political systems at both the regional and the global level.

Acknowledging the importance of these factors does not mean that their role in determining health conditions and the evolution of health systems has been fully understood. Nor has it been possible to establish a rigid hierarchy among these factors; rather, existing evidence suggests that they work reciprocally.

As will become clear, the following four headings seem to converge into a single picture in which the population's deteriorating living conditions and the limited ability of societies and governments to deal with this trend stand out. As a result, the overall international, economic, social, and political context during the past quadrennium was doubly unfavorable for health conditions in the Americas.

The Region and Changes in Today's World[1]

The socioeconomic and political conditions prevailing in the Americas since the 1970s are linked to the profound changes that have been occurring in the capitalist economy worldwide since the late 1960s. These changes have manifested themselves differently in core countries than in peripheral ones.

The core countries have been affected by the breakdown of the international financial system agreed upon at Bretton Woods, which has been accompanied by an erosion of the United States of America's world dominance. While international trade has been increasingly concentrated among these countries, the United States has experienced a negative balance of trade with respect to the Japanese and the European Economic Community markets. Economic growth rates have dropped and unemployment has increased, and, in general, the "quality of life" has been impaired by increases in the cost of living and environmental degradation.

As the situation was understood in most Third World countries in the 1950s and the 1960s, the changes in the peripheral countries and in their relationship to the core countries have been manifested by a further deterioration in the terms of trade, a process of differentiation among peripheral countries, and a "blockage of the road to industrialization."[2]

The transnationalization of the global economy, coupled with efforts by some of the peripheral societies to adapt to the worldwide reorganization of the productive process, contributed to the large public indebtedness incurred by many countries of the Region during the 1970s. As financial capital became more expensive and speculative in response to the economic policies of the core countries, the peripheral countries could no longer sustain development, and they were compelled to agree to unfavorable repayment terms that their already weakened economies could not honor. The "debt crisis," which has led to negative capital flows for debtor countries, is yet another aspect of the global economy's profound and universal crisis that magnifies the effects on the peripheral societies, which include most societies in the Americas.

[1]This section is based on the report entitled "El contexto sociopolítico de las Américas y las condiciones de salud" prepared for PAHO in 1989 by M. López Maya of Study Center for Development (CENDES)/Universidad Central de Venezuela.

[2]See, *inter alia*, F. Proebel, "Perspectives of the New International Division of Labor" (Federal Republic of Germany: Starnberger Institut, mimeographed, 1988); P. Drucker, "The Changed World Economy," *Foreign Affairs*, 64(4), Spring 1986; A. Córdova, "El modo de articulación externo y nuevas estrategias de desarrollo en América Latina" (paper presented at the International Seminar on the International Economic Crisis and its Impact on Latin America, National Autonomous University of Mexico, Mexico, June 1982); and "La crisis económica venezolana y la crisis del sistema capitalista mundial" (Caracas, mimeographed, 1985).

In addition to the global economic crisis and its aftermath in the Region, peripheral countries suffer from imbalances generated by the application of development models based on Economic Commission for Latin America and the Caribbean (ECLAC) principles. These models sought to overcome economic underdevelopment, promote social equity and well-being for the population, and contribute to the Region's political stability.

In fact, the development goals inspired by ECLAC were never fully attained: the desired self-sustaining economic growth did not come about. In the social area, a lack of qualified manpower stymied efforts to overcome technological unemployment, thus aggravating the marginalization of large population groups and prompting the State to absorb at least part of the unemployed masses by expanding its bureaucracy. Regarding health, housing, and education problems, only partial gains were attained despite the State's investment of substantial resources to resolve them. Poverty was not eradicated. In the political sphere, the traditional instability of systems of government was not overcome, as evidenced by countries that returned to dictatorships during the 1970s.[3]

In the sociopolitical area, the crisis has strengthened the dominant roles played in the global economic system by large transnational enterprises and their financial divisions, whose capacity to exert national and international influence affects the direction of world economic policy and the new international division of labor. In the Region of the Americas, these strengthened players displaced traditional sectors from power blocs, with the consequent effects on the avenues open to the State and on the legitimacy of political systems.

The adaptation of peripheral societies to these dynamics has been passive and traumatic. During the 1970s, many societies in the Americas began to adjust to the new situation, following development styles dictated by minority interests and controlled by authoritarian governments.

These authoritarian governments began to steer their national economies according to a new, export-oriented industrialization strategy based on an economic orientation that tended toward "wild capital accumulation" and which favored "infrastructure investments" and relinquished most of the responsibility for the "social question" to the private sector. Increasingly, overall social policies were ruled by profitability, and the authoritarian State sought to privatize social services.[4]

Some democratic States also adjusted to the new situation, but through different patterns and with higher cost expenditures, in response to the demands of a broader spectrum of political and social sectors. The Region's oil-producing countries, such as Mexico and Venezuela, would feel the effects of the global crisis later, but these repercussions would be magnified by the huge external debt resulting from unfulfilled expectations regarding the behavior of oil prices in the 1980s. A major share of this indebtedness was incurred in order to readjust their productive systems to the new conditions prevailing in the global economy.[5]

In Central America the situation has been different. These countries were only partially affected by the industrial modernization processes of the 1960s and early 1970s, and only to an incipient degree. Since then, most of them have been beset by wars and internal social upheavals in which the conflicting agendas of domestic sociopolitical players have competed with international geopolitical interests, thus aggravating the problems associated with the economic crisis. These countries, which had no reserves for dealing with such a situation, were thwarted in their efforts to modernize.[6]

In the 1980s practically all the peripheral economies of the Region broke down and had to submit to adjustments imposed by international financial agencies and external creditors. In these circumstances, the ECLAC theories for the development of these societies were replaced by concepts that favored economic growth per se, without regard for the tradition of social rights that these societies had built at least since the end of World War II.

These adjustment policies generally include measures which, in addition to combating inflation and promoting economic growth, seek to involve Latin American and Caribbean societies once again in the changing conditions of the global economy.[7] However, as seen at the international level, the social and political effects of these policies have contributed to the social, political, and institutional deterioration which most of the Region's societies had already experienced to some degree or another during the 1970s.[8]

[3]See, *inter alia*, the Latin American Economic System (SELA) document, *Las consecuencias sociales y políticas del endeudamiento externo de América Latina y el Caribe* (Caracas, May 1988).

[4]F. H. Cardoso, "Las políticas sociales en la década de los años ochenta: nuevas opciones," *El Trimestre Económico* (Mexico: Fondo de Cultura Económica) 50(1), no. 197, January-March 1983.

[5]F. Proebel, "Perspectives of the New International Division of Labor" (see footnote 2).

[6]R. Suárez, "La crisis económica y sus repercusiones sobre la situación de salud y el gasto publico en salud" (Washington, D.C.: PAHO, mimeographed, 1989).

[7]From H. Soontag, "Implicaciones y repercusiones políticas e institucionales de las políticas de ajuste" (Caracas: SELA, mimeographed, 1988).

[8]G.A. Cornia, R. Jolly, and F. Stewart, *Ajuste con rostro humano* (Madrid: UNICEF/Siglo XXI, 1987).

Relationship Between Health and Economics

The Macroeconomic Situation

Annex Tables I-1 through I-4 present four of the macroeconomic indicators of greatest relevance for this discussion for 25 of the larger countries of the Region.[9] These are, respectively, gross domestic product (GDP), or total output; imports of goods and services; gross domestic investment (exclusive of allowance for depreciation); and consumption. All figures are per head of population and are expressed in constant 1988 U.S. dollars in order to remove so far as possible the effects both of country (population) size and of inflation. Unlike many other statistics more directly related to health and health care, data for these variables are available, at least as preliminary estimates, up through 1988. To provide an adequate historical perspective, values are shown for the period beginning in 1970. Annex Table I-5 provides a fifth relevant macroeconomic variable, also in 1988 U.S. dollars, namely, the total central government expenditure per person, for which information is generally available through 1987, with 1988 data for a few countries. Following the discussion of the general macroeconomic performance of recent years, subsequent topics consider some of the impacts of this situation on the health sector, first in purely financial terms and then by way of effects on the output of services and the health status of the population.

Although the economic crisis has continued, its dimensions have not been uniform. As Annex Table I-1 shows, there is great variation from one country to another in the magnitude and timing of economic changes, as well as considerable year-to-year variation within some countries.

It can be seen that a few countries were insulated from the crisis to a great extent and showed almost no interruption of income growth during the decade. As a rule, the substantial declines in income during the early years of the crisis were concentrated in the larger, more complex economies of the Region, which were characterized by effective barriers to trade, overvalued currencies, and other features that have required large and sometimes painful adjustments. The relationship between the level of a country's income prior to the crisis and the degree of subsequent decline is not systematic, but some of the poorest countries were among the most affected.

The only way a country can repay an external debt of the sort many countries acquired before and during the recession is by running a trade surplus, that is, exporting more than it imports. External adjustment, as an alternative either to defaulting or to a steady increase in the debt, therefore requires that exports increase or that imports be reduced. For the typical Latin American country, most of the external adjustment that has occurred was produced by import reductions, since physical expansion of exports was offset by falling prices. As can be seen in Annex Table I-2, the declines in imports of goods and services since the end of the 1970s were usually larger than the declines in output, came sooner, and have lasted longer. To the extent that the health sector depends on imports for certain critical inputs, particularly drugs and other recurrent items, the reduced capacity to import can affect the provision of health care proportionately much more than the weight of those inputs in the total health expenditure. This problem is made worse if the country had to devalue its currency sharply, as was commonly the case, making imports much more expensive than before. In that situation, constant real spending in local currency would result in a real reduction in the capacity to provide care or to assure its quality and efficacy.

Partly as a consequence of reduced imports, partly because incomes fell and made investments less profitable, and partly because governments cut back their capital spending as a means of adjustment to the crisis, investment per person also fell, often quite sharply, in the early 1980s, as Annex Table I-3 shows. Over one or two years, investment can safely be reduced, in an effort to protect consumption and living standards, without creating long-term problems for the economy; over longer periods, however, failure to invest reduces the capacity to sustain or expand consumption and to create new employment. Thus, the alarming aspect of the numbers in that table is not the sudden, catastrophic decline of capital spending, but the fact that low levels of investment persisted in most cases for several years. Some part of this retrenchment possibly represents the abandonment of capital projects of low return and doubtful social utility, so that the reduction in a country's creation of productive capacity may be slightly less severe than the fall in spending on investment. However, it is unlikely that any such gain in efficiency can account for more than a small part of the decline. Since investment in the health sector fell in roughly the same proportion as total investment, or as total public sector investment, the expansion of physical infrastructure came to a halt, and even the upkeep of existing buildings and equipment was curtailed.

Because investment was systematically reduced more than total output, consumption per head, which is a bet-

[9]These data come from the Inter-American Development Bank and exclude all Member Countries with populations of 200,000 or less, as well as Cuba, Canada, and the United States. Patricio Márquez of the World Bank provided essential help in assembling the information. The estimates for the CARICOM countries are from an unpublished study, done for PAHO by Rubén Suárez, on the effects of the economic crisis on health care spending in the English-speaking Caribbean. See also L. Taylor, *Economic Adjustments and Health Care Financing in the Caribbean* (Mona, Jamaica: Institute of Economic and Social Research, University of the West Indies, 1988).

ter short-term indicator of living standards, was partially protected during the recession. Even so, there has been substantial decline in this measure, as Annex Table I-4 shows. In cases where some recovery has subsequently taken place, it has not always been enough to restore precrisis levels. Of course, consumption of marketable goods and services cannot be treated as an exact measure of human welfare over so long an interval, because there have been substantial changes in relative prices and consequent redistribution of people's consumption spending. In addition, there may have been serious deterioration in the quality or accessibility of public services for which people do not pay full cost but which contribute materially to their welfare. The most that this measure can indicate is that very few countries seem to have emerged from the recession; even some of the CARICOM countries, which suffered less income reduction than did the Latin American countries, have not recovered.

The effect on welfare of changes in central government expenditure per person, shown in Annex Table I-5, is much harder to gauge than the effect of changes in total product or total consumption, because spending can be shifted back and forth between the public and private sectors in response to economic changes or as a policy decision to expand or contract the sphere of public action. Within a given country, however, short-term changes in this measure reflect the net effect of economic difficulties and the perceived need for government expenditure to maintain employment and living standards, at least for some groups in society. In many countries, this variable declined substantially from its peak precrisis level in 1981 or 1982 to the typical level of 1985–1987. However, a drop in central government spending should not always be interpreted as a bad thing, because if a high spending level is not matched by high revenues, it produces runaway inflation as total demand outstrips supply.

If government spending initially stays level or continues to expand (from inertia or as part of an anticyclical policy) as the economy enters recession, the share of the GDP represented by government spending will of course rise, sometimes dramatically; subsequent retrenchment, as revenues fall and fiscal pressures grow, will then reduce the share. This is the most common pattern to be seen in Annex Table I-6, which relates the numbers in Annex Table I-5 to those in Annex Table I-1. Overall, in the great majority of countries, central government spending accounted for a smaller share of total economic output at the end of the decade than at the beginning of the 1980s. When reduced spending means reduced waste of public monies and less restrictive control of the economy, thereby liberating the forces that enhance growth, it is a welcome change. However, its consequences for the population's welfare are negative to the extent that public services such as health care are sacrificed and benefits are withdrawn from those least able to care for themselves. Aggregate numbers reveal nothing about how these effects may offset each other, or their distributive implications.

Central Government Expenditure on Health

Determining just how much governments spend on health care can be difficult because of the multitude of institutions responsible for health care under central, state, or local governments. Attention is given here to central government expenditure, as derived from national accounts estimates: Annex Table I-7 shows dollar amounts per person, and Annex Tables I-8 and I-9 relate these sums to total central government spending and to total GDP, respectively. Without detailed study of needs for care, costs of providing it, and alternative sources for it in a particular country, it is impossible to say whether the spending levels shown in Annex Table I-7 are adequate, reasonable, or equitable. Rapid changes up or down in real spending, however, can still be interpreted as easing or tightening the availability of medical care or as probably improving or worsening its quality.

In line with the general reduction of public outlays, most governments have cut back substantially on what they spend on health. Although these figures are highly sensitive to devaluation and inflation, and thus changes in the capacity to provide care are not necessarily as large as changes in apparent real expenditure, the reduction in resource commitment has been considerable in many countries. On the question of whether the public health sector has suffered more or less than other areas of public expenditure, Annex Table I-8 offers mixed evidence. Most commonly, the percentage of the central budget spent on health declined between the late 1970s and the late 1980s, but this pattern is not observed in all countries. Some countries have protected the health sector's share of total central government outlay, while others have largely restored the sector's prominence following cuts in the share in the early years of the crisis. Because both GDP and public health care spending have tended to fall, the latter's share of the former, shown in Annex Table I-9, can have gone up or down. The share of GDP has fallen more often than it has risen, but in a few countries public health care expenditure has expanded relative to total output. In general, the relation of public health care spending to GDP and to total public sector expenditure is more stable in the smaller Caribbean nations than in the larger, mostly Latin American countries (see footnote 9).

Looking at what is spent on health care, and especially considering only what is spent by central governments, provides merely a very rough idea of how the provision of health care and the health status of the populations

have been affected by the crisis. To examine these consequences in more detail, a small number of countries are used as case studies in the following section.[10]

Impact of the Economic Crisis on the Health Sector

The relationship between the economy and health is a topic that has recently drawn the attention of some authors. The crisis of the 1980s touched off new interest in the issue as it relates to both the developed countries[11] and the countries of Latin America and the Caribbean.[12]

Presented below are some findings of a study on the impact of the economic crisis of the 1980s on the health sectors of five countries: Brazil, Ecuador, Honduras, Mexico, and Uruguay.[13] The study focuses on the effects of the crisis on resource availability and use, health-care delivery, and population health status. Some important findings are common to all or most of the country studies:

- The resources available for the public health sector diminished in the same proportion as total public spending. It seems that the governments neither sacrificed the health sector as "unproductive" nor granted it a privileged position as a basic need of the population. This pattern is not evident in all years or in all countries, but it is characteristic of the period as a whole. Table 1 summarizes central government health expenditures for the five countries, using the same measures as in Annex Tables I-7 through I-9.
- Contrary to what might have been expected, cutbacks in the health budget did not routinely reflect the proportion of funding obtained from different sources. In fact, services financed through social security were not shown to have suffered less than those provided through the ministries of health, except at the very outset of the crisis.
- As expected, budgetary cuts fell more heavily on investment, current expenditure being spared to some extent. However, it is unclear from available data whether provision of services might still have been impaired by this response, because it is not known what fraction of current expenditure might have become ineffective for lack of capital outlays. As was indicated above, the longer the recession lasts, the more serious this problem can become.
- There was no systematic pattern for cutting the costs of programs, activities, and agencies in the public sector. Consequently, there is no evidence of protection of, or discrimination against, particular types of services, nor of special attention to specific population groups. The only systematic protection seems to have been given to vaccination programs; coverage has been maintained or has increased.
- Health sector workers typically paid a substantial part of the cost of adjustment to the crisis, not through loss of employment but through a reduction in real wages. However, this reduction occurred throughout the public sector, and it does not appear that health workers suffered either more or less than other government employees.
- In quantitative terms, public health services were not curtailed: scarce resources did not generally translate into fewer consultations or admissions. Table 2 shows these results. (Reductions in hospital admissions were typically the result of cost containment policies rather than a simple consequence of the crisis, and they were offset by expansions of outpatient care.) It is not known, however, whether the need for care grew, because the figures reflect only care that was actually provided. Unmet needs may have increased.
- Part of the reduction of resources in the hospital services was absorbed through a small decrease in the average stay. This lowered costs per admission; it is not clear what effect this adjustment had on the quality of care.
- Even allowing for the reduction in real wages and higher bed turnover, the combination of diminished resources and approximately constant output gives rise to the suspicion that part—possibly a large part—of the cost of the adjustment was paid through a decline in the quality of care. However, no direct evidence points to this conclusion, nor can it be inferred from the overall data.[14]

[10]The material that follows is based on P. Musgrove (ed.), "Economic Crisis and Health: The Experience of Five Latin American Countries in the 1980s," Annex II to Document CD34/21, prepared for the XXXIV Meeting of the PAHO Directing Council, Washington, D.C., Sept. 1989. This document includes the results of a regional technical cooperation project partially financed by the Inter-American Development Bank and executed by the Pan American Health Organization. A slightly different version was published as pp. 61–70 in *Economic and Social Progress in Latin America*. (Washington, D.C.: Inter-American Development Bank, 1989). The base period of reference is 1980–1986, and more information is available on the public sector than the private sector.

[11]Joint Economic Committee, Congress of the United States, "Estimating the Effects of Economic Change on National Health and Social Well-Being—Study Prepared for the Use of the Subcommittee on Economic Goals and Intergovernmental Policy" (Washington, D.C., 1984); M.H. Brenner, "Mortality and Economic Instability: Detailed Analyses for Britain and Comparative Analyses for Selected Industrialized Countries," *Int J Health Serv* 13(4):563–680, 1983; M.W. Linn, R. Sandifer, and S. Stein, "Effects of Unemployment on Mental and Physical Health," *Am J Public Health* 75(5):502–506, 1985.

[12]An early regional study was "The Economic Crisis in Latin America and the Caribbean and its Repercussions in the Health Sector," Document CD30/16, prepared for the XXX Meeting of the PAHO Directing Council, Washington, D.C., Sept./Oct. 1984. It was updated in 1985 by R. Landmann, in "Update of the Report on the Economic Crisis in Latin America and the Caribbean and its Repercussions in the Health Sector," (Washington, D.C.: PAHO, 1985). See also P. Musgrove, "The Economic Crisis and its Impact on Health and Health Care in Latin America and the Caribbean," *Int J Health Serv* 17(3):411–441, 1987, and publications such as "The Impact of World Recession on Children: A UNICEF Special Study" in *The State of the World's Children 1989* (Oxford: Oxford University Press, 1989). Also, A. Cornia, in "A Survey of Cross-national and Time-series Literature on Factors Affecting Child Welfare," *World Dev* 12(3):187–202, 1984, emphasizes the effects of changes on children, as an especially vulnerable population group, and on the health status of the population.

[13]The first drafts of the country studies were completed between May and November 1987. They were revised the following year, during which time the comparative analysis that served as the basis of this summary was also prepared.

[14]Evidence regarding this question does exist in a country that was not included in the study: see M. Petrera Pavone, "Eficacia y eficiencia de la seguridad social en relación con el ciclo económico: el caso peruano," *Bol Of Sanit Panam* 103(6):620–634, 1987.

TABLE 1

Central government health expenditure,[a] in five countries, 1977–1986.

	1977	1978	1979	1980	1981	1982[b]	1983	1984	1985	1986
Mexico										
Total	73	...	83	...	...	100	94	97	101	90
Per Person	83	...	90	...	...	100	93	94	95	83
As fraction of GNP	100	...	100	...	...	100	100	99	100	93
As fraction of Central Government Total Expenditure	133	...	...	...	...	100	94	97	114	...
Honduras										
Total	70	90	93	96	94	100	103	101	102	120
Per Person	77	104	103	103	98	100	100	95	93	105
As fraction of GNP	80	95	92	94	92	100	102	96	95	108
As fraction of Central Government Total Expenditure	96	99	102	105	114	100	94	78	76	95
Ecuador										
Total	57	64	69	79	105	100	92	93	96	...
Per Person	66	71	76	84	108	100	89	87	88	...
As fraction of GNP	71	75	76	84	107	100	95	92	92	...
As fraction of Central Government Total Expenditure	90	104	108	94	108	100	106	106	95	...
Brazil										
Total	...	...	...	102	96	100	82	86	98	105
Per Person	...	...	...	108	99	100	81	82	91	96
As fraction of GNP	...	...	...	94	96	100	85	87	89	89
As fraction of Central Government Total Expenditure	...	...	...	104	104	100	91	104	113	78
Uruguay										
Total	...	...	83	90	103	100	91	93	95	...
Per Person	...	...	85	91	104	100	91	91	93	...
As fraction of GNP	...	...	81	83	93	100	97	100	102	...
As fraction of Central Government Total Expenditure	...	...	117	120	119	100	111	113	131	...

[a]These estimates were derived separately in each country and may not be consistent with the estimates based on national accounts used in Annex Tables I-7, I-8, and I-9.

[b]1982 is used as the baseline (= 100).

Source: From Table 3-1 in Philip Musgrove (ed.), Economic Crisis and Health: The Experience of Five Latin American Countries in the 1980s. Document CD 34/21, Annex II. PAHO, Washington, D.C., Sept. 1989.

• It is difficult or impossible to judge whether the crisis led to an effort to improve efficiency in resource use, or whether rigidities in spending and internal obstacles to adjustment worsened the sector's efficiency. Two conclusions seem to be reliable, however. First, the possibility of improving efficiency in response to financial stress depended heavily on the type and amount of inefficiency found in the sector prior to the crisis. Second, whether the opportunity could be seized to improve efficiency and resource use depended greatly on the policies adopted for confronting the crisis, since there was no automatic reaction.

• Examination of changes in national morbidity and mortality rates yields no evidence of any appreciable deterioration of the health of the general population that can plausibly be attributed to the economic crisis. However, this is not the case when certain causes of illness and death in specific groups are studied. Quantitatively, the most important of these indicators are an increase in infantile morbidity caused by diarrhea and an increase—

TABLE 2

Outpatient consultations and hospital discharges, central government, in five countries, 1979–1986.

	1979	1980	1981	1982[a]	1983	1984	1985	1986
Mexico								
Consultations[b]								
Total	88	...	...	100	105	...	88	...
Per capita	95	...	...	100	103	...	115	...
Discharges[c]								
Total	83	...	...	100	109	...	110	...
Per capita	89	...	...	100	107	...	103	...
Honduras								
Ministry of Public Health[d]								
Total	...	70	82	100	95	91	91	94
Per capita	...	75	85	100	92	85	82	82
Honduran Social Security Institute								
Consultations	...	99	97	100	105	108	102	96
Discharges	...	95	96	100	109	112	112	109
Ecuador								
Consultations								
Total	...	...	90	100	...	...	116	...
Per capita	...	...	93	100	...	...	106	...
Discharges								
Total	90	94	96	100	101	106	109	...
Per capita	98	100	98	100	98	100	100	...
Brazil								
Urban consultations	77	87	98	100	107	115	118	120
Rural consultations	82	92	97	100	99	104	97	77
Total	78	87	98	100	106	114	116	115
Per capita	83	91	94	100	104	109	108	105
Urban discharges	82	91	103	100	92	100	96	99
Rural discharges	79	86	94	100	93	84	79	38
Total	81	90	101	100	92	97	93	87
Per capita	87	94	103	100	90	93	87	80
Uruguay								
Consultations								
Total	...	...	...	100	94	92	105	...
Per capita	...	...	...	100	93	91	102	...
Discharges								
Total	...	...	...	100	...	...	105	...
Per capita	...	...	...	100	...	...	102	...

[a]1982 is used as a baseline (=100).
[b]The total of well-patient consultations for control of communicable diseases and timely detection of diseases (all preventive), plus general and specialized outpatient consultations (both curative).
[c]General and specialized hospitalization.
[d]The data do not distinguish outpatient consultations and hospitalizations when health services are provided at the hospital level.
Source: From Table 3-5 in Philip Musgrove (ed.), Economic Crisis and Health: The Experience of Five Latin American Countries in the 1980s. Document CD 34/21, Annex II. PAHO, Washington, D.C., Sept. 1989.

or a slowdown in the decrease—of infant mortality rates. The data showing these changes (Table 3), though they refer to only a few countries, seem to underscore the concern expressed and documented by UNICEF[15] about the possible damage caused by the crisis to this vulnerable group.

• There is also some evidence that the economic disturbances of the first years of the crisis caused a rise in the number of suicides. The evidence on homicides is less clear, but a component of their increase may also be attributable to the crisis. Analysis of all violent deaths including accidents does not reveal any trend.

[15]UNICEF, "Impact of World Recession on Children: A UNICEF Special Study," in *The State of the World's Children* (New York, 1984).

TABLE 3

Mortality from selected causes in children under one year, in four countries, 1979–1986.

	1979	1980	1981	1982[a]	1983	1984	1985	1986
Mexico								
Perinatal conditions	...	...	105	100	98	...	...	...
Intestinal infections	...	...	105	100	104	...	...	...
Influenza and pneumonia	...	...	123	100	92	...	...	...
Nutritional deficiencies[b]	...	...	80	100	107	...	...	...
Ecuador								
Perinatal conditions	105	116	...	100	...	91	93	91
Intestinal infections	135	117	...	100	...	76	69	70
Influenza and pneumonia	117	110	...	100	...	74	70	72
Nutritional deficiencies[b]	82	82	...	100	...	81	79	71
Brazil								
Perinatal conditions	93	95	101	100	93	91	...	...
Intestinal infections	136	123	110	100	96	92	...	...
Influenza and pneumonia	109	102	101	100	92	84	...	...
Nutritional deficiencies[b]	123	116	107	100	83	110	...	...
Uruguay								
Perinatal conditions	129	109	100	91	91	90	77	...
Intestinal infections	209	125	100	122	153	145	101	...
Influenza and pneumonia	121	106	100	86	83	69	101	...
Nutritional deficiencies[b]	134	121	100	100	131	134	143	...

[a]1982 is used as a baseline (= 100).
[b]Excludes anemias.
Source: PAHO, Technical Information System. From Table 3-10 in Philip Musgrove (ed.), Economic Crisis and Health: The Experience of Five Latin American Countries in the 1980s. Document CD 34/21, Annex II. PAHO, Washington, D.C., Sept. 1989.

As previously mentioned, the results obtained in this study are a consequence not only of the crisis as such—a phenomenon exogenous to the health sector—but of the governments' reactions to it, whether improvised or born of deliberation. These reactions begin with decisions on how much to reduce health sector expenditures when total public spending must be cut, and continue with further decisions on cuts in wages and expenditures for other inputs and on the ordering of priorities for programs and activities. It is evident that the crisis took the governments by surprise. It also seems clear that responses to financial constraints took many different forms, from the deliberate acceleration of reforms designed to increase efficiency and/or equity to improvisations that sometimes had to be reversed or modified in short order, as was particularly the case with regard to the health sector's share of public spending, which tended to contract, sometimes sharply, in 1982–1984, but then to recover (Ecuador being an exception).

Because health is classified among the "social" sectors of expenditure and activity, it is sometimes supposed that the effects of economic change on health can be used as a summary measurement or predictor of the effects on the "social situation" as a whole. The evidence just reviewed on how the economic crisis has affected the health sector calls any such assumption into question. It is clear, first, that the severity of the effects on health outcomes was much less than the severity of the recession in incomes and, second, that there can be a great difference between the health outcomes in the population and what happens in the sector, considered as a locus of productive activity. The connection between resources and output and that between output and health status are not simple or automatic. Consequently, the crisis or the measures taken to adjust to it may produce various severe social repercussions without these being visible in anyone's health status or even in the operation of health sector institutions. Beyond doubt, good health is one element of well-being, and poor health or incapacity makes it difficult or impossible to enjoy or have access to many other elements of a good life. However, since these elements do not all react the same way to changes in economic circumstances, health status does not serve as a general indicator of welfare; the production of health care services, and the resources devoted to them, are even less adequate indicators of the overall quality of life.

The discovery that the indicators commonly used to assess people's health did not deteriorate dramatically as a result of unemployment, reduced real wages, and shrunken public expenditures does not mean that the crisis has had no social effects. In some cases, declines in income translated into malnutrition and morbidity or mortality.

But if general health status has not deteriorated markedly during the crisis, part of the reason is undoubtedly that governments have maintained the provision of certain basic health services. Anything that threatens the public capacity to assure such services, and to defend their quality, probably poses a greater danger to the health status of the population than the direct effects of the crisis.

Social Effects of the Crisis[16]

The social effects of the global economic crisis and its attendant changes, coupled with the governmental policies that were implemented in response to it, have differed in the core and the peripheral countries of the Region. In the United States, income distribution has become more concentrated, consumption among the poorer classes has dropped, and governmental social expenditures have declined, including those for health.

Throughout the decade the peripheral countries of Latin America and the Caribbean have experienced severe economic recessions which have profoundly affected the lives of most of the people. The adjustment policies, in turn, have for the most part reinforced this effect, emphasizing inequalities and setting the stage for political polarization. This may be seen in greater detail in the recent evolution of employment, the population's purchasing power, and the Region's poverty levels.

Until the mid-1970s the major employment problem in the countries of Latin America and the Caribbean was underemployment: in Latin America's nonagricultural sector the figure was 13% in 1950, 17% in 1970,[17] and 19% in 1980. In this last year, underemployment in the agricultural sector dropped substantially, which indicated that the problem was rapidly shifting to the urban areas. Beginning in the late 1970s, open unemployment began to be a serious problem, reaching an average of 8% by 1980 (this figure is based on 20 countries).[18] In general terms, open unemployment decreased in the more urbanized countries, whereas it increased in the predominantly rural countries that were in the process of becoming urbanized. After the international crisis set in, the rate of open urban unemployment in Latin America and the Caribbean increased considerably, reaching an average of 11% in 1985.

Instability in the labor market leads many persons to view jobs as temporary, which could increase population shifts within and between cities. This "floating population" would make it very difficult to plan the delivery of social services during certain seasons due to the substantial increase and variety of the resulting demands.[19]

Furthermore, the growth of the informal economic sector affects the provision of health services and limits access to social security services for many families, thus increasing the demand for State-provided health services at a time when adjustments call for constraints on social expenditures.

Negative effects also have been observed in the social security system. In several countries, financially depleted governments have increasingly resorted to already declining social security funds in order to finance social policies, particularly those having to do with health. As a result, income redistribution is taking place between poor and extremely poor workers, thus maintaining and even aggravating social inequities while simultaneously endangering the recovery of social security funds.

Unemployment and underemployment trends have been coupled with a loss of purchasing power.[20] Table 4 summarizes estimates from the Regional Employment Program for Latin America and the Caribbean (PREALC)[21] on the overall decline in real wages for the subregion between 1980 and 1985.

The decline in real wages and in remuneration for informal sector workers occurred while the Region was undergoing a sharp inflationary acceleration. Moreover, the periodic salary adjustments adopted by many coun-

TABLE 4

Evolution of real wages in Latin America, 1980–1985.

Sector	%
Manufacturing industry	−12.2
Urban minimum wage-earners	−16.3
Construction	−17.8
Public sector	−17.1
Agriculture	−15.2

Source: PREALC, see footnote 21.

[16]This section is based on the previously cited report (see footnote 1) by López Maya (1989) and on the Latin American Demography Center (CELADE)/PAHO document "La población urbana y rural y sus condiciones de vida" (1989).

[17]Regional Employment Program for Latin America and the Caribbean (PREALC), *Cambio y polarización ocupacional en Centro América* (Costa Rica: EDUCA, 1986); N. García and V. Tokman, *Dinámica del subempleo en América Latina* (Santiago: PREALC, 1981); "Transformación ocupacional y crisis," *Revista de la CEPAL* (Santiago), No. 24, December 1984.

[18]ECLAC, *Anuario estadístico de América Latina y el Caribe, 1988* (Santiago, 1988); V. Contreras, "Indicadores de empleo y salarios: América Latina" (Santiago: PREALC, 1987); PREALC, *Cambio y polarización ocupacional en Centro América* (1986); and PREALC, *América Latina: Indicadores de empleo y salarios* (Santiago, 1989).

[19]G. Roberts, "Ciudades transicionales," in *Repensando la ciudad en América Latina*, eds. J. Hardoy and R. Morse (Buenos Aires: Grupo Editorial Latinoamericano, Instituto Internacional de Medio Ambiente y Desarrollo, 1988).

[20]See R. Franco, E. Palma, and C. Vergara, "El impacto social de la crisis y el relanzamiento del desarrollo social," *Cuadernos de Ciencias Sociales,* no. 21 (Costa Rica: Latin American School of Social Sciences [FLASCO], 1989).

[21]PREALC, cited in SELA, *Las consecuencias sociales y políticas del endeudamiento externo de América Latina y el Caribe* (Caracas, May 1988), table 3, p. 24.

tries did not always fully restore the wages' purchasing power.

Unemployment and wage deterioration have been directly responsible for the increase in poverty in the Region. In 1970, 26% of urban Latin American families were living in poverty—their income could not meet their basic needs.[22] No standardized information is available for all countries for the 1980s, but selected estimates for some countries show that poverty has worsened in both rural and urban areas. PREALC estimated that the percentage of Latin American families living in poverty had risen to 30% in 1985, which represents about 93 million urban dwellers in Latin America by 1990.[23] In some countries, such as El Salvador, Guatemala, Haiti, and Nicaragua, this situation affects more than 50% of urban families.

In 1970, 10% of urban families were living in extreme poverty; in other words, their incomes were too meager to cover basic food purchases. If this rate is projected to 1990, 30 million urban dwellers in Latin America could be undernourished.

Even though urban areas show high rates of poverty and extreme poverty, it is rural families that are most affected. According to case studies conducted in rural areas by ECLAC and the Food and Agriculture Organization of the United Nations (FAO),[24] the rural situation in most countries has substantially deteriorated. It is estimated that in 1988 an average of 70% of rural families were living in conditions of poverty, and that 40% were living in extreme poverty. This same percentage applied to the 1990 rural population would mean that 89 million people live in poverty and 51 million of them live in extreme poverty in the Latin American countryside.

A comparison of the theoretical per capita availability of calories between core countries and peripheral ones reveals a sharp contrast in the severity of the crisis.[25] In the United States and Canada the figure for per capita calorie availability has increased since 1965. By the end of the 1980s the two countries' respective figures were 3,682 and 3,443. In contrast, Chile, Haiti, Peru, and Uruguay have dropped below their 1965 levels. Only Argentina, Cuba, and Mexico have managed to reach the 3,000 calorie level, with Argentina showing a slight improvement over 1965. Bolivia, El Salvador, and Peru are barely above the level of 2,000 calories per capita, and Haiti remains below 2,000. Although this type of statistic barely touches on a reality that is fraught with abysmal social inequalities, it is nevertheless meaningful in that it reveals the deterioration that has taken place in some of the subregion's societies and gives insight into long-term consequences.

The Regional Political Process[26]

This situation of poverty, along with its physical and psychological consequences, is sharply at odds with the practice and ethics of democracy. In fact, one of the decade's key conflicts that was played out within the sociopolitical context of the Americas was between aspirations for democratization or redemocratization, fostered by various social and political leaders and realized through the return to representative democratic regimes, and the obstacles posed by the population's physical living conditions and by the economic measures imposed by the governments in an effort to consolidate themselves.

In the midst of the crisis, adjustment policies and the efforts of the democratic governments have forged a perverse relationship, since the participation by the vast majority of people in decision making that affects their lives runs counter to economic policies that explicitly place the burden of the crisis on the dispossessed and unprotected sectors of society. These policies also have affected the middle class, which had grown and become stronger during the previous decades but now sees its living conditions deteriorating and the prospects for younger generations closed off.

This is why the redemocratization processes that have taken place in some countries during the past quadrennium have not gone much beyond the attainment of formal political freedoms. Overcoming the authoritarian experience of the 1970s has centered the debate on political freedoms and human rights. As essential as these issues are for the transition to democracy, they neglect the terms of social equality, which also are essential to a democratic way of life.

A clear example of this tension is the chain reaction of social unrest that took place in some countries in the Region toward the end of the decade and that involved not only the poor but also the middle class. The existence of democratic openings seems to have enabled the masses to strongly voice their discontent.

The looting that followed the official announcements of adjustment policies reflects not only a dissatisfaction with the deteriorating living conditions of most people in the Region, but also the widespread frustration with the governments. Moreover, the looting illustrates the questionable legitimacy faced by the Region's political

[22]O. Altimir, "La pobreza en América Latina: un examen de conceptos y datos," *Revista de la CEPAL* (Santiago), No. 13, 1981.

[23]PREALC, *Asumiendo la deuda social,* PREALC 318 (Santiago: ILO, 1988).

[24]R. Urzúa, "Caracterización, dimensiones y evolución de la pobreza rural," in *Estudios sobre la pobreza rural* (Santiago: FAO, 1984).

[25]World Bank, *World Development Report 1988* (Washington, D.C.: International Bank for Reconstruction and Development, 1988).

[26]This section is based on the previously cited report by López Maya (see footnote 1).

systems and countries. These incidents strain the institutional means of resolving conflicts beyond capacity, and the various players that serve as intermediaries between society and the State have proven ineffective in understanding and channeling the interests of their constituents. In addition, the democratic State has had to resort to repressive measures in order to control the situation and safeguard social peace, a practice that is hardly in tune with democratic life.[27]

Events such as these illustrate the price being paid by peripheral societies, both in terms of their governments' shortcomings and the "structural" defects in previous development models, and also in how the international crisis has been handled.

Adjustment policies erode the legitimacy of the democratic governments in the Americas, which not only owe their external creditors, but also have incurred a "social debt" with the majority of their own people. Only in recent years, thanks to the pressure of regional and academic organizations, is this debt beginning to be considered.[28] One of the essential aspects of the social debt is health, which is a prerequisite for any sociopolitical project for democratization. To the extent that social and political players recognize and accept the legitimacy of paying this social debt, democratic systems of government might be consolidated, not only formally but substantially, so that all members of these societies can enjoy a free, decent, and egalitarian lifestyle. Subregional, regional, and international players have already begun to press for external debt repayment patterns that differ from the current one, as well as for adjustment programs oriented toward economic growth and investments in human resources.[29]

Another key conflict for the democracies in the Americas lies in the historical heritage of State intervention and the need for changes that derive not only from the new global sociopolitical context but also from the very sociopolitical dynamic that this type of State action engenders over time. The latter is manifested in the new role that the State ought to play in the process of regional development, one of the most complex and prolonged topics of political and academic debate in the Americas. The growth of the State and the historical expansion of its functions has been the result of sociopolitical initiatives that confer upon the State a central role in the regulation of socioeconomic relations. The new type of political hegemony implies a significant pressure on the State to withdraw its involvement from all areas of economic and social life.

This prevailing approach within the international context, which has been adopted by domestic players, has imposed restrictions on democratic governments regarding social and health areas, although many governments have resisted these measures because of their "political cost."[30] This has been reflected in social policies that protect only those groups most affected by the crisis, and thus serve to alleviate the inequitable consequences of an economic release, while private and public activities focus on the reactivation of economic development. Consequently, social policies become transitory, conceived outside the overall context of development projects. Their aim is to prevent the most vulnerable population sectors from reaching an irreversible extreme in terms of loss of health or political and social lack of control.

At the same time, the concept of an intervening State has been questioned by players not associated with the above ideas. These critics point to the corruption and "clientele-ism" that grew out of official intervention and that undermine the State's efficiency, and to the obstacles that technocrats and bureaucrats have placed in the path of a more equitable and democratic order.

Thus, the importance of recasting the role of the State is an issue on which there is unique consensus among social and political players. However, there are serious differences of opinion in the content of proposals; these reflect the various interests at stake and the varying diagnoses that these interests have developed in the effort to find a way out of the crisis. The difficulties of building a consensus are reflected in the back-and-forth process of institutional reform experienced by countries such as Argentina, Brazil, Colombia, Mexico, and Venezuela.[31]

Among the various proposals that have been advanced and defended by the social movements and other social and political players are formulas for political and administrative decentralization of the government.[32] Progress in several countries has allowed for legislative changes aimed at deconcentrating political power and adminis-

[27]See *El día que bajaron los cerros* and G. Carvallo and M. López Maya, "Crisis del sistema político venezolano," *Cuadernos del CENDES* (Caracas), no. 11, 1989; and M. Terris, "Witnesses to History: The Caracas Explosion and the International Monetary Fund," *J Public Health Policy*, Summer 1989.

[28]The concept of social debt was first used by Carlyle Guerra de Macedo in 1980 regarding the health needs of the population. See C. G. de Macedo, "Extensão das açoes de saúde através de serviços básicos," in *Anais da VII Conferência Nacional de Saúde* (Brasília: Ministerio da Saúde, 1980). This concept was taken up again by PREALC in 1987, from a two-dimensional perspective: a historical one, which has to do with the lack of resources and income affecting the Latin American population living in conditions of poverty, and a circumstantial one, originating in the uneven distribution of the burden resulting from adjustment policies. See PREALC, *Ajuste y deuda social* (Santiago, 1987).

[29]See UNICEF, "Declaration of Bogotá," in *Políticas de ajuste y grupos más vulnerables en América Latina* (Bogotá: Fondo de Cultura Económica, 1987); and S. Griffith-Jones, "Debt Reduction with a Human Face: The IDB and the UNICEF Initiative," *Development* (1), 1989.

[30]S. Griffith-Jones and O. Sunkel, *Debt and Development Crisis in Latin America: The End of an Illusion* (Oxford: Clarendon Press, 1986).

[31]With regard to the debate concerning the modernization and democratization of Latin American political structures, see R. Guimarães, "El Leviatán acorralado: continuidad y cambio en el papel del estado en América Latina" (ECLAC, mimeographed, 1989).

[32]See Part III, "Health Systems Infrastructure," of this volume.

trative action. Although efforts so far have mainly focused on deconcentrating services as a means of improving public efficiency and lowering costs, some partial political reforms have been introduced with a view to strengthening the constituency of local groups vis-à-vis the citizenry.

An evaluation of this progress is premature. Nevertheless, it can be pointed out that the proposals for political decentralization have encountered much resistance, since they imply new conditions and relationships among established local powers and new types of social players.

The new decentralization reforms, which seek to democratize power by recovering the functions and authority that have been concentrated in the central government in past decades, will help broaden the citizens' participation in their day-to-day problems and promote the creative projects and mechanisms that are so acutely needed in order to deal with the crisis.

THE POPULATION: CHARACTERISTICS AND TRENDS[33]

Data Sources and Information Quality

The population is both the subject and the aim of efforts to improve health conditions, as well as the basic resource for achieving that goal. Those who work in the field of health require information about the conditions, characteristics, and composition of the population at a given time, and about demographic events or changes that occur within it in a specific period. Such information comes from two basic kinds of statistics: periodic data, which include population censuses and demographic sampling surveys, and continuous statistics based on registries of vital events.

Since 1950, almost all the countries of the Americas have carried out comparable population censuses; the only exceptions in the 1980s were Bolivia, El Salvador, and Nicaragua. Despite its recognized importance and usefulness, the analysis of census results from the last decade, as compared to those carried out in Latin America in past decades, has not significantly improved in quality or coverage, perhaps because of the economic crisis and the political conflicts that affected some of the Region's countries.[34,35]

Nevertheless, population and housing censuses remain the best and at times the only source of information in the Latin American and Caribbean countries for determining the size, characteristics, and variables that lead to changes in the population. Consequently, censuses increasingly elicit information that could be used to study demographic variables affecting population dynamics, such as fertility, mortality, and international migration (see footnote 34).

Continuous statistics are obtained from civil registries, where facts about the beginning and end of a person's life and changes in civil status (births, deaths, marriages, etc.) are recorded.[36] Recording vital data is an ongoing, permanent, and compulsory process; such records constitute legal documents and are the basis of vital statistics. Combined with census or survey data, vital statistics can be used to study the population's natural increase, and are essential for preparing biodemographic and health indicators such as general and specific birth and death rates, mortality tables, and morbidity indices.

The production of vital statistics in the United States of America and Canada is basically different than in the rest of the Region's countries. In the first two countries the process is concentrated in the health services, but in the others, the information's collection—normally through civil registries—continues to be separate from its elaboration, which is carried out by statistical offices that do not always collaborate as necessary.

Table 5 shows estimates of the underregistration of deaths in Latin America, based on a comparison between recorded data and the number of deaths implicit in population estimates for 1975–1980 and 1980–1985. These evaluations were drawn up by the responsible national agencies of the countries of Latin America together with the Latin American Demography Center (CELADE), using vital statistics data and information from other independent sources.

The vast differences among the subregion's countries are evident. At one extreme are countries that have fairly reliable registries, with underregistration of death rates lower than or close to 10% (Argentina, Chile, Costa Rica, Cuba, Guatemala, Mexico, Uruguay, and Venezuela); at the other extreme are countries with underregistration rates around 40% or higher (Bolivia, the Dominican Republic, Haiti, Honduras, Nicaragua, and Paraguay).

Evaluating the reliability of birth registration is more complex. For example, for a given year, some countries include recorded births that might have occurred before

[33]This chapter is based on the following documents prepared by the Latin American Demography Center (CELADE) in 1989 for this publication: *Las Américas: fuentes, calidad de la información demográfica, tamaño, crecimiento y composición de la población, 1950-2000; La población urbana y rural y sus condiciones de vida*; and *La fecundidad: niveles, tendencias y determinantes próximos.*

[34]J. Chackiel and C. Arretx, "Recent Experiences in the Collection of Demographic Data in Latin American Population Censuses of the 1980s" (paper presented at a seminar on demographic information collection and processing in Latin America, Santiago, May 1988).

[35]East West Center, "Asian and Pacific Census Forum," *Honolulu*, 9(3), 1983.

[36]United Nations, *Principles and Recommendations for a Vital Statistics System*, U.N. Statistical Reports Series M, No. 19, Rev. 1 (New York, 1974).

TABLE 5

Estimated percentage of unregistered deaths in Latin America, 1975–1980 and 1980–1985.

Country	1975–1980	1980–1985
Argentina	1.4	...
Bolivia	66.5	72.6
Brazil	19.2	23.6
Chile	2.5	1.4
Colombia	24.9	35.5
Costa Rica	6.7	10.0
Cuba	2.7	4.8
Dominican Republic	45.2	42.2
Ecuador	19.5	23.9
El Salvador	24.3	32.0
Guatemala	4.0	6.4
Haiti	79.5	...
Honduras	53.7	48.6
Mexico	14.9	11.4
Nicaragua	59.6	...
Panama	24.5	27.3
Paraguay	38.5	47.8
Peru	35.7	...
Uruguay	2.6	3.3
Venezuela	9.8	13.3

Source: CELADE, 1989, and United Nations, 1980 and 1985.

the reference year, while others include only those births that occurred and were registered during the year in question. In addition, certain record systems with poor controls facilitate duplication of birth inscriptions.

Table 6 groups the countries as noted above, according to information available for 1975–1980. The "estimated births" column is derived from figures based on corrected vital statistics or on estimates of fertility and the number of births according to other sources of demographic data (censuses and/or surveys). In the first group of countries, the percentage of discrepancy includes both late registrations and omissions, so that it is difficult to determine the extent of each of these problems. The data recorded for the second group of countries are even less comparable with those estimated.

All this makes estimating and analyzing the number of births difficult and affects rates based on registry data, as can be seen in Annex III, which shows infant birth and death rates calculated from data provided by the countries and rates estimated by the United Nations Population Office.[37]

[37]United Nations, *World Population Prospects 1988* (New York, 1989).

Acknowledging these problems has stimulated efforts in recent decades to obtain independent estimates of fertility and mortality, mostly from censuses and surveys. These independent sources basically are used to evaluate and correct the registries rather than to replace them, except when the registries are virtually nonexistent.

Comparative surveys have been carried out in Latin American and Caribbean countries since the 1960s, in order to improve the understanding of factors influencing demographic changes. Among them have been national demographic surveys in Honduras (1970–1971 and 1983–1984), Peru (1976), Bolivia (1975 and 1980), Panama (1977), Nicaragua (1976–1978 and 1985), and Guyana (1986).

In addition, the International Statistical Institute (ISI) conducted the International Comparative Fertility Surveys Program between 1972 and 1985 in collaboration with the United Nations and the International Union for the Scientific Study of Population. Its basic objective was to provide participating countries with scientific information which would allow them to describe and interpret fertility in their own populations. In Latin America and the Caribbean, Colombia, Costa Rica, the Dominican Republic, Ecuador, Guyana, Haiti, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, and Venezuela participated.

Demographic and Health Surveys, which began in the 1980s, include new areas of information about maternal and child health and the nutritional status of children 3 to 36 months old that was previously unavailable for large-scale international comparisons. Field work has been completed in Bolivia, Brazil, Colombia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Peru, and Trinidad and Tobago.

Size, Growth, and Composition of the Population

Table 7 shows the population of the world and of the different continents in 1950, 1990, and 2000. In 1950, the population of the Americas was about 332 million; it increased to 714 million in 1989 and will reach an estimated 835 million in the year 2000. As a percentage of the world's population, the population of the Americas, at approximately 13.7%, has continued its trend toward a slight decline. The population of Latin America represents the largest percentage of the hemisphere's population: in 1950 this figure was 48%, and it is expected to be 63% in the year 2000, despite the small decrease in birth rate in some countries. The opposite is occurring in North America, whose population will fall from 41% in 1989 to 35% in the year 2000.

Among Latin American countries, in 1989 Brazil had a total population of slightly more than 147 million in-

TABLE 6

Registered and estimated births, according to characteristics of the registration, in selected countries, 1975–1980.

Registration characteristics and country	Births (thousands)		% discrepancy
	Registered	Estimated	
Births registered in a year without consideration of the year of occurrence			
Brazil	2,485	3,671	32.4
Cuba	163	162	0.0
Dominican Republic	177	187	5.3
Honduras	146	148	1.3
Jamaica	59	59	0.0
Mexico	2,343	2,279	-2.8
Nicaragua	110	118	6.5
Peru	557	617	9.7
Uruguay	57	58	1.2
Venezuela	471	476	1.1
Births registered in the year they occurred			
Argentina	666	677	1.6
Bolivia	140	235	40.4
Canada	361	379	4.7
Chile	225	255	11.8
Costa Rica	63	67	6.0
Ecuador	227	290	21.7
El Salvador	171	178	4.0
Panama	53	56	4.8
Trinidad and Tobago	28	28	0.0
United States of America	3,340	3,621	8.0

Source: CELADE, 1990, and United Nations, 1989.

TABLE 7

World population (in thousands), by continents and by subregions in the Americas, 1950, 1990, and 2000.

Continents and subregions	1950		1990		2000	
	Population	%	Population	%	Population	%
World	2,504,924	100.0	5,293,274	100.0	6,251,933	100.0
Africa	222,482	8.9	647,518	12.2	872,234	14.0
Asia	1,546,113	61.7	3,396,467	64.2	4,005,586	64.1
Europe	391,955	15.6	497,741	9.4	508,569	8.1
Oceania	12,647	0.5	26,476	0.5	30,139	0.5
America	331,727	13.2	725,072	13.7	835,405	13.4
America	331,727	100.0	725,072	100.0	835,405	100.0
Latin America	159,350	48.0	437,951	60.4	527,784	63.2
Caribbean	6,302	1.9	11,361	1.6	12,919	1.5
North America	166,075	50.1	275,760	38.0	294,702	35.3

Source: CELADE, 1990, and United Nations, 1989.

habitants, followed by Mexico with almost 87 million, Argentina and Colombia with 32 million each, Peru with 22 million, and Venezuela with slightly more than 19 million. Overall, almost 80% of the total of 429 million inhabitants of Latin America are concentrated in six of its 20 countries (see Annex II).

Components of Population Growth and Demographic Transition

The size, and consequently the growth and composition by sex and age, of each country's population changes only as a result of three demographic factors or components: birth rate, mortality, and international migration.

The acceleration in population growth that occurred from 1900 to 1960 gave rise to the demographic transition theory, which springs from the real historical experience of the countries of the Western Hemisphere and is characteristic of the modern world. Originally developed as an attempt to explain the process of decline in mortality and fertility in developed countries, the theory of demographic transition recently was interpreted more broadly, since it was thought that it could also apply to developing countries. However, observation of this process in the Region does not ensure that the experience of the developed world necessarily will be duplicated here, since socioeconomic and cultural characteristics and technological development processes are historically different. In addition, the relationships between population growth and economic and social development are complex, and it cannot be assumed that less growth is synonymous with development, although in general there appears to be an inverse relationship between the two processes.

Demographic transition is understood to mean a succession of stages characterized by changes in the birth rates, mortality rates, and natural increase that accompany a country's modernization process. In the first stage, birth and death rates are quite high, resulting in very low growth; in the second stage, mortality begins to decline and the birth rate remains unchanged, and growth rates increase; in the third stage, birth rates drop more rapidly, producing a decrease in the growth rate; and in the last stage, there is very low growth, sometimes no growth, or decline.

The present situation in the countries, grouped according to their transition stage, is described below. Group 1 consists of Bolivia and Haiti, countries that combine high birth and death rates. They are in a very early stage of demographic transition, with mortality beginning to decline and fertility remaining virtually unchanged. These countries account for approximately 2% of the population of the Americas, about 13.5 million people, and it is expected that they will increase by approximately 3.7 million inhabitants during the coming decade.

Group 2 includes El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, and Peru, which combine high birth rates with moderate death rates, resulting in a relatively high growth rate that is higher than 3% annually in some countries. Paraguay and Peru have special characteristics, the former having a relatively low mortality and the latter having a moderate growth rate. This group of countries has close to 50 million inhabitants, or approximately 7% of the Region's population. Projections for 1995–2000 suggest a moderate decline in natural growth rates, as a result of probable decreases in birth and death rates. In the coming decade it is estimated that their population will increase by 14.5 million people.

In group 3 are Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Guyana, Jamaica, Mexico, Panama, Suriname, Trinidad and Tobago, Venezuela, and the Windward Islands, as well as some Caribbean territories. The group is heterogeneous, though in general it is characterized by moderate birth and growth rates and very low crude mortality rates (less than 7 per 1,000 population). This group's low death rate is linked to advances in health and their impact on survival, but it is potentiated by the population's special age distribution as a result of the strong decrease in fertility. Compared to countries in other stages of transition, those in this group have more population concentrated in mid-range age groups with low mortality and in which also are found women of childbearing age. Thus, the number of deaths is less in relative terms and the number of births is relatively high, which accounts for their moderate growth.

Close to half the population of the Americas and three-quarters of Latin America's population are in this situation—approximately 330 million inhabitants. In the next ten years these countries will add 66.6 million inhabitants, even though their average annual growth will have decreased moderately, from 2.2% to 1.8%. It should be noted that Chile, Jamaica, Suriname, Trinidad and Tobago, and some of the Caribbean territories already have natural growth rates that range from 1.7% to 2.0%.

Group 4 consists of those Latin American and Caribbean countries that are farthest along in the transition process (Argentina, Barbados, Cuba, Guadeloupe, Martinique, Puerto Rico, and Uruguay) and the Region's two most developed countries, Canada and the United States of America. This group of countries combines low birth rates with moderate mortality rates, but they have reached this stage in very different ways. Argentina and Uruguay, for example, already had low fertility and mortality in 1950–1955, while Cuba and the countries of the Caribbean have made marked advances in recent decades.

On average, these countries have higher crude death rates than those in group 3, and are even similar to those in group 2; this is due to the age structure of their populations, which have a higher percentage of elderly whose specific mortality is greater. The group includes 330 million people, representing 45% of the Region's total population. The United States of America and Canada account for 85% of the group's total. Average annual growth will be around 1%, and the group will increase by 5 million persons during the coming decade.

Age Structure of the Population

Crude birth and death rates enable the population's natural or vegetative growth rate to be calculated, but they are not the best measures for making comparisons of mortality and fertility levels between populations with different age structures. Age structure varies greatly from one country to another and within a single country over time, depending on the behavior of the demographic factors that affect it. In addition, mortality and fertility behave differently in different population age groups.

The historical evolution of birth and death rates also implies changes in the age structures of the population over time. For a given stage of birth and death rates, a different age distribution will be found which derives chiefly from the evolution of fertility in each country. Although mortality also is important, its influence on the changes in the population's age structure is much less, and the same may be said of international migration.

Major changes are beginning to be seen in the age structure of the population in most of the Region's countries regarding the aging of the population, a process that is believed will continue in coming years. This aging process is characterized by an increase in the percentage of elderly persons and a decrease in the percentage of children, with a consequent effect on certain strategic sectors of the social structure, such as the educational system, employment, social security, and health care.

Table 8 shows the relative distribution of the population in five major age groups (under 5 years old, 5 to 14 years old, 15 to 39 years old, 40 to 64 years old, and 65 years old and older) for Latin American countries selected according to their demographic transition stage.

As a country advances along the transition process, the percentage of children and young people tends to decrease and that of the elderly increases. It is estimated that by 1990, the populations of countries at early stages in the transition will consist of approximately 15% children younger than 5 years old and slightly more than 3% persons 65 years old or older, while the more advanced countries will have populations of close to 7% children under 5 years old and 13% elderly persons.

This aging trend also is evident over time, although its pace is very slow. According to projections, there will be very few variations in the population's age structure by the year 2000, and the effects of the present transition process will not be seen for many years. Brazil, for example, may double its percentage of elderly by the year 2025, but even then it will have a lower percentage of elderly than the countries in group 4 have now. Although the population's relative age distribution changes little in the short and medium term, the effect of the demographic changes is much more obvious on the absolute population contingents and on the growth rate of the various age groups. Table 9 shows the absolute values and growth rates for the major age groups in countries selected according to their transition stage.

The most notable changes are in those countries in the second and third stages of the transition. During the next decade, for example, the age group under 5 years old in Brazil will increase by nearly one-half million, whereas the age group 65 years old and older will increase by more than 2.5 million persons in the same period. This means that the first age group will grow by 2.4%, with an average annual rate of 0.2%, while those older than 65 years old will increase by 39%, with an annual rate of 3.2%. Consequently, most of the Region's countries will face new demands with respect to the elderly without any reduction in the pressure from a contingent of new children. The health sector will have to reconcile the health care demands of two quite different age groups with distinct care needs.

Another significant aspect of the evolution of the population's mid-range age groups affects women of childbearing age, or women between 15 and 49 years old. Table 10 shows the female population of reproductive age, its increase in absolute numbers, and its average annual growth rate for selected countries. In most countries, this population will grow at rates higher than 2% annually, due to the fact that those women born 15 years earlier, when fertility had not declined as it has in the past decade, will join this group. As a result, the relative weight of this age group in the overall female population, barring a few exceptions, will increase in the year 2000, reaching percentages close to 50% in most countries; percentages will be even higher in group 3 countries, where fertility has changed more drastically in recent years.

Fertility: Levels and Trends

In line with what we have described regarding the demographic transition, fertility has significantly declined in all subregions of the Americas between the periods 1950–1955 and 1985–1990, and it is expected to decline

TABLE 8

Population structure by broad age groups (%), for selected countries at different stages of the demographic transition, 1950, 1990, and 2000.

Country and year	0–4	5–14	15–39	40–64	65 and over
Bolivia					
1950	17	25	38	17	3
1990	17	27	38	15	3
2000	17	27	38	15	3
Guatemala					
1950	18	26	39	15	3
1990	18	28	37	14	3
2000	16	27	40	14	4
Brazil					
1950	17	25	40	16	3
1990	13	23	42	18	5
2000	11	21	42	21	5
Chile					
1950	14	23	38	21	4
1990	11	19	43	20	6
2000	10	20	40	24	7
Uruguay					
1950	10	22	40	24	8
1990	8	14	36	27	12
2000	8	16	37	26	13

Source: CELADE, 1990, and United Nations, 1989.

further in the coming decade at a pace that will vary from country to country. This decline will result in significant changes in the age structure of the countries' populations.

In Latin America the total fertility rate[38] averaged 6 children per woman between 1950–1955 and 1960–1965, decreased to 3.6 at present, and is estimated to reach 3.1 by the year 2000 (Table 11). In the Caribbean, fertility also was relatively high at the start of the period, with total rates of more than 5 children per woman, and then began to drop during 1965–1970; the current rate is 2.9 children per woman. It is estimated that in 1995–2000, this subregion will have levels lower than those in Latin America. In contrast to Latin America and the Caribbean, North America already had a relatively low fertility (around 3.5 children per woman) in 1950–1955, which then declined steadily until it reached a level of 1.8 children per woman in 1985–1990; this level is expected to hold during the coming years.

Fertility has been classified into four levels, according to the total fertility rate values: low fertility, up to 3 children per woman; medium low, from 3.1 to 4.4; medium high, from 4.5 to 5.4; and high, 5.5 or more children. An analysis of the evolution of fertility from 1950 to 1990 shows that of all the countries with high fertility in 1950–1955, only four have retained this characteristic (Bolivia, Guatemala, Honduras, and Nicaragua); four others (El Salvador, Haiti, Paraguay, and Peru) have become medium-high fertility countries, and the remaining eight countries in the group (Brazil, Colombia, Costa Rica, the Dominican Republic, Ecuador, Mexico, Panama, and Venezuela) have medium-low fertility. The other countries with low fertility were more heterogeneous in the past: among the countries which had high or medium-high fertility are Chile and the Caribbean countries; among those which had low or medium-low fertility are Argentina, Canada, Cuba, the United States, and Uruguay. This grouping is similar to that resulting from the classification of the countries according to their demographic transition stage, since fertility is the component that most affects the population's growth and age structure.

Fertility in High-risk Age Groups

A decline in fertility is apparently associated with a rejuvenation of the age structure, which significantly

[38]The total fertility rate represents the average number of children born to each woman in a hypothetical cohort of women who meet the following two conditions: during their childbearing years they bear children according to age-specific fertility rates in the population studied, and they are not exposed to mortality risks from birth until the end of their childbearing years. In Z. Camisa, *Introducción al estudio de la fecundidad* (Santiago: CELADE, Series B, No. 1007, 1982).

TABLE 9

Absolute population growth and average annual population growth by broad age groups for selected countries at different stages of the demographic transition, 1980–2000.

Country and age groups	Population (thousands)			Absolute increase (thousands)		Growth rate[a] (per 1,000)	
	1980	1990	2000	1980–1990	1990–2000	1980–1990	1990–2000
Bolivia							
0–4	966	1,264	1,633	298	370	26.9	25.7
5–14	1,454	1,948	2,601	493	653	29.2	28.9
15–39	2,094	2,753	3,715	659	963	27.3	30.0
40–64	873	1,116	1,462	242	346	24.5	27.0
65 and over	182	234	313	52	79	25.0	29.1
Guatemala							
0–4	1,271	1,608	1,961	337	353	23.5	19.9
5–14	1,903	2,571	3,286	668	716	30.1	24.6
15–39	2,547	3,447	4,781	900	1,334	30.3	32.7
40–64	999	1,279	1,738	280	459	24.7	30.6
65 and over	197	292	455	95	163	39.3	44.3
Brazil							
0–4	16,717	18,963	19,419	2,246	456	12.6	2.4
5–14	29,030	34,014	37,569	4,984	3,554	15.8	9.9
15–39	50,173	63,357	74,913	13,184	11,556	23.3	16.8
40–64	20,461	27,035	37,868	6,574	10,833	27.9	33.7
65 and over	4,904	6,998	9,717	2,094	2,719	35.6	32.8
Chile							
0–4	1,210	1,476	1,516	266	40	19.8	2.7
5–14	2,512	2,558	2,972	46	415	1.8	15.0
15–39	4,720	5,663	6,137	943	474	18.2	8.0
40–64	2,080	2,684	3,619	605	935	25.5	29.9
65 and over	624	793	1,027	169	234	24.0	25.9
Uruguay							
0–4	277	259	266	−18	6	−6.7	2.4
5–14	508	538	516	31	−23	5.9	−4.3
15–39	1,028	1,119	1,221	91	102	8.5	8.8
40–64	795	819	857	24	38	3.0	4.6
65 and over	306	359	415	53	56	15.9	14.5

[a]Annual geometric growth rate.
Source: CELADE, 1990.

TABLE 10

Absolute growth and average annual growth of the female population 15 to 49 years old, for selected countries at different stages of the demographic transition, 1980–2000.

Country	Female population (in thousands)			15–49 years (%)[a]			Absolute increase (in thousands)		Growth rate[b] (per 1,000)	
	1980	1990	2000	1980	1990	2000	1980–1990	1990–2000	1980–1990	1990–2000
Bolivia	1,295	1,700	2,283	46	46	46	405	583	27	29
Guatemala	1,517	2,029	2,836	44	45	47	512	807	29	34
Brazil	30,239	38,672	47,771	50	51	53	8,434	9,099	25	21
Chile	2,880	3,515	4,008	51	53	52	635	493	20	13
Uruguay	694	739	808	47	47	48	45	69	6	9

[a]Percentage of females 15 to 49 years of age of the total female population.
[b]Annual geometric growth rate.
Source: CELADE, 1990, and United Nations, 1989.

TABLE 11

Total fertility rate, by country.

Country	1950–1955	1980–1985	1985–1990	1990–1995	1995–2000
Latin America	5.9	4.0	3.6	3.3	3.1
Argentina	3.2	3.2	3.0	2.8	2.7
Bolivia	6.8	6.3	6.1	5.8	5.5
Brazil	6.2	3.8	3.5	3.2	2.9
Chile	5.1	2.8	2.7	2.7	2.6
Colombia	6.8	3.5	3.1	2.9	2.8
Costa Rica	6.7	3.5	3.3	3.0	2.8
Cuba	4.1	1.9	1.8	1.9	2.0
Dominican Republic	7.4	4.2	3.8	3.3	3.0
Ecuador	6.9	4.8	4.3	3.9	3.5
El Salvador	6.5	5.2	4.9	4.5	4.2
Guatemala	7.1	6.1	5.8	5.4	4.9
Haiti	6.2	5.1	4.7	4.4	4.1
Honduras	7.1	6.2	5.6	4.9	4.3
Mexico	6.8	4.2	3.6	3.1	2.8
Nicaragua	7.3	5.9	5.5	5.0	4.5
Panama	5.7	3.5	3.1	2.9	2.7
Paraguay	6.8	4.8	4.6	4.3	4.1
Peru	6.9	5.0	4.5	4.0	3.5
Uruguay	2.7	2.6	2.4	2.3	2.3
Venezuela	6.5	4.1	3.8	3.5	3.2
Caribbean[a]	5.2	3.1	2.9	2.8	2.6
Barbados	4.7	1.9	2.0	2.0	2.1
Guadeloupe	5.6	2.6	2.2	2.1	2.1
Jamaica	4.2	3.4	2.9	2.5	2.2
Martinique	5.7	2.1	2.1	2.1	2.1
Puerto Rico	5.0	2.6	2.4	2.3	2.2
Trinidad and Tobago	5.3	2.9	2.7	2.5	2.3
North America[b]	3.5	1.8	1.8	1.8	1.9
Canada	3.7	1.7	1.7	1.7	1.7
United States of America	3.5	1.8	1.8	1.9	1.9

[a]Includes Anguilla, Antigua and Barbuda, Bahamas, Cayman Islands, Dominica, Grenada, Montserrat, Netherlands Antilles, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Turks and Caicos Islands, Virgin Islands (UK), and Virgin Islands (USA).

[b]Includes Bermuda, Greenland, and San Pedro and Miguelón.

Source: CELADE, 1990, and United Nations, 1989.

affects the health of women and children. This rejuvenation implies that fertility shifts from extreme age groups to mid-range ones that carry fewer possible health risks. Table 12 shows total births and the proportion of births by age groups of the mothers, and groups the Latin American countries according to their present level of fertility. To this end, three age groups were established: women between 15 and 19 years old, or adolescent fertility; women between 20 and 34 years old, who constitute the mid-range years of fertility; and women 35 years old and older, considered the advanced fertility age group. The first and last groups are at high risk of morbidity and mortality for both mother and child.

As is to be expected, in all cases the greatest contribution to total fertility comes from women in mid-range age groups, who in 1950–1955 accounted for between 66% and 76% of the births and in 1985–1990 for between 69% and 78%, which shows the greater concentration in these age groups as fertility diminishes. Exceptions are Argentina, Cuba, El Salvador, and Uruguay, countries in which there has been a decrease in the proportion of births to women of these age groups.

Despite this large concentration of fertility in the mid-range age groups, women who are considered at high risk—those under 20 years old and those older than 34 years—still account for a relatively high proportion of births. The percentage of births to these women varied between approximately 25% and 35% in 1950–1955. Today this figure is lower, but in most of the countries it is still around 25% to 30%.

TABLE 12

Total births and births by age groups among women in selected countries, by recent fertility level, 1950–1955, 1985–1990, and 1995–2000.

Recent fertility level and country	Total annual births (in thousands)			Proportions of births by age groups of women[a]					
				Central ages 20–34 years		15–19 years		35 years and older	
	1950–1955	1985–1990	1995–2000	1950–1955	1985–1990	1950–1955	1985–1990	1950–1955	1985–1990
Low fertility									
Argentina	458	669	698	75.2	73.7	10.7	13.7	14.1	12.6
Chile	239	301	309	70.5	76.6	10.5	13.6	19.0	9.8
Cuba	182	181	181	76.2	70.0	10.4	26.0	13.4	4.0
Uruguay	49	54	54	75.1	74.7	12.2	13.4	12.7	11.9
Medium low fertility									
Brazil	2,589	4,086	4,121	71.7	77.9	9.3	9.1	19.0	13.0
Colombia	607	861	906	69.1	73.6	13.0	15.3	17.9	11.1
Costa Rica	45	80	82	72.9	74.2	12.4	16.3	14.7	9.5
Dominican Republic	129	213	208	69.0	76.7	16.3	13.6	14.7	9.7
Ecuador	166	328	360	67.2	70.8	14.5	14.6	18.3	14.6
Mexico	1,407	2,438	2,490	70.8	71.9	12.5	16.2	16.7	11.9
Panama	36	61	63	70.0	73.1	16.7	18.0	13.3	8.9
Venezuela	262	569	611	70.3	73.9	15.6	14.4	14.1	11.7
Medium high fertility									
El Salvador	100	182	221	72.2	69.2	15.0	20.3	12.8	10.5
Haiti	141	213	235	66.0	71.2	8.8	8.0	25.5	20.8
Paraguay	69	139	161	71.3	72.2	10.1	11.5	18.6	16.3
Peru	384	721	743	67.2	74.3	13.8	11.5	19.0	14.2
High fertility									
Bolivia	138	293	359	68.8	71.5	10.9	10.6	20.3	17.9
Guatemala	164	350	415	67.8	70.0	17.7	17.1	14.5	12.9
Honduras	78	189	217	67.9	70.2	15.4	16.4	16.7	13.4
Nicaragua	64	149	174	70.0	73.0	15.6	16.8	14.4	10.2

[a]The proportion of births refers to the quotient of the births in the ages studied divided by the total births in each country.
Source: CELADE, 1988, and updated projections.

Despite the decline in fertility and because of the population's age structure, in Latin America the number of births is estimated to have increased from 7.3 million in 1950–1955 to 12.1 million in 1985–1990, which translates into a considerable increase in absolute numbers in most of the countries. An exception is Cuba, the only country in which the decline in fertility has led to stabilization, and perhaps even a decrease, in the number of births. The increase has also been slight in Chile and Uruguay. In the remaining countries the increase fluctuates between 50% and 100%.

The conditions in Latin America over the next ten years will be different, since in almost half of the countries the absolute number of births will remain more or less constant or will diminish. In the remaining countries, births will continue to increase, but this increase will probably remain between 10% and 20%. It is thought that the total number of births will climb from 12.1 million in 1985–1990 to 12.6 million in 1995–2000.

International Migration

Of the three components that influence the size and structure of the population, international migration is the most difficult to predict, since it hinges on socioeconomic and political factors. It is also more difficult to measure, because there are no records showing the population's movement across national boundaries. The main source of information comes from population censuses.

An analysis[39] of censuses conducted in the 1970s and 1980s shows an overall increase in mobility in the Region, as well as increases in the numbers of immigrants from Latin America and the Caribbean to the United States and Canada. According to censuses conducted in

[39]A. Pellegrino, *Migración internacional de latinoamericanos en las Américas* (document prepared under the sponsorship of Universidad Católica Andrés Bello in Caracas, CELADE, and the Canadian International Development Agency, 1989).

the 1980s, the Latin American countries which, despite a drop in European immigration, recorded increases in the number of persons born abroad are Costa Rica, Ecuador, Mexico, Paraguay, and Venezuela. Argentina and Brazil, which traditionally were immigration countries, have experienced decreases in European immigration and have become emigration countries. Other countries such as Chile and, especially, Uruguay have had very high emigration rates, although like Paraguay and Argentina, they show a tendency for people to return from abroad as they progress toward democracy.

These border-crossing population movements have different consequences for exit countries than for arrival countries, depending on whether they are migrations of professionals and technicians or of workers, or whether they result from wars or political situations. Population movements across borders pose two kinds of problems for the health sector: providing health care to a population that generally works illegally and under precarious and inequitable social conditions, and overcoming the difficulty of controlling disease transmission across borders. Furthermore, there is every reason to believe that this sort of population movement will continue to increase in coming years, as the countries try to establish border areas with greater economic integration.

One of the greatest problems for the health sector in recent years has been the migration of refugees to other countries for political reasons or because of violence.[40] Data from several sources indicate that "between 7% and 10% of Central Americans have been forced to emigrate, mostly as undocumented persons abroad or as displaced persons to another part of their country, and, to a lesser extent, as recognized refugees or repatriates."[41] This translates into an overall figure of about two million people who have abruptly left their countries and immediately require help to satisfy every social need (Table 13). The problem is aggravated by the fact that only a minority of them benefits from institutions such as the Office of the United Nations High Commissioner for Refugees (UNHCR).

Urbanization

A country's level of urbanization depends on the population's overall growth rate and the migration of rural inhabitants to urban areas. These factors are coupled with the fact that some localities originally considered as rural have been reclassified as urban, as well as with the expansion of urban centers themselves. These factors, in turn, are influenced by economic, social, and political determinants and by how these have been shaped within a given country's development model.

In the Region of the Americas, and especially in the Latin American countries, the potential advantages offered by urban centers in terms of greater access to "modern" goods and services are often offset by the speed of urbanization. The rapid urban growth rates often have contributed to the deterioration of the environment and erosion of the quality of life, as neither the urban infrastructure nor services have been able to deal with the increase in demand. The housing shortage has led to urban overcrowding for large sectors of the population, and their segregation has resulted in what has been called urban marginality. Certain pre-existing economic and social problems in the Region have worsened and become more evident.[42] In addition, metropolitan growth often has contributed to environmental detriment through pollution.

Degree of Urbanization and Urban Population Growth

It is estimated that in 1990, 72% of the population of the Americas lives in urban localities, and that by the year 2000, the figure will be 75% (Table 14). Although the degree of urbanization in North America now exceeds that of Latin America, both subregions will have similar proportions of urban population by the year 2000. The Caribbean also ceased being predominantly rural, although the extent of its urbanization is less: from a 60% urban population in 1990 it is expected to have a 66% urban population in the year 2000.

Although the Region is predominantly urban, different countries show very different urbanization patterns. In 1950 only six countries—Argentina, Belize, Canada, Chile, the United States, and Uruguay—had populations with more than 50% urban dwellers. In 1990, 12 countries have urban populations of more than 70%, with Brazil, Colombia, Cuba, Martinique, Mexico, Puerto Rico, and Venezuela having been added to the list. Except for Belize, all these countries have experienced very rapid urban population growth, chiefly between 1950 and 1980. Of the remaining countries, ten have urban populations between 50% and 69%, and nine have urban

[40]H. Behm, "Implications of Demographic Dynamics for the Health Strategies in Underdeveloped Countries" (paper presented at the symposium "Achieving Health for All," University of Washington, Seattle, September 1989).

[41]International Conference on Central American Refugees, "Los desplazados, refugiados y repatriados en el marco del desarrollo económico y social de Centroamérica," Guatemala City, May 1989.

[42]Jordan, 1975, in R. Urzúa, *Distribución espacial de la población en la América Latina. Determinantes y consecuencias* (Santiago: CELADE, Population Notes No. 22, 1980).

TABLE 13

Migration movements in countries of the Central American Isthmus and Mexico (in thousands), 1980–1989.

Arrival country	International migrations			Internally displaced	Repatriated	Total
	Economic reasons	Refugees				
		Recognized	Not recognized			
Total	217	133	691	965	51	2,057
Belize	7	4	18	...	...	29
Costa Rica	170	40	80	...	...	290
El Salvador	...	[a]	4	400	13	417
Guatemala	40	3	180	188	4	415
Honduras	...	37	200	22	...	259
Mexico	...	42	200	...	...	242
Nicaragua	...	7	9	355	34	405

[a]Fewer than 500 persons.
Source: Consultant document presented for discussion at the International Conference on Central American Refugees, Guatemala, 1989.

TABLE 14

Urban and rural population by subregion, 1985, 1990, and 2000.[a]

Subregion	Population					
	Number (in millions)			%		
	1985	1990	2000	1985	1990	2000
Urban						
Region	471.0	521.7	626.1	70	72	75
Latin America	268.9	310.0	396.4	68	71	75
Caribbean	6.0	6.8	8.5	57	60	66
North America	196.1	204.9	221.2	74	74	75
Rural						
Region	198.7	203.5	209.4	30	28	25
Latin America	125.5	128.0	131.3	32	29	25
Caribbean	4.6	4.6	4.5	43	40	34
North America	68.6	70.9	73.6	26	26	25

[a]According to each country's definition of urban and rural.
Source: For Latin American countries: CELADE, 1984 and 1989; for Chile: INE-CELADE, 1989; for Argentina and Uruguay: new CELADE calculations. For North American and Caribbean countries: United Nations, 1989.

populations under 50%. It is thought that only four countries (Guatemala, Guyana, Haiti, and Paraguay) will be predominantly rural in the year 2000.

Between 1930 and 1950, more than half of the growth in the urban population was due to migration from rural to urban areas.[43] Since 1950, however, the proportional contributions of natural increase and net migration seem to have changed. During the period of greatest rural to urban migration in Latin America, migration appears to have contributed 38% of the growth of the urban population and 14% was contributed by the reclassification of rural localities.[44] Thus, even at a time of greater migration, 48% of the increase was attributed to natural growth. Generally speaking, there is a close correlation between a given country's percentage of urban population and its growth rate in the following decade.

[43]D. Bogue and P. Hauser, *Population Distribution, Urbanism and Internal Migration,* United Nations World Conference on Population, Working Paper No. 473 (Belgrade, 1965).

[44]F. Gatica, "La urbanización en América Latina: 1950–1970. Patrones y areas críticas," in *Redistribución espacial de la población en América Latina*, eds. J. Alberts and M. Villa (Santiago: CELADE, 1980).

Settlement Patterns of the Urban Population

Between 1950 and 1980 the settlement pattern of the urban population was characterized by a proliferation of urban centers of every size, especially in Latin America. In this subregion, small communities (20,000 to 99,000 inhabitants) tripled, from 267 to 841; medium-sized cities (100,000 to 999,000 inhabitants) quadrupled, from 55 to 216; and large cities (1 to 2 million inhabitants) increased from 4 to 18 in 1985. In the Caribbean, small communities increased from 15 to 22, medium-sized cities from 4 to 10, and one city, San Juan, Puerto Rico, had more than a million inhabitants in 1980.

Metropolises—generally taken as cities with more than two million inhabitants—increased from 4 in 1950 to 14 in 1985 in Latin America, and may number 22 in the year 2000. It is believed that there were 21 metropolises in North America in 1985.

In 1950, Buenos Aires was the only city with more than four million inhabitants in Latin America and the Caribbean; by 1980, Mexico City, Rio de Janeiro, São Paulo, and Lima had joined that rank; and by 1985, Bogotá and Santiago were included in the category. Belo Horizonte, Brazil, will probably be included by the year 2000. In North America, New York and Chicago had more than four million people in 1950, as did Los Angeles, Philadelphia, San Francisco, Detroit, and Boston by 1985.

Another characteristic of Latin America and the Caribbean is that the countries vary in both territorial extent and population, and thus the sizes of their urban areas also vary. Even so, between 1950 and 1980, the relative importance of rural villages and small cities in the structure of the urban settlement pattern of the population decreased. At the same time, the percentage of population living in medium-sized cities increased, and there was a higher concentration of population living in the larger cities, which meant that in most of the countries the population was highly concentrated in a single city that functioned as the core in the urban network.

Table 15, in which the sizes of urban centers are presented in relation to three country sizes,[45] shows that in all countries, regardless of their size, quasi-rural settlements (2,000 to 19,000 inhabitants) have lost importance over time, and that in 1980, an average of no more than 21% of the urban population lived in such villages or towns. The only exceptions are Cuba, Jamaica, and Uruguay. "Small" cities also have lost importance, especially in the large and intermediate countries, except in Argentina, Bolivia, Paraguay, and Peru. This situation has been reversed in Chile since 1980, while in Honduras, where they were relatively important until that year, they have begun to lose their importance.

The relative weight of "intermediate" cities has increased in many countries, except in Bolivia, Colombia, Ecuador, and Trinidad and Tobago, where it has diminished. "Large" cities have increased in population in large and intermediate countries, except in Argentina, Cuba, Chile, Peru, and Venezuela, where they have declined during the last decade, especially those cities of more than one million inhabitants. In the group of small countries, the importance of cities of between 100,000 and 499,000 inhabitants has significantly decreased, and that of cities of more than 500,000 inhabitants has increased. The relative importance of large cities has increased in most small countries.

The primacy index[46] of the largest city over those that follow it in size is high in most Latin American and Caribbean countries, but recently it seems to be diminishing, and in several countries the principal city has experienced less growth than the urban population as a whole. This decline in the growth rate of certain large cities may be felt more in the long term, however, since such cities continue to gain considerable population in absolute terms, with the consequent pressure on urban infrastructure and social services.

Rural Population, Its Growth and Dispersion

As a result of marked differences in the dynamics of the urban and rural populations, the overall population of the Region ceased being predominantly rural at the beginning of the 1950s; this change occurred in Latin America in the 1960s, and in the Caribbean in the 1970s. It is estimated that in 1990, 28% of the Region's population lives in rural areas, and that this figure will be 25% by the year 2000 (see Table 14). It is also thought that the low growth rate of the Region's rural population will continue to decline, decreasing from an annual average of 0.8% in the 1950s to 0.5% in 1985–1990.

Although rural to urban and urban to urban migrations are the most important, migration between rural areas has increased in Latin American countries. In Peru, according to the national demographic survey of 1975, rural to rural migration was almost 50% greater than the rural to urban migration. A 1983 survey in Honduras

[45] A CELADE study (1986) defined Argentina, Brazil, Colombia, and Mexico as large countries; Chile, Cuba, Ecuador, Peru, and Venezuela as intermediate countries; and Bolivia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, and Uruguay as small countries. In this publication, Guyana, Jamaica, Puerto Rico, and Trinidad and Tobago have been included in the last group.

[46] The primacy index is the ratio between the population of the largest city and the sum of the populations of the next three cities in size.

TABLE 15

Percentage distribution of the urban population, by country category and by size of locality of 2,000 and more inhabitants, 1950–1980.

Country category[a] and year	Type of locality[b] (Size of locality in thousands of inhabitants)				
	Villages	Small cities	Intermediate cities	Large cities	
Large countries	(2–19)	(20–99)	(100–999)	(1,000 or more)	
1950	31	17	26	26	
1980	20	14	24	41	
Intermediate countries	(2–19)	(20–99)	(100–499)	(500–999)	(1,000 or more)
1950	29	20	19	7	26
1980	16	18	19	12	35
Small countries	(2–19)	(20–49)	(50–99)	(100–499)	(500 or more)
1950	33	7	8	48	5
1980	21	10	7	21	41

[a]Large countries: Argentina, Brazil, Colombia, and Mexico. Intermediate countries: Chile, Cuba, Ecuador, Peru, and Venezuela. Small countries: Bolivia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Puerto Rico, Trinidad and Tobago, and Uruguay.
[b]The average percentages have been calculated as a simple mean; therefore, they do not necessarily total 100.
Source: CELADE, 1986, and CELADE calculations based on population censuses and national statistics.

found that rural to rural migration represented 24% of all population movement, and was as important as rural to urban migration. Another study confirms this situation in Bolivia, where it was found that 40% of migration was of this type.

Temporary migration has been gaining significance and is linked to transient work opportunities in rural areas. Investigations of migration in various countries (Bolivia, Colombia, Guatemala, and Mexico, among others) note the importance that circular movements have acquired. There are also seasonal movements across national borders, such as that of Bolivians and Paraguayans to Argentina, of Colombians to Venezuela, and of Haitians to the Dominican Republic to work in sugarcane harvests. Colonization of agricultural frontiers is another kind of rural to rural migration, and some countries (Bolivia, Brazil, Colombia, Ecuador, Mexico, Panama, Paraguay, and Peru) have started colonization activities by creating an institutional basis for them.

The counterpart of high urban concentration in Latin America and the Caribbean is the high dispersion of the rural population. Nevertheless, only a few efforts have been made to examine this phenomenon because it is less visible and more difficult to quantify.

It must be noted that it is in those countries with a predominantly rural population where the population has the worst health conditions and where the health systems coverage is most deficient (see footnote 8).

MORTALITY: PROGRESS, PROBLEMS, AND PROSPECTS[47]

Data Sources and Estimation Methods

As noted in the section on population, death registration—the standard source of information about mortality—suffers from major and frequent defects in many countries. Mortality is often underestimated, particularly in rural populations, which makes it difficult to interpret indicators based on such registration. Those countries where health conditions are worst have the scantiest and most defective information. This problem has been addressed by using alternative sources of information and different estimation methods.[48,49,50]

The present analysis relied mostly on mortality tables used to make population estimates and projections,[51]

[47]This section is based on the document *La mortalidad en las Américas: progresos, problemas, perspectivas,* prepared by CELADE in 1989 for this publication, and on an analysis of data available in PAHO's Technical Information System.
[48]United Nations, *Population Bulletin of the United Nations,* No. 14 (ST/ESA/SER.N/14) (New York, 1983).
[49]United Nations, *Manual X. Indirect Techniques for Demographic Estimation,* Population Studies No. 81 (ST/ESA/SER.A/81) (New York, 1983).
[50]CELADE, *La mortalidad infantil en Bolivia,* Series OI, No. 38 (Santiago, 1985).
[51]CELADE, "América Latina: tablas de mortalidad," *Boletín Demográfico* (Santiago), No. 44, 1989.

which are based on the best available mortality information corrected according to preestablished methods and criteria. In general, estimates were made using data available up to approximately 1980–1985. Rates after that period have been projected according to previously observed trends and the experience of countries in a similar situation, among other criteria. They represent only the best assumptions regarding the future course of mortality and should be taken as such. Life expectancy and mortality rates by age are five-year averages that smooth out and correct original values; consequently, they do not show the annual variations these indicators have in each country, but they facilitate a regional analysis. Given a lack of a good system for recording births and deaths (which is the prevailing situation in many Latin American countries), the figures used in this analysis can only be considered as the best possible approximation of a reality that is not fully understood.

An analysis of infant mortality runs into the additional obstacle of an underregistration of births, which is generally lower than the underregistration of deaths. As has been noted, the underestimation of infant mortality rates is considerable in several countries; consequently, this analysis uses estimates derived from censuses and demographic surveys obtained by indirect methods, in addition to rates based on registries (when acceptable) and rates used in population estimates and projections. These indirect methods—which usually are based on information about the survival of children (see footnote 49)—circumvent death and birth registration omissions and can help to derive estimates of childhood mortality in different socioeconomic and geographic groups within each country by using variables available in the same source of information. Such estimates thus help identify the populations exposed to different risk factors. There are also indirect methods for estimating adult mortality, especially those based on maternal survival. Mortality estimated by these indirect methods is subject to several limitations that stem from deficiencies in the basic information and from implicit assumptions in the methods and model mortality tables employed. Nonetheless, the cumulative experience in applying them in the Region's countries shows that they generally yield acceptably reliable estimates.

To analyze causes of death, data available in PAHO's Technical Information System were used. This information is collected from reports that the Organization requests from Member Governments each year. These data, revised and organized, are presented in Annex III of this volume.

As this analysis was prepared, PAHO's mortality data were broken down by age, sex, and underlying cause of death (codified according to the International Classification of Diseases, Ninth Revision [ICD–9]), for 40 of a total of 48 countries and other political jurisdictions in the Region. The most recent data from three countries are for 1988, those from eight countries for 1987, those from nine countries for 1986, those from six countries for 1985, and those from fourteen countries for earlier years. Of this last group, seven countries do not have information more recent than that included in the 1981–1984 edition of this publication.[52]

Various aspects of mortality have been analyzed for the three subregions of the Americas (Latin America, the non-Latin Caribbean, and North America) and also for the countries that compose them. In some subsections the analysis is limited to Latin American countries that, because of their heterogeneity, adequately represent the Region's different stages of demographic transition. Excluded from the analysis, but included in Annex III, are data from countries with fewer than 2,000 registered deaths per year.

General Mortality

For each country in the Americas, Table 16 summarizes changes in life expectancy at birth during 1950–1990 and projections for the year 2000, the target year for attaining the goal of health for all. This indicator synthesizes overall mortality and allows comparisons to be made among countries by eliminating the effect of differences in their populations' age distribution.

Situation in the Subregions

The first major fact shown by Table 16 is that during the past 40 years mortality has been substantially reduced throughout the Americas, although at very different levels in the three subregions; these differences, though minor, continue today. Latin American countries have gained 15 years in life expectancy at birth since the 51.8 figure recorded in 1950–1955; an average increase of approximately two years per five-year period has increased this longevity to 66.6 years at present. The non-Latin Caribbean has made similar progress, with the difference that in 1950–1955 its life expectancy at birth was approximately five years longer. This advantage has persisted, so that now its life expectancy is 72.4 years. In North America average life expectancy at birth was 69 years four decades ago, and though recent advances have been slower, life expectancy reached 76.1 years in 1985–1990.

The trends outlined above have significantly reduced the gap in mortality among the American subregions,

[52]PAHO, *Health Conditions in the Americas, 1981–1984,* Vol. 1, Scientific Publication No. 500 (Washington, D.C., 1986).

TABLE 16

Life expectancy at birth, by subregions and countries, 1950–2000.

Subregions, groups, and countries	Life expectancy at birth			Quinquennial increase		Life expectancy at birth	Population in 1990	
	1950–1955	1970–1975	1985–1990	1950–1955 to 1970–1975	1970–1975 to 1985–1990	Year 2000	Millions	Percentage
Latin America	51.8	61.2	66.6	2.4	1.8	69.7	438.0	100.0
1. Bolivia	40.4	46.7	53.1	1.6	2.1	60.5	7.3	
Haiti	37.6	48.5	54.7	2.7	2.1	59.4	6.5	
Total							13.8	3.2
2. Peru	43.9	55.5	61.4	2.9	2.0	67.9	22.3	
Guatemala	42.1	54.0	62.0	3.0	2.7	68.1	9.2	
El Salvador	45.3	58.8	62.2	3.4	1.1	68.8	5.3	
Nicaragua	42.3	54.7	63.3	3.1	2.9	69.3	3.9	
Honduras	42.3	54.0	64.0	2.9	3.3	68.2	5.1	
Total							45.8	10.5
3. Brazil	51.0	59.8	64.9	2.2	1.7	68.0	150.4	
Ecuador	48.4	58.9	65.4	2.6	2.2	68.2	10.6	
Dominican Republic	46.0	59.9	65.9	3.5	2.0	69.7	7.2	
Paraguay	62.6	65.6	66.9	0.7	0.4	67.9	4.3	
Colombia	50.6	61.6	68.2	2.8	2.2	70.7	33.0	
Mexico	50.8	62.6	68.9	3.0	2.1	72.1	88.6	
Venezuela	55.2	66.2	69.7	2.8	1.1	71.3	19.7	
Total							313.8	71.6
4. Argentina	62.7	67.3	70.6	1.1	1.1	72.3	32.3	
Chile	53.8	63.6	71.5	2.5	2.6	72.7	13.2	
Uruguay	66.3	68.8	72.0	0.6	1.1	73.0	3.1	
Panama	55.3	66.3	72.1	2.8	1.9	73.5	2.4	
Total							51.0	11.6
5. Costa Rica	57.3	68.1	74.7	2.7	2.2	75.8	3.0	
Cuba	59.5	71.0	75.2	2.9	1.4	76.3	10.6	
Total							13.6	3.1
Non-Latin Caribbean	56.4	67.1	72.4	2.7	1.8	74.7	6.2	100.0
1. Suriname	56.0	64.9	69.5	2.2	1.5	72.6	0.4	
Guyana	55.2	64.1	69.7	2.2	1.9	72.8	1.0	
Trinidad and Tobago	57.9	66.5	70.2	2.2	1.2	73.1	1.3	
Total							2.7	44.1
2. Guadeloupe	56.5	67.8	73.3	2.8	1.8	75.7	0.3	
Barbados	57.2	69.4	73.9	3.1	1.5	76.2	0.3	
Jamaica	57.2	67.8	74.0	2.6	2.1	76.2	2.5	
Martinique	56.5	68.8	74.2	3.1	1.8	76.4	0.3	
Total							3.5	55.9
North America	69.1	72.2	76.1	0.8	1.3	78.1	275.7	100.0
United States of America	69.0	71.3	75.4	0.6	1.4	77.6	249.2	
Canada	69.1	73.1	76.7	1.0	1.2	78.5	26.5	

Source: CELADE, 1990, and United Nations, 1989.

which are at different stages of development. The difference between Latin America and North America shrank from 17.3 to 9.5 years from 1950–1955 to 1985–1990, and between the non-Latin Caribbean and North America, from 12.7 to 3.7 years. Today, these subregions have a lower mortality than other underdeveloped regions of the world (except Eastern Asia), whose life expectancies vary from 51.9 to 63.1 years.[53]

These advances should not obscure the need to further

[53]United Nations, *Population Bulletin of the United Nations,* No. 25 (ST/ESA/SER.N/25) (New York, 1988).

reduce mortality in Latin America, where health problems are manifested in an excessive mortality even when the analysis uses an indicator as global as life expectancy at birth. The current level of overall mortality in Latin America is equivalent to that which existed in the United States of America approximately 40 years ago (1945–1950). In addition, despite all the technological progress in the field of health, Latin America's reduction in overall mortality in the last 35 years is comparable to that which the United States achieved over an equal period of time, from 1910–1914 to 1945–1950, starting from the same life expectancy at birth.[54] In other words, it is a gain similar to that which the United States made before many of the modern advances in preventing and treating major diseases had been made and which also occurred during a period in which the United States took part in two world wars. According to projections and the present pace in reducing mortality, Latin America will not attain—not even 35 years hence (2020–2025)—the life expectancy the United States now has.[55] Furthermore, the pace of gain in life expectancy at birth for all of Latin America has moderated since 1970.

Situation by Country

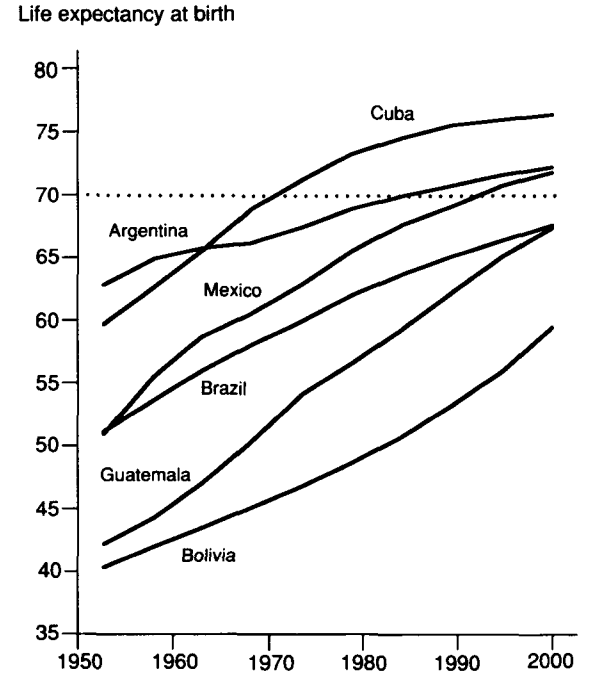
A country by country analysis in Latin America reveals the Region's heterogeneity. Life expectancy at birth varies from 53 years in Bolivia to 75 years in Cuba. Table 16 groups countries by the level of this indicator in 1985–1990, and summarizes their past trends and their projections for the year 2000. Figure 1 illustrates the trends in selected countries of each group for the period 1950–2000.

In group 1 countries (Bolivia and Haiti), life expectancy in 1950–1955 barely approached 40 years, a level that industrialized countries had reached by the end of the last century. These two countries have continued to make gains in survival comparable to average improvements in Latin America, but because of their adverse conditions at the outset, these countries have now reached an average longevity of only 54 years. If recent trends persist, it is estimated that life expectancy at birth in the year 2000 will be almost ten years below that established as the goal of health for all for that year. According to projections, these countries probably will not reach the goal of 70 years of life expectancy at birth even 40 years from now.

In 1950–1955, group 2 (El Salvador, Guatemala, Honduras, Nicaragua, and Peru) also lagged behind, with

FIGURE 1

Life expectancy at birth in selected countries of Latin America, 1950 - 2000.



Source: CELADE (1990).

life expectancies of 42–45 years. This group's gains have been more intense than the previous one's, approaching an average of three years per five-year period; this improvement appears to have held since 1970, except in El Salvador. Life expectancy in the current five-year period is 61–64 years and is estimated to approach 70 years by the year 2000.

In group 3 (Brazil, Colombia, the Dominican Republic, Ecuador, Mexico, Paraguay, and Venezuela), life expectancy today varies from 65 to 70 years, but this group is fairly heterogeneous in the evolution of mortality. Most of these countries began with an intermediate mortality (46–55 years); they made significant progress by the beginning of the 1970s (with three or more years gained every five years), which later slowed. Even so, four of them will reach the year 2000 goal of 70 years life expectancy at birth (Colombia, the Dominican Republic, Mexico, and Venezuela). Progress in Brazil has been less, and it has apparently slowed in the most recent five-year period: the country's estimated life expectancy for the year 2000 is 68 years, and it is projected that it will achieve the goal of 70 years in about 2010. In 1950–1955, Paraguay was among the three countries with the lowest overall mortality in Latin America, but its advances have

[54]U.S. Department of Health, Education, and Welfare, *Vital Statistics of the United States, 1962* (Washington, D.C., 1987).

[55]CELADE, "América Latina. Proyecciones de población 1950–2025," *Boletín Demográfico* (Santiago), No. 45 (in press), 1990.

been very small since then. At its current pace, it will not achieve the proposed goal for a long time.

All the countries in group 4 (Argentina, Chile, Panama, and Uruguay) already have life expectancies at birth of 70 years or more, and they will reach 73 years in the year 2000. The group encompasses two different situations: Argentina and Uruguay, which in 1950–1955 had a considerably greater survival than all the remaining Latin American countries, have since then made slow progress; in contrast, Chile and Panama, which had life expectancies of 54–55 years at the start of the period, have continued to make significant advances.

Group 5 (Costa Rica and Cuba) is in the forefront of the transition toward a lower mortality. Their situation was already favorable in 1950–1955 (with an average life span of 57–59 years), and since then they have had sustained increases, with Cuba reaching a life expectancy of 70 years in 1970 and Costa Rica doing so in 1978. It is assumed that in 2000 both will reach 76 years, a level only one or two years lower than that projected for the United States and Canada in that year.

Using Costa Rica's and Cuba's historical experience as a feasible reference model for Latin America shows that during the period in which they increased their life expectancy at birth from 60 to 70 years (where many of the Region's countries are today), the five-year increases averaged 2.9 years. For many of the countries in which life expectancy gains have moderated in recent five-year periods, an acceleration such as that indicated would be necessary to achieve the proposed goals. It is interesting to note that in Costa Rica and Cuba the life expectancy at birth change from 60 to 70 years occurred approximately between 1958 and 1973—in 15 years—while the same change in the United States took 35 years (from 1930 to 1965). This illustrates the potential of technological progress in health, even in developing countries, provided that the health policy strives for these advances for the entire population.

After notable progress in evening out differences in mortality among countries during 1950–1970, trends in more recent five-year periods have tended to maintain heterogeneity among the Latin American countries. The variation in life expectancy at birth has been reduced only from 24 years in 1970–1975 to 22 years in 1985–1990.

Table 16 also shows estimated national populations in 1990. It is encouraging to note that only 13.6% of Latin America's total population corresponds to countries with unsatisfactory levels of general mortality, in other words, a life expectancy at birth lower than 65 years. Still, 38% of the population is in countries (Brazil, Ecuador, and Paraguay) which, although they currently have an average lifespan of 65–66 years, will not reach the set goal due to a slowdown of their increases, unless this pace accelerates.

The foregoing calculations are based on the estimated life expectancy for the total of each national population, although different social groups show differences in survival in each of the countries, as will be discussed below.

In contrast to Latin America, the non-Latin Caribbean countries included in this analysis are much more homogeneous in their transition to lower mortality, and only two groups can be distinguished. All had achieved a life expectancy at birth of 55–57 years in 1950–1955. Progress in Guyana, Suriname, and Trinidad and Tobago was similar to the Latin American average, with an average life span of 70 years today that will probably reach 73 years by the year 2000. Progress has been more rapid in the remaining countries, in which there were five-year gains averaging almost three years until 1970. Their life expectancy at birth is now 74 years, and it is projected to be 76 years by the year 2000.

In North America, Canada and the United States have had a substantially similar mortality course, but the former exceeds by approximately a year the life expectancy at birth in the latter.

Mortality by Age Groups

The indicator that has been used to analyze general mortality does not reveal major contrasts between and within countries. The following analysis considers death rates by age groups, which have been derived from corresponding mortality tables (see footnote 51). For the health sector, age is an important variable, since different risks of death and differences in the incidence of certain diseases are associated with it. As a result, some health programs are defined by specific age groups (infants, adults, the elderly).

Table 17 shows the death rates of the Latin American countries for five age groups—0 to 4 years old, 5–14 years old, 15–39 years old, 40–64 years old, and 65 years old and older—in 1970–1975 and 1985–1990, allowing for the study of the dynamics of these indicators in the period in question.

As can be seen, in this period mortality decreased in all countries and age groups, and, for obvious reasons, absolute decreases tended to diminish as the mortality level declined. A comparison of the countries in each of the groups defined for this analysis shows that those countries which made greater gains in life expectancy at birth in each group also have a tendency (with exceptions) to show greater reductions in death rates in children under 5 years old, which appear to be a significant factor of change. As a rule, the greater absolute reductions in mortality in these same countries tend to extend to other age groups. Examples of this pattern of change are Guatemala and Honduras in group 2, Ecuador and Colombia in

TABLE 17

Mortality rates by age, in countries listed according to mortality level, Latin America, 1970–1975 and 1985–1990.

Countries	Life expectancy at birth	Rates by age groups (per 1,000)				
		0–4	5–14	15–39	40–64	65 and over
Bolivia						
1970–1975	46.7	60.5	3.8	5.8	15.6	88.6
1985–1990	53.1	39.7	2.5	4.5	15.1	85.5
Difference	6.4	−20.8	−1.4	−1.3	−0.5	−3.0
Haiti						
1970–1975	48.5	47.1	3.2	6.7	18.5	86.9
1985–1990	54.7	30.8	2.0	4.8	17.0	83.7
Difference	6.2	−16.3	−1.2	−1.8	−1.5	−3.2
Peru						
1970–1975	55.5	38.5	2.2	3.7	11.9	81.0
1985–1990	61.4	27.2	1.3	2.5	9.7	75.5
Difference	5.9	−11.3	−0.9	−1.2	−2.2	−5.5
Guatemala						
1970–1975	54.0	37.1	3.3	4.7	14.7	75.2
1985–1990	62.0	21.4	1.8	3.7	10.9	67.5
Difference	8.0	−15.7	−1.5	−1.0	−3.8	−7.7
El Salvador						
1970–1975	58.8	33.4	1.7	2.9	11.1	73.4
1985–1990	62.2	18.6	0.8	4.7	10.3	70.3
Difference	3.4	−14.8	−0.9	1.8	−0.8	−3.1
Nicaragua						
1970–1975	54.7	34.2	2.5	5.0	14.0	79.6
1985–1990	63.3	20.2	1.5	3.2	9.9	69.0
Difference	8.6	−14.1	−1.0	−1.9	−4.1	−10.5
Honduras						
1970–1975	54.0	37.1	2.2	5.3	14.5	77.8
1985–1990	64.0	19.9	1.6	2.7	9.8	67.9
Difference	10.0	−17.2	−0.7	−2.5	−4.7	−9.9
Brazil						
1970–1975	59.8	27.8	1.6	3.5	11.9	69.7
1985–1990	64.9	18.5	1.1	2.6	10.2	65.8
Difference	5.1	−9.3	−0.5	−0.9	−1.6	−3.9
Ecuador						
1970–1975	58.9	30.6	2.1	3.2	11.3	73.5
1985–1990	65.4	18.9	1.3	2.3	9.0	66.5
Difference	6.5	−11.7	−0.8	−1.0	−2.4	−7.0
Dominican Republic						
1970–1975	59.9	29.7	1.5	2.8	10.8	75.4
1985–1990	65.9	17.7	0.9	2.1	8.8	69.3
Difference	6.0	−12.0	−0.6	−0.7	−2.0	−6.0
Paraguay						
1970–1975	65.6	16.1	1.1	1.9	9.7	73.4
1985–1990	66.9	14.3	1.0	1.7	9.2	71.3
Difference	1.3	−1.8	−0.1	−0.2	−0.5	−2.1
Colombia						
1970–1975	61.6	22.1	1.4	2.9	11.8	75.1
1985–1990	68.2	10.3	0.6	2.4	9.3	66.6
Difference	6.6	−11.8	−0.8	−0.5	−2.5	−8.4
Mexico						
1970–1975	62.6	21.3	1.3	3.2	11.2	67.7
1985–1990	68.9	11.1	0.7	2.4	8.8	62.2
Difference	6.3	−10.2	−0.6	−0.9	−2.3	−5.5

TABLE 17 (Cont.)

Mortality rates by age, in countries listed according to mortality level, Latin America, 1970–1975 and 1985–1990.

Countries	Life expectancy at birth	Rates by age groups (per 1,000)				
		0–4	5–14	15–39	40–64	65 and over
Venezuela						
1970–1975	66.2	14.1	0.9	2.2	11.0	67.2
1985–1990	69.7	9.0	0.7	1.8	9.4	64.5
Difference	3.5	−5.1	−0.2	−0.5	−1.6	−2.6
Argentina						
1970–1975	67.3	12.3	0.6	1.9	10.2	69.7
1985–1990	70.6	7.9	0.4	1.5	8.7	65.8
Difference	3.3	−4.5	−0.2	−0.4	−1.5	−3.9
Chile						
1970–1975	63.6	17.6	0.7	2.8	12.9	70.0
1985–1990	71.5	4.5	0.4	1.6	9.3	65.2
Difference	7.9	−13.1	−0.3	−1.2	−3.6	−4.8
Panama						
1970–1975	66.3	14.4	1.4	2.3	9.2	68.4
1985–1990	72.1	6.8	0.7	1.6	7.3	62.0
Difference	5.8	−7.7	−0.7	−0.7	−1.9	−6.4
Uruguay						
1970–1975	68.8	10.9	0.4	1.5	9.5	68.4
1985–1990	72.0	5.7	0.4	1.1	8.9	64.3
Difference	3.2	−5.1	−0.1	−0.4	−0.6	−4.1
Costa Rica						
1970–1975	68.1	13.6	0.7	1.7	8.4	68.1
1985–1990	74.7	4.6	0.3	1.0	6.1	61.2
Difference	6.6	−9.0	−0.4	−0.7	−2.3	−6.8
Cuba						
1970–1975	71.0	9.1	0.5	1.5	7.2	64.9
1985–1990	75.2	3.7	0.4	1.2	6.0	58.7
Difference	4.2	−5.4	−0.1	−0.3	−1.1	−6.2

Source: CELADE, 1989.

group 3, and Chile in group 4. In contrast, the smaller advances in Argentina, Paraguay, and Uruguay result from lesser declines in all age groups, which are most evident at the beginning of life.

To facilitate an analysis of the change in the age structure of mortality in these countries, the historical experience of Costa Rica's and Cuba's transition has been used as reference. This experience has the advantage of being Latin American and of being feasible for the Region's developing countries. The model—presented in Table 18—was developed by estimating, for each of these two countries, the mortality rates by ages at the time they reached life expectancies of 55, 60, 65, 70, and 75 years and by using the average of the rates thus estimated for both countries. It was confirmed that this model represents the age structure of mortality in Latin American countries in 1985–1990.

The model shows the transition in the age structure of mortality as life expectancy at birth increases in those two countries. There is a general pattern to this structure, which is characterized by higher mortality in infancy, minimal rates in the age group 5 to 14 years old, and a gradual increase for older age groups until a maximum is reached among those 65 years old. When life expectancy is low, all the rates are high, especially at the extreme ages. As life expectancy increases, the reduction in mortality affects all ages, but the greatest absolute gains occur among those younger than 5 years; at that age, the risk of death drops from 40.8 to 3.9 per 1,000 when life expectancy increases from 50 to 75 years (a reduction of 90% with respect to the initial level). Absolute declines are less in adults under 65 years old, since the risks of death are lower; within this group the absolute decrease is greater in the age group 40 to 64 years old (10.8

TABLE 18

Mortality rates by age, according to life expectancy at birth, Cuba-Costa Rica model.

Life expectancy at birth	Mortality rates by age (per 1,000)				
	0–4	5–14	15–39	40–64	65 and over
50	40.8	2.8	5.5	16.9	91.0
55	33.5	2.2	4.3	14.2	84.0
60	26.2	1.6	3.2	11.5	77.1
65	18.5	1.0	2.2	9.2	72.1
70	10.6	0.6	1.6	7.6	66.3
75	3.9	0.3	1.1	6.1	59.7

Source: CELADE, 1989.

points). It should be noted that there is a high mortality in the older age group in the countries farther behind in their transition and that, according to this model, the rates will probably decrease from 91 to 60 per 1,000.

Figure 2 shows mortality rates by age in 1985–1990 in Latin American countries selected according to their overall mortality level. It is clear that this distribution coincides with the changes experienced by Costa Rica and Cuba. The heterogeneous epidemiological conditions prevailing in the Region's countries are also evident. These historical changes in mortality by age reflect the changes in the structure of causes of death, which are analyzed below.

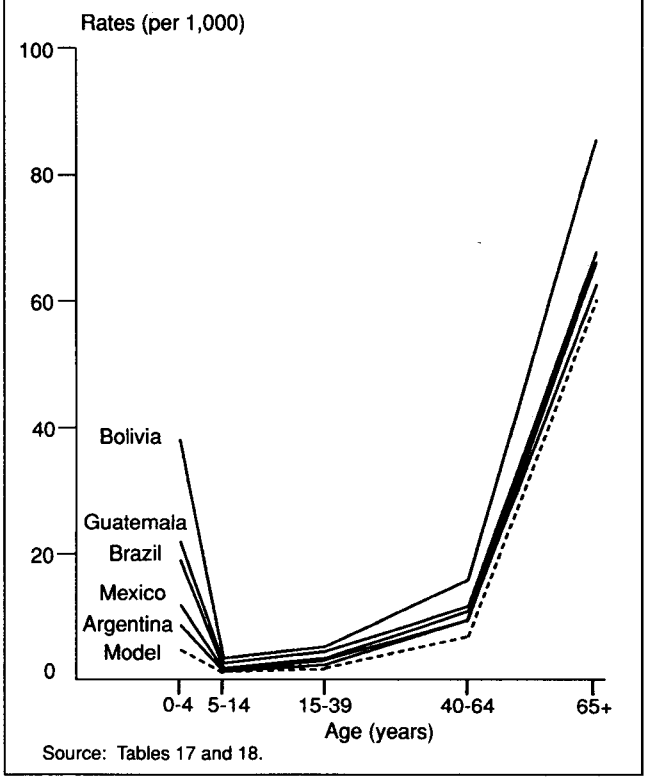
Analysis of the rates shows only part of the problem that concerns the health sector. A given rate may contribute a different number of deaths to a country's total number of deaths, depending on the relative size of the exposed population in a specific age group. Therefore, the age distribution of deaths depends on both the structure of age-specific mortality rates and the population's age distribution. As has been shown in the section on population, the demographic transition also changes the population's age structure.

Table 19 estimates the number of deaths to be prevented in each age group in the selected countries if efforts were made to reach specific goals expressed in life expectancy assuming that the population's age structure remained stable.

The goal of 70 years for the year 2000 was set for Bolivia, Brazil, and Guatemala. For Argentina and Mexico, which are farther along in terms of mortality levels, a more ambitious goal—75 years—was set, which is where Costa Rica and Cuba are today. To this end, deaths in each country were estimated according to the 1985–1990 rates, and expected deaths were estimated according to the model and the established goal. The deaths to be prevented, which are derived from the difference between

FIGURE 2

Age-specific mortality rates in selected countries of Latin America, 1985-1990.



Source: Tables 17 and 18.

these two values, are specified for each age group and are shown in Table 19 and Figure 3.

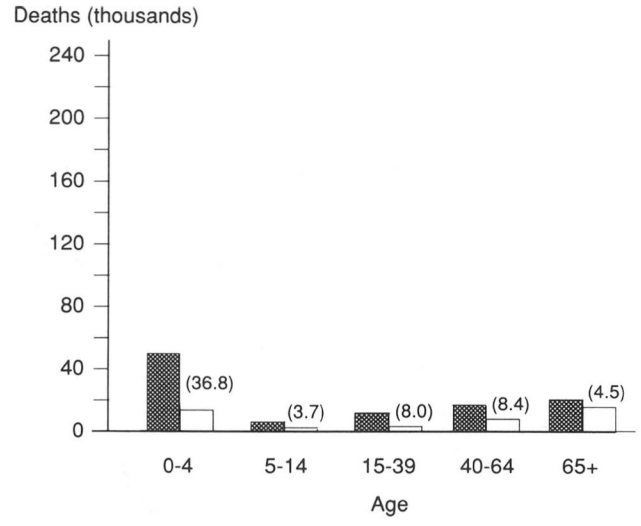
For those countries that currently have a high mortality (illustrated by Bolivia), increasing life expectancy from 53 to 70 years means reducing deaths by 59% (from 104,400 to 43,000). Sixty percent of this excess mortality (36,800 deaths) is in children under 5 years old. Although this age group has the advantage of effective techniques for reducing disease and death, it also is the most sensitive to adverse socioeconomic conditions. This excess mortality may be interpreted as an indicator of the work to be done if the health sector is to achieve the established goals. In this sense, these figures justify the emphasis given to extending maternal and child health programs in primary health care. However, a quarter of the excess mortality is in adults under 65 years old (27%). The situation in the age group 65 years old and older illustrates the fact that major differences between an age group's current rates and the goal may have scant numerical meaning if they pertain to minority populations, as in this case. A difference of 19 points in the rates, applied to a population that represents only 3.2% of the total, contributes only 7.3% of the deaths to be prevented.

FIGURE 3

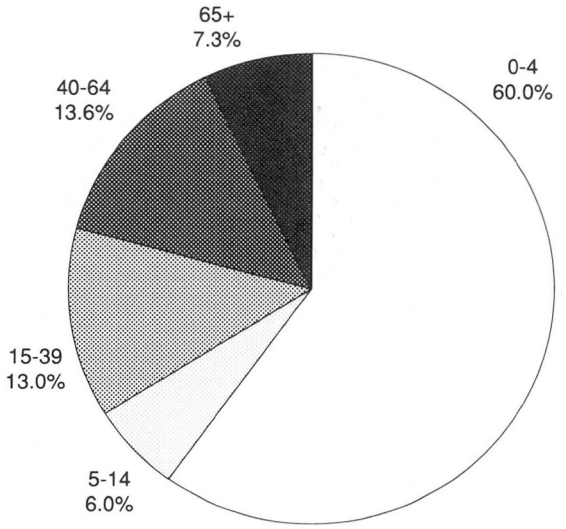
Deaths to be prevented in 1990, by age group, to attain specific life expectancy goals in the year 2000, in selected countries.

BOLIVIA

Number of deaths, actual and according to goal

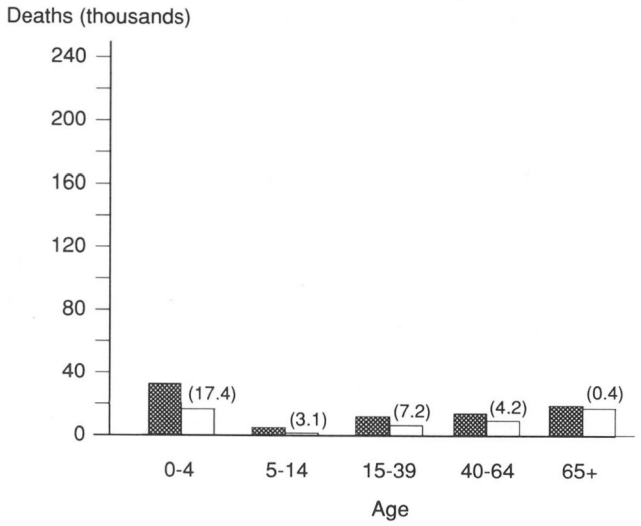


Distribution of deaths to be prevented

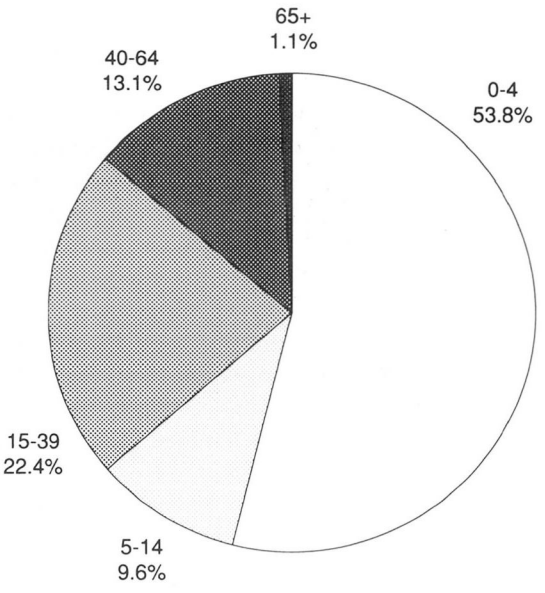


GUATEMALA

Number of deaths, actual and according to goal



Distribution of deaths to be prevented



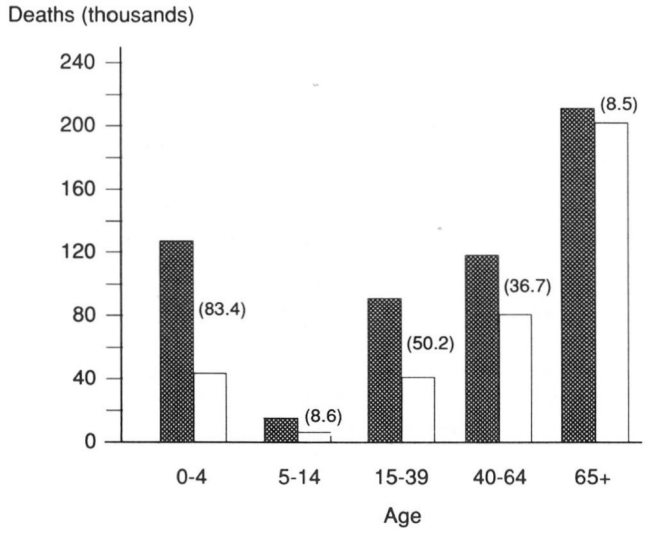
Actual Goal e (o) = 70 years ( ) Deaths to be prevented

FIGURE 3 (cont.)

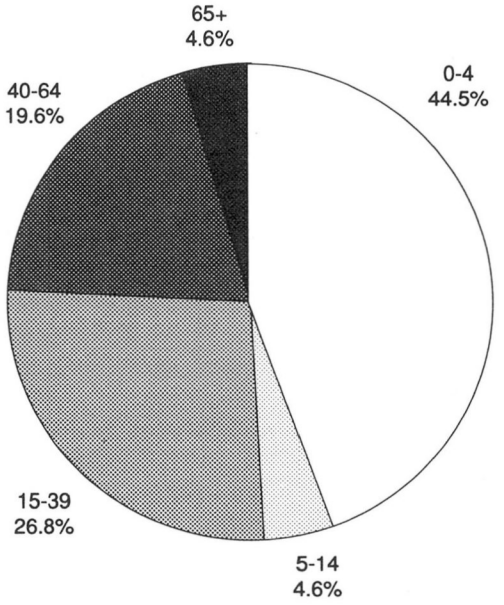
Deaths to be prevented in 1990, by age group, to attain specific life expectancy goals in the year 2000, in selected countries.

MEXICO

Number of deaths, actual and according to goal

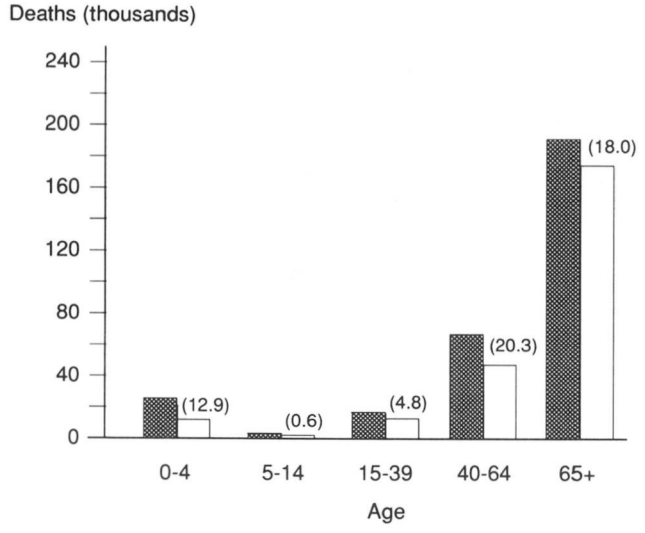


Distribution of deaths to be prevented

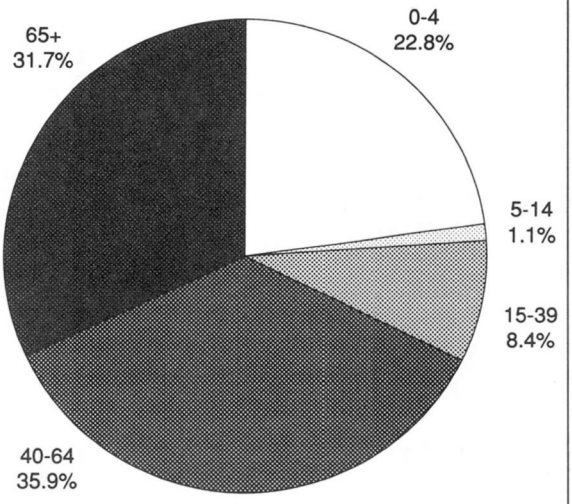


ARGENTINA

Number of deaths, actual and according to goal



Distribution of deaths to be prevented



Actual Goal e (o) = 75 years ( ) Deaths to be prevented

Source: Table 19.

TABLE 19

Deaths to be prevented in 1990 by age group, to attain specific goals in life expectancy at birth in the year 2000, in selected countries, Latin America.

Age	Population (thousands) 1990	Rates (per 1,000)		Deaths (thousands)		Excess deaths	
		Actual	Model	Actual	Model	Number	Percentage
Goal: life expectancy at birth of 70 years							
Bolivia	7,315	14.3	5.9	104.4	43.0	61.4	100.0 (59%)[a]
0–4	1,264	39.7	10.6	50.2	13.4	36.8	60.0
5–14	1,948	2.5	0.6	4.9	1.2	3.7	6.0
15–39	2,753	4.5	1.6	12.4	4.4	8.0	13.0
40–64	1,116	15.1	7.6	16.9	8.5	8.4	13.7
65 and over	234	85.5	66.3	20.0	15.5	4.5	7.3
Guatemala	9,197	9.3	5.8	85.4	53.1	32.3	100.0 (38%)[a]
0–4	1,608	21.4	10.6	34.4	17.0	17.4	53.8
5–14	2,571	1.8	0.6	4.6	1.5	3.1	9.6
15–39	3,447	3.7	1.6	12.8	5.5	7.2	22.4
40–64	1,279	10.9	7.6	13.9	9.7	4.2	13.1
65 and over	292	67.5	66.3	19.7	19.4	0.4	1.1
Brazil	150,367	8.6	6.6	1,289.2	992.3	297.0	100.0 (23%)[a]
0–4	18,963	18.5	10.6	350.8	201.0	149.8	50.4
5–14	34,014	1.1	0.6	37.4	20.4	17.0	5.7
15–39	63,357	2.6	1.6	164.7	101.4	63.4	21.3
40–64	27.035	10.2	7.6	275.8	205.5	70.3	23.7
65 and over	6,998	65.8	66.3	460.5	464.0	−3.5	−1.2
Goal: life expectancy at birth of 75 years							
Mexico	88,598	6.4	4.3	567.7	380.4	187.4	100.0 (33%)[a]
0–4	11,588	11.1	3.9	128.6	45.2	83.4	44.5
5–14	21,374	0.7	0.3	15.0	6.4	8.6	4.6
15–39	38,645	2.4	1.1	92.7	42.5	50.2	26.8
40–64	13,584	8.8	6.1	119.5	82.9	36.7	19.6
65 and over	3,407	62.2	59.7	211.9	203.4	8.5	4.5
Argentina	32,322	9.5	7.8	307.7	251.1	56.6	100.0 (18%)[a]
0–4	3,229	7.9	3.9	25.5	12.6	12.9	22.8
5–14	6,442	0.4	0.3	2.6	1.9	0.6	1.1
15–39	11,892	1.5	1.1	17.8	13.1	4.8	8.4
40–64	7,814	8.7	6.1	68.0	47.7	20.3	35.9
65 and over	2,945	65.8	59.7	193.8	175.8	18.0	31.8

[a]Percentage of total deaths in excess according to the model.
Source: CELADE, 1990, and Table 18.

The second group of high-mortality countries (illustrated by Guatemala, which has a life expectancy at birth of 62 years) must decrease current deaths by 38% to fulfill the goal. Again, these deaths are concentrated in children under 5 years old (54%), whose rates should be reduced from 21 to 11 per 1,000.

Brazil is an example of a country with a life expectancy close to 65 years. To increase this survival by five years, it is necessary to prevent almost a quarter of current deaths, half of which occur in children under 5 years old, whose rates exceed the model's by 75%. Excesses in the rates of the 15–39 and 40–64 age groups also are important, because even though these rates are relatively moderate, they affect 60% of the population and thus contribute 45% of the deaths to be prevented.

Argentina and Mexico, which have or almost have reached a longevity of 70 years, were analyzed using a goal of 75 years. To reach this goal, Mexico must prevent

one of every three deaths estimated to occur today. These deaths are distributed almost equally between children and adults. These two countries are at an intermediate stage in the so-called "epidemiological transition": some mortality due to causes preventable in infancy persists, but chronic diseases of adulthood are growing in importance.[56] This is partly explained by the different mortality profiles in different social groups, among which the most neglected groups with the lowest standards of living have the highest mortality. In contrast, the mortality of groups that have better living conditions is closer to that in more advanced countries.

Argentina is a good example of the twofold process occurring in the demographic transition, which affects both the mortality and the age structure of the population. A reduction of early excess mortality in younger age groups and the lesser relative weight of infancy in a population with an older age structure lowers the number of excess deaths to be prevented (23% of the total) in this age group in order to achieve a life expectancy at birth of 75 years. The bulk of the problem (68% of the total excess deaths) is now concentrated in the 40–64 and 65-year-old-and-older age groups, which together constitute a third of the total population.

In short, even without considering causes of death in the analysis, this discussion shows the variety of epidemiological situations that exist today in Latin American countries. This means that different programmatic aspects of health must receive different emphasis, depending on a country's level of mortality and the corresponding age structure of mortality. To a lesser extent, this emphasis also is affected by changes in the population's age structure. This analysis has not dealt with the time frame required to reach necessary advances, but, obviously, it is imperative for those countries that lag farther behind to speed up changes to lower mortality by concentrating on those age groups in which advances are more significant and can be achieved.

Mortality by Sex

This section covers only the most important differences by sex in general mortality. More specific differences between the sexes in mortality from certain diseases and maternal mortality, defined by causes that depend on the woman's reproductive process, will be discussed in the relevant chapters, especially the one on women's health.

Table 20 shows, as is well-known, that women have a lower death rate than men. For all of Latin America, the difference in life expectancy at birth is now 5.6 years, so that while life expectancy in women nears 70 years, in men it is 64 years. Between 1970–1975 and 1985–1990 the gains in this indicator also have been greater for women (5.9 years) than for men (4.9 years), which tends to increase the difference.

In general, when living conditions are extremely difficult, it has been observed that life expectancy at birth is low for both sexes; differences in mortality by sex are small, and they increase as mortality is reduced (see footnote 53). To a certain extent, this is the situation in the groups of countries under analysis. In countries with high death rates, life expectancy in women is only three to five years greater than in men. In the group with lower mortality, the difference is generally more than six years, while in the United States and Canada the difference is seven years. El Salvador is an exception among the high-mortality countries, in that the difference there is 8.5 years; this may be explained by the lesser life expectancy of men, probably due to the war.

Costa Rica and Cuba have achieved the same life expectancy at birth among men as the United States and Canada (72–73 years), but their levels for women are still two to three years below the high life expectancy level of 79–80 years that women have in the Region's most developed countries. At the other extreme, in Bolivia and Haiti the conditions of greater risk for men, coupled with the contextual conditioners of high mortality, have resulted in an estimated male life expectancy of scarcely 51–53 years for the present five-year period.

An analysis of mortality by causes and by age will better examine the meaning of the differences summarized here.

Mortality by Major Groups of Causes

The analysis of the historical changes in the structure of the population and mortality by ages noted that all the countries experienced a trend toward an aging of the population to one degree or another. The analysis also pointed out that this process is intimately linked to changes in a country's epidemiological profile: as excess mortality in young age groups—associated chiefly with infection (above all, diarrheas, acute respiratory infections, and diseases preventable by vaccination) and with malnutrition and perinatal causes—is controlled, the chronic diseases of adulthood (especially cardiovascular disorders and neoplasms) and violent deaths gradually gain in relative importance.

In addition to the previously cited deficiencies regarding the underregistration and processing of information (see the section on population), an analysis of mortality according to causes of death faces difficulties posed by problems inherent in the determination and certification

[56] J. Frenk et al., "The Epidemiologic Transition in Latin America" (paper presented at the General Conference of the International Union for the Scientific Study of Population, New Delhi, 1989).

TABLE 20

Life expectancy at birth, by sex and by subregions and countries listed according to mortality level, Region of the Americas, 1970–1975 and 1985–1990.

Subregion and country	Male			Female			Differences by sex	
	1970–1975	1985–1990	Difference	1970–1975	1985–1990	Difference	1970–1975	1985–1990
Latin America	59.0	63.9	4.9	63.6	69.5	5.9	4.5	5.6
Bolivia	44.6	50.9	6.3	49.0	55.4	6.4	4.4	4.6
Haiti	47.1	53.1	6.0	50.0	56.4	6.4	2.9	3.3
Peru	55.9	59.5	3.6	57.2	63.4	6.1	1.4	3.9
Guatemala	52.6	59.7	7.1	55.5	64.4	8.9	2.9	4.7
El Salvador	56.6	58.0	1.5	61.1	66.5	5.5	4.5	8.5
Nicaragua	53.7	62.0	8.3	55.8	64.6	8.9	2.1	2.6
Honduras	52.2	61.9	9.7	55.8	66.1	10.3	3.6	4.1
Brazil	57.6	62.3	4.7	62.2	67.6	5.4	4.6	5.3
Ecuador	57.4	63.4	6.0	60.5	67.6	7.1	3.1	4.2
Dominican Republic	58.1	63.9	5.7	61.8	68.1	6.3	3.6	4.2
Paraguay	63.8	64.8	1.0	67.6	69.1	1.5	3.8	4.3
Colombia	59.9	65.5	5.6	63.5	71.1	7.7	3.5	5.6
Mexico	60.4	65.7	5.3	64.9	72.3	7.3	4.5	6.6
Venezuela	63.5	66.7	3.2	69.1	72.8	3.7	5.6	6.1
Argentina	64.1	67.3	3.2	70.7	74.0	3.3	6.6	6.7
Chile	60.5	68.1	7.6	66.8	75.0	8.2	6.3	6.9
Panama	65.0	70.2	5.2	67.8	74.1	6.3	2.8	3.9
Uruguay	65.6	68.8	3.2	72.2	75.3	3.1	6.6	6.5
Costa Rica	66.0	72.4	6.4	70.2	77.0	6.8	4.2	4.6
Cuba	69.4	73.5	4.1	72.7	77.0	4.3	3.3	3.5
Non-Latin Caribbean								
Suriname	62.7	67.1	4.4	67.3	72.1	4.8	4.6	5.0
Guyana	61.9	67.3	5.4	66.4	72.3	5.9	4.5	5.0
Trinidad and Tobago	64.4	67.7	3.3	68.7	72.8	4.1	4.3	5.1
Guadeloupe	64.7	70.1	5.4	70.9	76.7	5.8	6.2	6.6
Barbados	66.9	72.0	5.1	71.0	77.0	6.0	4.1	5.0
Jamaica	66.0	71.3	5.3	69.7	76.7	7.0	3.7	5.4
Martinique	66.7	72.0	5.3	71.0	76.5	5.5	4.3	4.5
North America								
United States of America	67.5	71.9	4.4	75.3	79.0	3.7	7.8	7.1
Canada	69.7	73.3	3.6	76.8	80.3	3.5	7.1	7.0

Source: CELADE, 1990, and United Nations, 1989.

of the cause of death and, to a lesser extent, by coding deficiencies. On the one hand, treating physicians often fill out incomplete death certificates; on the other, a more serious problem stems from a sizable portion of the population's lack of access to medical care, which results in certificates signed by nontreating physicians, with fewer chances for an accurate diagnosis, or in deaths reported by witnesses. An indirect indicator of this problem is the proportion of deaths coded as due to "symptoms, signs, and ill-defined conditions" according to codes 780–799 in the International Classification of Diseases, Ninth Revision (ICD–9). Table 21 shows that the percentage attributed to this code group, sometimes stated as "ill-defined causes," is excessive in many of the Region's countries; this problem has improved little since 1979, the year in which ICD–9 took effect.

The following discussion is limited to those countries that have an underregistration of deaths estimated at no greater than 20% and in which no more than 10% of the recorded deaths are attributed to the category of "symptoms, signs, and ill-defined conditions." This means that the basic cause of death in at least 72% of the estimated total deaths would be coded as a "defined" causal category, although it cannot be confirmed that all causes are "well defined" because the accuracy of the diagnosis cannot be verified. Table 21 shows that seven Latin American countries fulfill the criteria established here for analyzing mortality by cause: Argentina (with

TABLE 21

Status of death registries, total and by cause, by subregion and country, around 1986.

Subregion and country (year)	Total deaths	Crude rates		Estimated underregistration (%)	Ill-defined causes[a] over registered total (%)	Defined causes over estimated total (%)
		PAHO	UN			
Latin America						
Andean Area						
Colombia (1984)	137,189	4.9	7.7	36.4	5.7	60.0
Ecuador (1987)	51,567	5.2	7.6	31.6	15.1	58.1
Peru (1983)	93,290	5.0	10.7	53.3	7.0	43.4
Venezuela (1987)	78,436	4.4	5.4	18.5	...	...
Southern Cone						
Argentina (1986)	241,004	7.8	8.6	9.3	2.1	88.8
Chile (1987)	70,559	5.6	6.4	12.5	8.1	80.4
Paraguay[b] (1986)	12,695	5.6	6.6	15.2	17.2	70.2
Uruguay (1986)	28,792	9.5	10.2	6.9	7.2	86.4
Brazil[b] (1986)	811,623	5.9	7.9	25.3	20.4	59.5
Central American Isthmus						
Belize (1984)	785	4.9	...	...	11.7	...
Costa Rica (1988)	10,944	3.8	4.0	5.0	2.3	92.8
El Salvador (1984)	28,870	6.1	11.1	45.0	23.3	42.2
Guatemala (1984)	66,260	8.6	10.5	18.1	10.4	73.4
Honduras (1983)	19,304	4.7	9.0	47.8	48.1	27.1
Panama (1987)	9,105	4.0	5.2	23.1	8.2	70.6
Mexico (1986)	400,079	4.9	5.8	15.5	4.4	80.8
Latin Caribbean						
Cuba (1988)	67,944	6.7	6.8	1.5	0.2	98.3
Dominican Republic (1985)	27,844	4.3	7.2	40.3	15.0	50.7
Puerto Rico (1987)	23,950	6.7	6.5	(−3.1)	0.7	99.3
Caribbean						
Bahamas (1986)	1,407	5.7	...	...	1.8	...
Barbados (1988)	2,174	8.5	8.4	(−1.2)	3.7	96.3
British Virgin Islands (1982)	68	5.7	...	...	14.7	...
Cayman Islands (1983)	105	5.5	...	...	6.6	...
Dominica (1985)	466	6.1	...	...	17.2	...
French Guiana (1984)	469	5.1	5.9	13.6	13.2	...
Grenada (1984)	729	7.6	...	...	8.6	...
Guadeloupe (1981)	2,091	6.4	7.1	9.9	9.7	81.4
Guyana (1984)	4,781	5.1	...	...	10.7	77.2
Jamaica (1984)	13,706	6.0	5.6	(−7.1)	11.8	88.2
Martinique (1985)	2,140	6.5	7.7	15.6	11.0	75.1
Netherlands Antilles[b] (1981)	893	5.4	...	...	9.9	...
St. Kitts and Nevis (1985)	441	9.6	...	...	10.2	...
Saint Lucia (1987)	925	7.1	...	...	9.5	...
St. Vincent and the Grenadines (1986)	619	5.9	...	...	7.4	...
Suriname (1985)	2,275	6.1	6.5	6.2	16.2	78.6
Trinidad and Tobago (1986)	7,699	6.4	6.4	0.0	2.4	97.6
Turks and Caicos Islands (1987)	25	3.1	...	—	—	100.0
Virgin Islands (USA) (1980)	540	5.5	...	...	0.7	...
North America						
Canada (1986)	184,224	7.2	7.4	2.7	1.2	96.1
United States of America (1987)	2,123,323	8.7	8.8	1.1	1.5	97.4

[a]ICD–9 (780–799).
[b]Information Area
Source: PAHO, Technical Information System.

diagnostic coverage estimated at 88.8%), Chile (80.4%), Costa Rica (92.8%), Cuba (98.3%), Guatemala (73.4%), Mexico (80.8%), and Uruguay (86.4%). Since it is very difficult to interpret comparisons between rates based on such different levels of uncertainty, this analysis is limited to the proportional structure of mortality by major groups of causes, assuming that unrecorded deaths and those attributed to "symptoms, signs, and ill-defined conditions" have a distribution similar to that of deaths codified in a causal category.

In order to present an overview of the changes in the countries' epidemiological profiles, five major groups of causes were chosen: 1) communicable diseases, a group comprising all the infectious and parasitic diseases (001–139), meningitis (320–322), acute respiratory infections (460–466), and pneumonia and influenza (480–487); 2) benign and malignant neoplasms (140–239); 3) all diseases of the circulatory system (390–459); 4) certain conditions originating in the perinatal period (760–779); and 5) all external causes of injury and poisoning, regardless of whether accidental or purposely inflicted (E800-E999).

It should be kept in mind that for several reasons these groups do not necessarily constitute the five leading causes of death. In the first place, the groups of causes presented here were defined *a priori,* in order to facilitate presenting an overview and to analyze changes both in pathologies whose mortality was thought to be under control and in certain emerging problems. In addition, there is no single list of leading causes: the causal categories that compose it and its ranking depend on the grouping from which the selection is made.[57] Other groupings will be needed for other purposes. The groups used here are merely reference points for more specific analyses.

To discuss the causal structure of mortality, the selected countries are presented in order of their mortality (see Table 16): Guatemala represents the second group of countries arranged according to life expectancy at birth and Mexico represents the third group; Argentina, Chile, and Uruguay belong to the fourth group, and Costa Rica and Cuba belong to the fifth. The data from Canada, the country that has achieved the highest life expectancy in the Region, are included as a reference to illustrate what should be feasible. All figures are based on the annual average number of deaths during the past three years for which this information was available.

Table 22 shows the number and relative importance of the selected causes with respect to the total of defined causes. In all the countries, the five groups of selected causes together constitute more than two-thirds of the total number of deaths from defined causes, and in five countries they exceed 80%.

The relative importance of these groups of causes also varies according to the level of mortality. As already noted, this level improves as the causes most often associated with high mortality in infancy are reduced. Therefore, communicable diseases clearly continue to be a significant problem, especially in countries with high levels of mortality, such as Guatemala and Mexico, where they rank in first place with 46% and 20%, respectively; in the remaining six countries, they represent between 4% and 12% of the total number of defined causes. Circulatory system diseases, tumors, and external causes occupy the first places in order of importance in the grouping used, and are responsible for between 60% and 75% of the total number of deaths in the five Latin American countries that have already reached a life expectancy of at least 70 years (see Table 16). In the countries with a lower life expectancy, these three groups of causes together account for fewer than half of the deaths, and in Guatemala they account for less than a quarter. Despite their apparent similarity, however, these five countries show significant variations in the relative size of each group of causes; this is especially striking regarding the conditions originating in the perinatal period, which represent less than 2% in Cuba and almost 6% in Costa Rica (in Canada they constitute no more than 1%).

Differences among the countries become even more obvious if an indicator that considers age at death is used. This is illustrated in Table 23, which shows the proportion of years of potential life lost (YPLL) for each group of causes.

For purposes of this overview, deaths before 65 years of age were defined as premature, since after that age death is more difficult to postpone or prevent.[58] Nevertheless, the choice of a ceiling age for determining premature death rests with the person who makes the analysis, and other limits might be advisable for other analytic purposes.[59]

Table 23 shows that the order of importance of these five groups of causes is much more irregular according to the YPLL than according to the proportional mortality shown in Table 22, and that, as was to be expected, the causes that kill at early ages acquire greater relative importance. Thus, communicable diseases continue to occupy first place in Guatemala and Mexico; conditions originating in the perinatal period now have first relative

[57]Pan American Health Organization, "Antecedentes de los proyectos sobre análisis de mortalidad. Investigación sobre perfiles de salud," *Bol Epidemiol* 9(2):1–3, 1988.

[58]R. Plaut and E. Roberts, "Preventable Mortality: Indicator or Target? Applications in Developing Countries," *World Health Stat Q* 42(1):4–15, 1989.

[59]U.S. Centers for Disease Control, "Premature Mortality in the United States: Public Health Issues in the Use of Years of Potential Life Lost," *MMWR* 35:2S, 1986.

TABLE 22

Mortality structure by broad groups of causes in selected countries, around 1985.

Country (year)	Defined causes total[a,b]		Broad groups of causes[b,c]											
			1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Guatemala (1980, 1981, 1984)	61,097	100.0	28,407	46.5	2,195	3.6	4,042	6.6	7,409	12.1	8,431	13.8	10,613	17.4
Mexico (1984–1986)	389,186	100.0	76,350	19.6	35,231	9.1	72,948	18.7	21,130	5.4	62,059	15.9	121,469	31.2
Argentina (1983–1985)	241,632	100.0	15,062	6.2	43,538	18.0	115,406	47.8	9,001	3.7	15,678	6.5	42,947	17.8
Chile (1985–1987)	66,214	100.0	8,040	12.1	13,209	19.9	19,860	30.0	1,764	2.7	8,737	13.2	14,605	22.1
Uruguay (1984–1986)	26,992	100.0	1,462	5.4	6,592	24.4	11,858	43.9	662	2.5	1,606	5.9	4,813	17.8
Costa Rica (1986–1988)	10,407	100.0	776	7.5	2,246	21.6	2,988	28.7	619	5.9	1,171	11.3	2,608	25.1
Cuba (1985–1987)	64,079	100.0	5,361	8.4	12,308	19.2	27,979	43.7	1,118	1.7	7,430	11.6	9,883	15.4
Canada (1984–1986)	177,717	100.0	7,116	4.0	46,678	26.3	78,668	44.3	1,245	0.7	13,720	7.7	30,291	17.0

[a]Excludes symptoms, signs, and ill-defined conditions.
[b]Three-year averages.
[c]Broad groups of causes:
1: Communicable diseases (001–139, 320–322, 460–466, 480–487).
2: Neoplasms (140–239).
3: Diseases of the circulatory system (390–459).
4: Certain conditions originating in the perinatal period (760–779).
5: External causes of injury and poisoning (E800–E999).
6: All other diseases (rest of 001–779).
Source: PAHO, Technical Information System.

TABLE 23

Number and percentage of years of potential life lost (YPLL) by broad groups of causes in selected countries, around 1985.

Country (year)	Defined causes total[a,b]		Broad groups of causes[b,c]											
			1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Guatemala (1980, 1981, 1984)	2,520,484	100.0	1,372,797	54.5	26,261	1.0	36,303	1.4	463,083	18.4	275,077	10.9	346,962	13.8
Mexico (1984–1986)	9,455,472	100.0	3,128,717	33.1	386,556	4.1	526,817	5.6	1,320,646	14.0	1,913,082	20.2	2,179,656	23.1
Argentina (1983–1985)	2,740,308	100.0	352,926	12.9	323,030	11.8	509,034	18.6	562,583	20.5	390,348	14.2	602,387	22.0
Chile (1985–1987)	859,514	100.0	136,760	15.9	102,337	11.9	69,561	8.1	110,268	12.8	245,407	28.6	195,182	22.7
Uruguay (1984–1986)	226,017	100.0	26,580	11.8	38,444	17.0	34,328	15.2	41,354	18.3	34,482	15.3	50,828	22.5
Costa Rica (1986–1988)	178,834	100.0	24,126	13.5	19,751	11.0	12,983	7.3	38,664	21.6	32,319	18.1	50,991	28.5
Cuba (1985–1987)	634,113	100.0	64,472	10.2	79,188	12.5	104,272	16.4	69,875	11.0	185,459	29.2	130,847	20.6
Canada (1984–1986)	1,084,878	100.0	26,048	2.4	257,039	23.7	204,356	18.8	77,810	7.2	316,786	29.2	202,839	18.7

[a]Excludes symptoms, signs, and ill-defined conditions (780–799).
[b]Three-year averages.
[c]Broad groups of causes:
1: Communicable diseases (001–139, 320–322, 460–466, 480–487).
2: Neoplasms (140–239).
3: Diseases of the circulatory system (390–459).
4: Certain conditions originating in the perinatal period (760–779).
5: External causes of injury and poisoning (E800–E999).
6: All other diseases (rest of 001–779).
Source: PAHO, Technical Information System.

importance in Argentina, Costa Rica, and Uruguay; and external causes rank first in Canada, Chile, and Cuba. Figure 4 compares proportional mortality and the proportion of YPLL for the selected groups of causes. In all the countries the YPLL make the importance of communicable diseases (except in Canada), conditions originating in the perinatal period, and external causes (except in Guatemala) more striking. In contrast, circulatory system diseases and tumors, which are concentrated in the more advanced ages near 65 years, lose visibility. By definition, deaths that occur after the age set as the limit are ignored by this indicator.

The YPLL indicator is not a substitute for indicators of survival that can be obtained from mortality tables, when the data quality justifies their use. Further, the YPLL for a group of causes should not be interpreted as the years of life that could be gained if those causes were eliminated, since this indicator does not contemplate the possibility of dying from other causes before reaching the age established as the limit.[60] In addition, the population's age structure heavily influences the size of the YPLL proportions for different causes, just as it influences the proportional mortality by cause.

The YPLL indicator is used here, along with proportional mortality, because it is easily constructed and allows a quick view of the combined importance of the relative frequency of a cause of death and the age at which its impact predominates. Both indicators are summary measures that cannot reflect the contrasts among and within countries, and they must be complemented by more specific analyses.

Table 24 shows the mortality structure according to the groups of causes in each of the previously defined five age groups.[61] In countries with high mortality levels, structure by cause of death in children under 5 years old continues to be dominated by communicable diseases, which make up 62% of the deaths in that age group in Guatemala and almost 50% in Mexico. In the rest of the Latin American countries, these diseases are responsible for close to one-fifth of the total number, even in countries with mortality as low as in Costa Rica and Cuba; in Canada they represent only 5%.

In Guatemala, the proportion of deaths due to communicable diseases continues to be disproportionately high in all age groups, but especially in the age group 5 to 14 years old, in which it exceeds two-thirds of the deaths. In Mexico, one-quarter of the children who die in this age group are victims of communicable diseases.

It is estimated that in 1990, more than 20,000 children under 15 years old will die of communicable diseases in Guatemala, 4.5 times more than in Argentina, a country that has more than double the number of children in this age group. There are no reasons to assume that the situation is very different in other countries with mortality levels similar to those in Guatemala. Certainly, communicable diseases are a heterogeneous group, both in terms of their causes and in the methods used to prevent them. The persistence of mortality from diseases that can be prevented with available effective vaccines reflects the health sector's inability to cover the entire population of children with this technology. Mortality from intestinal infections also signals the persistence of problems tied to underdevelopment and poverty, such as chronic malnutrition and deficiencies in environmental sanitation, as well as inadequate knowledge and habits which, if improved, could offset their effects (see Annex III). Data on communicable disease mortality merely touch on the magnitude of the morbidity from these pathologies, which are generally not fatal, although it is acknowledged that the case-fatality rate may be higher than normal in underprivileged groups.

The other group of causes that dominates mortality in children under 5 years old consists of conditions originating in the perinatal period, which represents about one-quarter of the total mortality in Guatemala and Mexico, rising to close to two-fifths in the countries with lower mortality. As will be seen below, in the countries with high overall and infant mortalities, this problem basically springs from deficiencies in delivery care, while in more advanced countries it tends to reflect a limited survival of live borns with low birthweight. It is striking that in Canada, 40% of deaths in this age group are in the residual cause group, mostly because of the greater relative weight of congenital anomalies, which are more difficult to prevent (see Annex III).

The most notable aspect in the age group 5 to 14 years old and in young adults (15 to 39 years old) is the extent of the problem posed by external causes: with proportions between 38% and 62%, they represent by far the most important cause of death in these two age groups in all of the countries analyzed (except Guatemala in the age group 5 to 14 years old). These groups suffer from domestic, work, and highway accidents, as well as from the explosive increase in violence, a symptom of modern life problems that affect individual and collective mental health and result from deteriorating living conditions and social tensions.

As with communicable diseases, data for mortality from external causes are no more than a pale indicator of the magnitude of the problem of nonfatal lesions, but in this case the high social and financial cost of treatment and of disabilities must also be considered.

[60]Pan American Health Organization, "Regional Meeting on Guidelines and Procedures for Analyzing Mortality," *Bol Epidemiol* 9(2):3–6, 1988.

[61]For each group of causes, deaths in persons of unknown age (about 2% of the groups of defined causes) were distributed in the five age groups in proportion to deaths in persons of known age.

TABLE 24

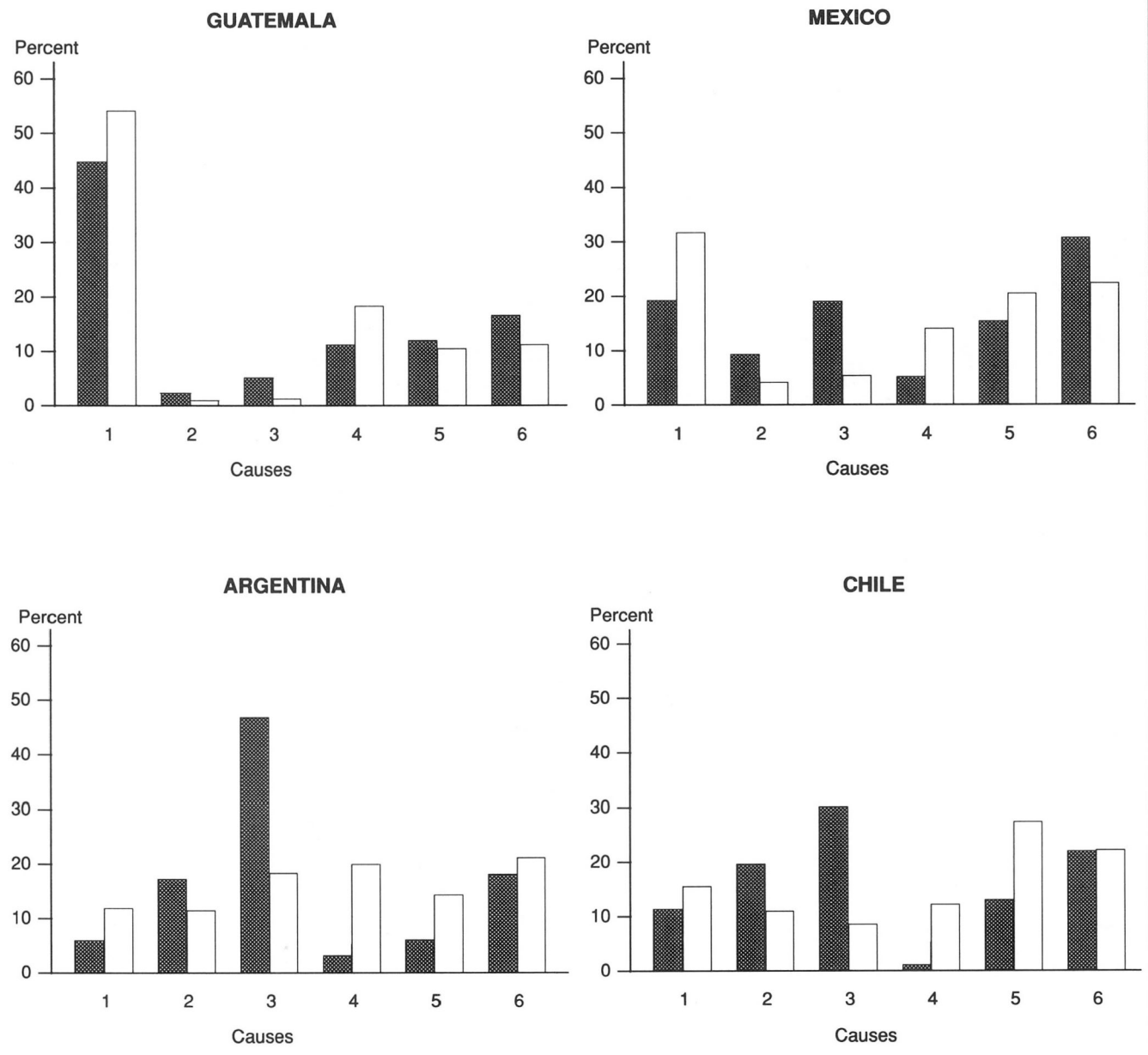
Mortality structure by broad groups of causes and by age groups in selected countries, around 1985.

Age groups	0–4	5–14	15–39	40–64	65 and over	0–4	5–14	15–39	40–64	65 and over
	Guatemala (1980, 1981, 1984)					Mexico (1984–1986)				
Total[a,b]	29,373	3,056	10,850	8,778	9,040	88,009	11,905	59,084	86,755	143,433
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cause groups[b,c]										
1	61.7	68.6	22.3	31.8	33.1	48.5	24.8	9.0	9.3	12.1
2	0.1	1.5	2.6	10.0	10.6	0.7	8.4	5.9	14.8	12.0
3	0.1	1.0	4.4	13.0	26.0	2.1	4.9	7.5	19.6	34.2
4	25.2	0.0	0.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0
5	0.9	9.9	54.8	17.8	4.0	4.8	42.4	53.9	16.4	4.7
6	12.0	19.1	15.9	27.4	26.3	19.9	19.6	23.7	39.9	37.0
	Argentina (1983–1985)					Chile (1985–1987)				
Total[a,b]	20,849	2,290	13,947	63,062	141,484	5,796	850	6,314	17,098	36,156
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cause groups[b,c]										
1	20.3	10.6	7.3	4.8	4.6	26.1	14.0	7.8	8.1	12.6
2	1.3	16.7	13.8	27.0	16.9	1.5	15.2	13.0	27.6	20.6
3	4.4	10.4	20.2	42.2	59.9	0.6	3.5	6.9	23.1	42.6
4	43.2	0.0	0.0	0.0	0.0	30.4	0.0	0.0	0.0	0.0
5	6.4	40.8	37.9	7.3	2.5	16.8	48.6	55.0	14.7	3.8
6	24.5	21.5	20.8	18.7	16.0	24.5	18.8	17.3	26.5	20.5
	Uruguay (1984–1986)					Costa Rica (1986–1988)				
Total[a,b]	1,600	182	1,056	6,113	18,041	1,570	209	1,119	2,178	5,331
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cause groups[b,c]										
1	20.9	7.0	5.7	3.6	4.6	21.2	8.4	3.3	3.6	5.8
2	1.4	18.2	17.7	37.0	22.7	1.8	15.6	17.3	32.6	24.0
3	2.0	5.0	13.7	34.6	53.0	1.2	4.8	9.5	26.6	42.6
4	41.3	0.0	0.0	0.0	0.0	39.4	0.2	0.0	0.0	0.0
5	6.7	43.9	43.4	8.1	2.6	4.1	39.6	48.4	12.6	3.9
6	27.7	26.1	19.5	16.7	17.2	32.3	31.4	21.4	24.5	23.7
	Cuba (1985–1987)					Canada (1984–1986)				
Total[a,b]	3,069	804	5,968	13,941	40,297	3,184	849	9,612	38,298	125,774
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cause groups[b,c]										
1	23.6	9.7	3.7	3.9	9.4	5.3	3.5	1.5	1.8	4.8
2	1.9	13.4	10.0	27.0	19.3	3.0	17.9	14.6	39.7	23.7
3	2.4	4.9	12.0	40.6	53.3	1.5	3.6	8.8	35.1	51.1
4	36.4	0.0	0.0	0.0	0.0	39.0	0.2	0.0	0.0	0.0
5	7.9	47.8	56.9	12.6	4.1	11.0	55.3	62.4	9.2	2.7
6	27.8	24.3	17.4	16.0	13.8	40.2	19.5	12.7	14.2	17.6

[a]Excludes symptoms, signs, and ill-defined conditions (780–799).
[b]Three-year averages.
[c]Broad groups of causes:
1: Communicable diseases (001–139, 320–322, 460–466, 480–487).
2: Neoplasms (140–239).
3: Diseases of the circulatory system (390–459).
4: Certain conditions originating in the perinatal period (760–779).
5: External causes of injury and poisoning (E800–E999).
6: All other diseases (rest of 001–779).
Source: PAHO, Technical Information System.

FIGURE 4

Mortality structure and proportion of YPLL by broad cause groups in selected countries, around 1985.

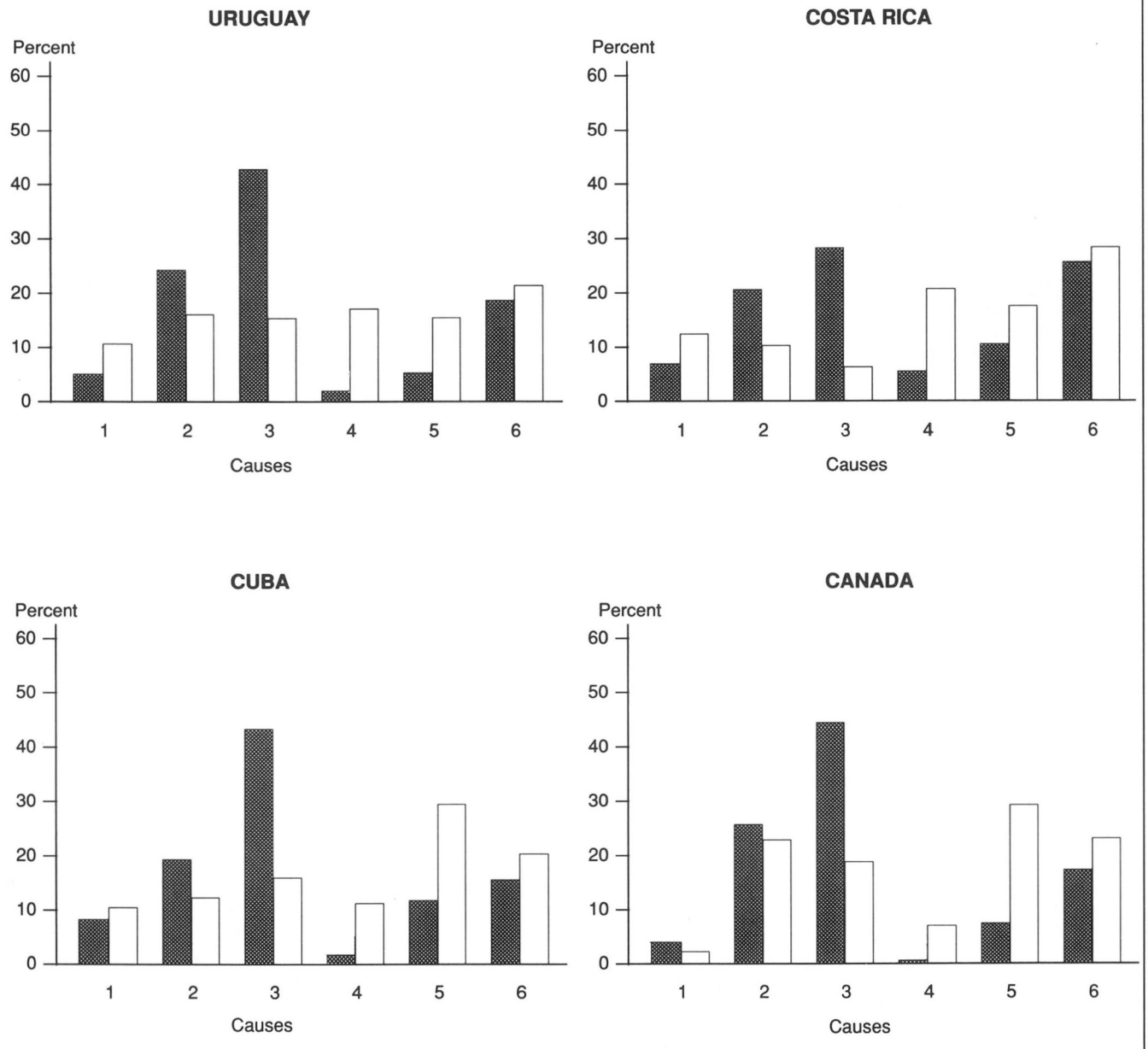


Cause groups (ICD-9)

1: Communicable diseases (001-139, 320-322, 460-466, 480-487)
2: Tumors (140-239)
3: Diseases of the circulatory system (390-459)
4: Certain conditions originating in the perinatal period (760-779)
5: External causes of injury and poisoning (E800-E999)
6: All other diseases (rest of 001-779)

FIGURE 4 (cont.)

Mortality structure and proportion of YPLL by broad cause groups in selected countries, around 1985.



Cause groups (ICD-9)

1: Communicable diseases (001-139, 320-322, 460-466, 480-487)
2: Tumors (140-239)
3: Diseases of the circulatory system (390-459)
4: Certain conditions originating in the perinatal period (760-779)
5: External causes of injury and poisoning (E800-E999)
6: All other diseases (rest of 001-779)

Source: Tables 22 and 23.

Diseases of the circulatory system and tumors gradually gain importance in the age groups over 40 years old, especially in countries with older population structures, such as Argentina, Canada, Cuba, and Uruguay. These problems are analyzed in greater detail in the section on adult health.

A few examples of deaths by groups of causes that must be prevented in order to attain certain levels of life expectancy at birth are illustrated below. To this end, children under 5 years old in Guatemala, the age group 15 to 39 years old in Mexico, and the age group 40 to 64 years old in Argentina were selected (see Table 25). The figures for deaths from all causes—actual and according to the model—have been taken from Table 19, which sets a goal of 70 years of life expectancy at birth for Guatemala and 75 years for Mexico and Argentina. The causal structure in each country was used for actual deaths by groups of causes, and the average of the percentages in Costa Rica and Cuba was used for the structure according to the model (see Table 24).

Table 25 shows that if the death rate were reduced, causes that previously had little visibility could become more obvious; for example, tumors would begin to emerge in Guatemala and in Mexico. This effect could be felt, even without a real increase in deaths from such causes, because of their greater relative weight in a smaller total number of deaths; however, since this could also indicate a real increase in specific risks, these causes should be kept under careful surveillance.

Figure 5 shows actual deaths and deaths according to the model and their distribution by cause of the excess deaths to be prevented. In Guatemala, where 51% of deaths in children under 5 years old are estimated to be excess deaths, almost 90% of those deaths were from communicable diseases. In Mexico, adults aged 15 to 39 years have an estimated 54% excess deaths, more than half of which are from external causes. In Argentina, 60% of the excess deaths (30%) are due to circulatory system diseases.

This quick glance at mortality by cause and by age is nothing more than a point of departure and orientation for more specific analyses of mortality and morbidity and of causative processes of dominant groups of causes. The group of causes termed "all other diseases" should also receive greater attention, especially in those countries and age groups with many deaths in that group. In Mexico, for example, where these causes represent 40% of the deaths in adults aged 40 to 64 years, more than half of those deaths are from chronic liver diseases and cirrhosis (ICD–9, 571) and diabetes (ICD–9, 250), each of which was responsible for 11% of the total number of deaths in this age group in 1986 (see Annex III).

This analysis once again illustrates the diversity of demographic and epidemiological conditions in which the health sector must conduct its activities in the Region.

Health Situation, Standard of Living, and Infant Mortality

The overall mortality level has traditionally served as an indicator of the health situation and of the population's standard of living and socioeconomic development. As has been shown, however, the overall mortality level changes slowly, and therefore its analysis is complemented by an analysis of infant mortality, an indicator which—especially in the absence of interventions specifically aimed at reducing it—is more sensitive to changes in the population's living conditions. A high overall mortality reflects the biological aggressions against the population's health that occur in an adverse physical and social environment, conditions that particularly affect infants under 1 year old. Considering that many of the deaths in this age group are due to preventable or treatable diseases, a high infant mortality rate denotes a society's inability to make these technological advances available to the total infant population, as well as the presence of adverse conditions that undermine these measures. Finally, since similar socioeconomic conditions determine high levels of infant mortality and of fertility, both the population and the mortality in the first year of life become significant components of the total number of deaths in a country. In the countries with the highest mortality in Central America, close to 40% of all deaths occur in children younger than 5 years old.[62]

Since an analysis of infant mortality is the keystone for designing interventions to improve children's survival and health, infant mortality will be examined in the section on children's health conditions. This discussion will only illustrate one aspect of the inequalities in death in infancy and living conditions in Latin American countries: urban or rural residence.[63]

The apparent model of change in the urban-rural differential of mortality is the following: If a given country's conditions for infant survival are quite unfavorable, they prevail in both cities and rural areas. Consequently, death rates are high for the entire country, and rural mortality is only slightly higher than urban mortality. When conditions begin to improve, they do so first in the urban sector, and this decrease in urban mortality, which predates and outpaces rural decreases, widens the gap in infant survival between the two areas. At a more advanced stage, mortality decreases extend to the rural population; the gap between the two areas closes, and mortality in both areas drops.

[62]H. Behm and A. Robles, *La mortalidad en la niñez en Centroamérica, Panamá, y Belice, 1970–1985,* Series OI/1003 (San José: UNICEF, CELADE, and PAHO, 1988).

[63]In countries with incomplete vital statistics, the omission tends to be greater for rural populations, leading to an underestimation of these contrasts in rates based on registries. Indirect estimates of infant mortality based on census and survey data are therefore used in the analysis.

TABLE 25

Deaths to be prevented in 1990, by cause, to attain specific goals in life expectancy at birth in the year 2000, in selected age groups and countries.

Cause	Deaths (thousands)		Excess deaths	
	Actual	Model	Number	Percentage
Guatemala: 0–4 years. Goal: life expectancy at birth of 70 years.				(50.6%)[a]
All causes[b]	34.4	17.0	17.4	100.0[c]
1	21.2	3.8	17.4	88.3
2	0.0	0.3	−0.3	...
3	0.0	0.3	−0.3	...
4	8.7	6.4	2.3	11.7
5	0.3	1.0	−0.7	...
6	4.1	5.1	−1.0	...
Mexico: 15–39 years. Goal: life expectancy at birth of 75 years.				(54.2%)[a]
All causes[b]	92.7	42.5	50.2	100.0[c]
1	8.3	1.5	6.8	13.4
2	5.5	5.8	−0.3	...
3	7.0	4.5	2.5	4.9
4	0.0	0.0	0.0	0.0
5	50.0	22.4	27.6	54.5
6	22.0	8.3	13.7	27.1
Argentina: 40–64 years. Goal: life expectancy at birth of 75 years.				(29.9%)[a]
All causes[b]	68.0	47.7	20.3	100.0[c]
1	3.3	1.8	1.5	7.0
2	18.3	14.2	4.1	19.2
3	28.7	16.0	12.7	59.6
4	0.0	0.0	0.0	0.0
5	5.0	6.0	−1.0	...
6	12.7	9.7	3.0	14.1

[a]Percentage of total deaths in excess according to the model.
[b]Broad cause groups:
1: Communicable diseases (001–139, 320–322, 460–466, 480–487).
2: Neoplasms (140–239).
3: Diseases of the circulatory system (390–459).
4: Certain conditions originating in the perinatal period (760–779).
5: External causes of injury and poisoning (E800–E999).
6: All other diseases (rest of 001–779).
[c]The excess distribution is based on the sum of deaths whose actual number exceeds the model's.
Source: Tables 19 and 24.

Table 26 shows the estimates of infant mortality by urban and rural areas for some Latin American countries. All the countries show an excess rural mortality, although its extent varies considerably. In Bolivia, Haiti, and Peru, where mortality is still high, the difference in rates is significant (38 to 47 points). Given that these countries also have an excessive urban mortality, rural rates are high and, in recent years, even exceeded 100 per 1,000. In general, estimates show that, even in countries with very high mortality, rate decreases affect both urban and rural populations and that the gap tends to diminish, as seen in Ecuador, Guatemala, and Peru. Considerable excesses persist, however. As for countries that are farther along in their transition to a lower infant mortality (Colombia, Costa Rica, Cuba, and Panama), this progress has spread to the entire population, so that the urban-rural contrast in infant mortality has been reduced to 1 to 7 points, and, consequently, the absolute decreases have been greater in the rural population.

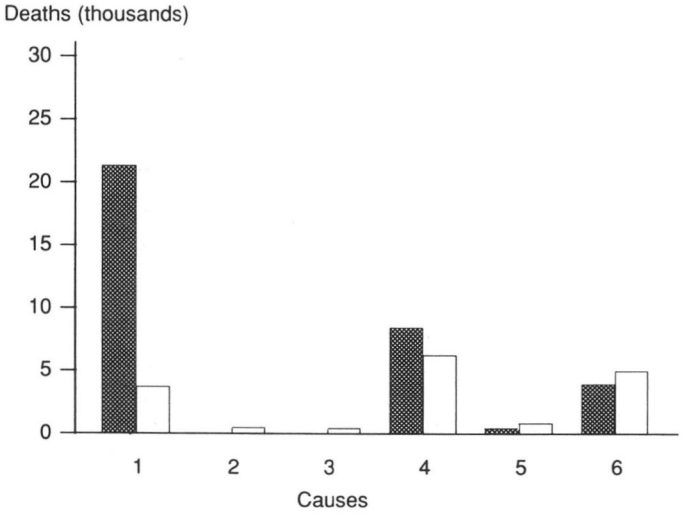
The section on population pointed out that the rural population's growth is low and decreasing, and that urbanization in Latin America is pronounced. Despite this situation, excess infant mortality in rural areas continues to hold special significance for the health sector for various reasons. First, the rural population obviously constitutes the majority (or at least remains numerically significant) in those countries where health conditions are worst, as is the case in some Andean and Central American countries. Furthermore, as was shown in that section, the extent of rural poverty in those countries is considerable; their decreases in rural fertility are at a very early stage and their fertility rates are higher in rural than in

FIGURE 5

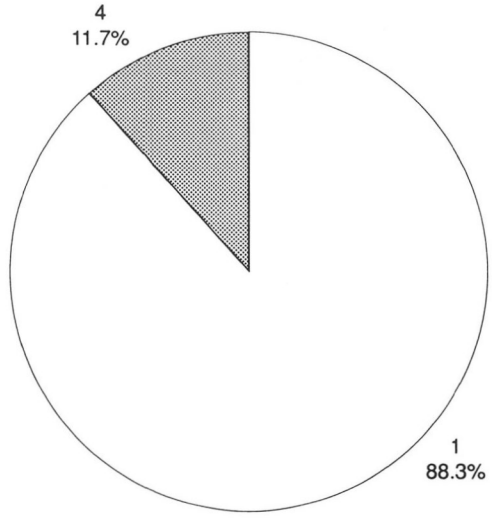
Deaths to be prevented in 1990, by cause, to attain specific life expectancy goals in the year 2000, for selected age groups and countries.

GUATEMALA, 0 to 4-year age group

Number of deaths, actual and according to model

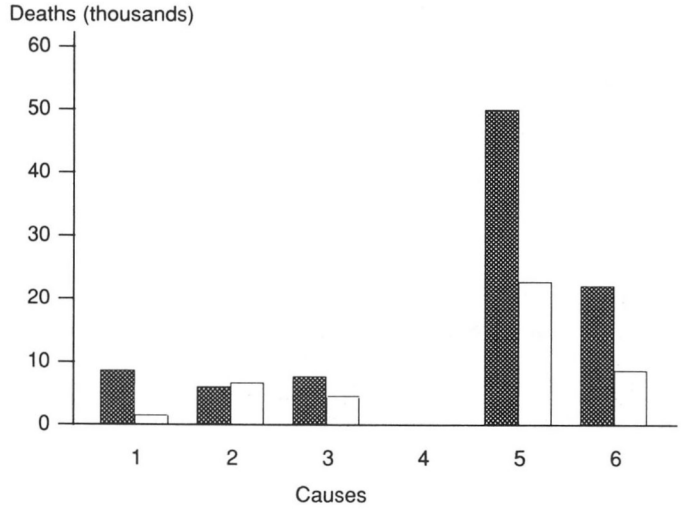


Distribution of deaths to be prevented

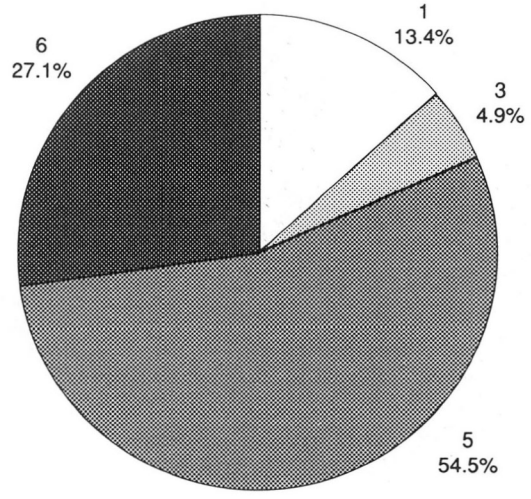


MEXICO, 15 to 39-year group

Number of deaths, actual and according to model



Distribution of deaths to be prevented



Actual

Model

Cause groups (ICD-9)

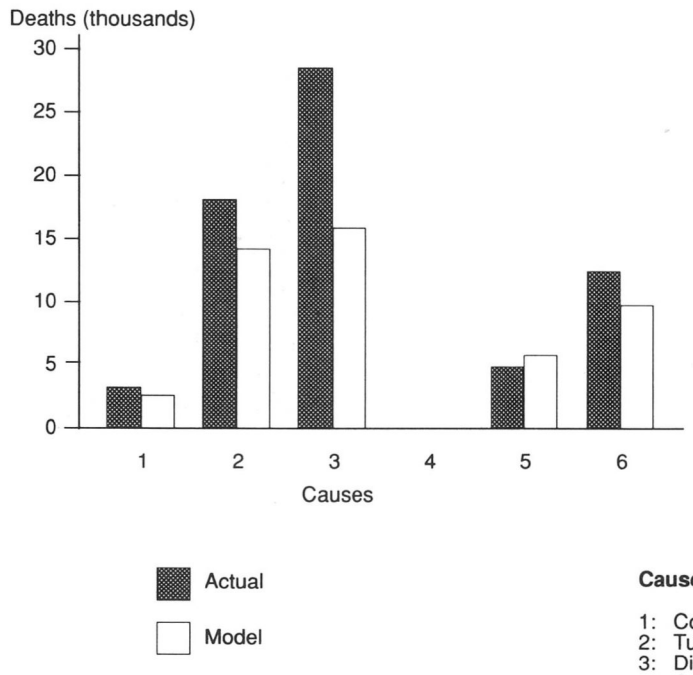
1: Communicable diseases (001-139, 320-322, 460-466, 480-487)
2: Tumors (140-239)
3: Diseases of the circulatory system (390-459)
4: Certain conditions originating in the perinatal period (760-779)
5: External causes of injury and poisoning (E800-E999)
6: All other diseases (rest of 001-779)

FIGURE 5 (cont.)

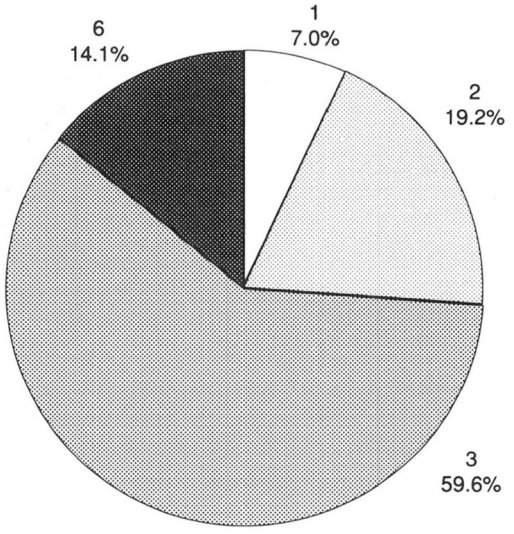
Deaths to be prevented in 1990, by cause, to attain specific life expectancy goals in the year 2000, for selected age groups and countries.

ARGENTINA, 40 to 64-year age group

Number of deaths, actual and according to model



Distribution of deaths to be prevented



Cause groups (ICD-9)

1: Communicable diseases (001-139, 320-322, 460-466, 480-487)
2: Tumors (140-239)
3: Diseases of the circulatory system (390-459)
4: Certain conditions originating in the perinatal period (760-779)
5: External causes of injury and poisoning (E800-E999)
6: All other diseases (rest of 001-779)

Source: Table 25.

urban areas. This explains why in a study of Central American countries (see footnote 62), for example, it was found that 45% to 71% of births occurred in rural communities; these newborns, exposed to an infant mortality that is generally high in these rural populations, generated 50% to 77% of the national deaths in infants under 1 year old. Undoubtedly, this constitutes one of the major components of these countries' high infant mortality, which holds back greater nationwide progress. The substantial decrease in infant mortality recorded in Costa Rica during the 1970s occurred when mortality rates in rural populations, which had remained high, dropped dramatically because of the extension of the rural health program to the most scattered communities.[64]

On the other hand, the process of urbanization is pronounced in Latin America, the urban population constitutes the majority in many countries (especially in those with lower infant mortality), and there is an overall trend toward concentrating in a main city. Table 27 shows that in one group of Latin American countries, regardless of their specific mortality levels, the lower mortality rates in the urban population reach their lowest levels in the metropolitan area or in the major cities. In these cities, and especially in the capital—which is the seat of political power—public services, trade, industry, and "modern life" are often concentrated; in addition, urban living partly remedies the problem of physical access to health services. These favorable conditions do not preclude persisting excesses in urban child mortality, which can be very significant, as Table 27 shows. The extent of both urban poverty and "marginal" populations, described in the section on population, means that differences in infant mortality by social groups may be considerable in the urban environment. In Guatemala City in 1976, mortality in infants under 2 years old was 113 per 1,000 among children of illiterate mothers who came from homes of

[64]L. Rosero, "Determinantes del descenso de la mortalidad infantil en Costa Rica," in *Demografía y epidemiología en Costa Rica* (San José: Costa Rican Demographic Association, 1987).

TABLE 26

Infant mortality by urban and rural area, in selected Latin American countries, 1970–1986.

Country	Year	Rate (per 1,000)			Rural excess
		Total	Urban	Rural	
Bolivia	1962	163	143	176	33
	1973	152	127	171	44
	1980	119	100	138	38
Haiti	1970	128	97	141	44
	1980	107	77	123	46
Peru	1961–1970	113	95	171	76
	1970–1975	114	74	158	84
	1981–1986	76	54	101	47
Honduras	1960	130	122	135	13
	1970	115	92	119	27
	1980	75	65	85	20
Nicaragua	1982–1983	83	67	98	31
Dominican Republic	1978	75	78	72	−6
	1986	68	69	66	−3
Ecuador	1972–1976	97	78	115	37
	1977–1981	72	52	91	39
	1982–1986	58	52	64	12
Guatemala	1971	104	89	119	30
	1977–1987	79	65	84	19
El Salvador	1971	110	91	118	27
	1981	81	72	91	19
Mexico	1984	47	30	73	43
Colombia	1971–1975	62	57	70	13
	1976–1980	47	46	50	4
	1981–1986	33	33	34	1
Uruguay	1975	47	41	51	10
Panama	1969–1971	47	33	58	25
	1983–1985	26	22	29	7
Costa Rica	1970	68	50	78	28
	1981	20	17	22	5
Cuba	1973–1975	29	26	31	5

Source: CELADE, 1988.

salaried manual laborers, in contrast to 33 per 1,000 among children of middle-class women with secondary education.[65] In 1976 in Panama City, which is at a more advanced stage, the widest gap between social groups was 28 versus 12 per 1,000.[66]

Table 27 also shows the diversity in the dynamics of infant mortality according to the countries' different geographic contexts. In Bolivia, a country of high mortality, the 1961–1973 reduction was felt only in the major cities. In Honduras, on the other hand, advances tended to be more generalized. In Costa Rica, Guatemala, and Panama, the greatest absolute decreases were seen in the smaller urban centers and in the rural sector, which had populations with higher mortality.

In countries with a higher infant mortality, the extent of the rural problem requires that the health system strengthen its weakest part, that is, that it deal with the extremely deficient living standards that restrict the efficacy of its programs, and, in several countries, that it adapt to the culture of significant indigenous populations. These requirements must be reconciled with providing

[65] H. Behm and E. Vargas, *Guatemala: diferencias socioeconómicas de la mortalidad de los menores de dos años, 1968–1976* (San José: Ministry of Economics, Directorate General of Statistics, Republic of Guatemala, and CELADE, Costa Rica, Series A/1044, 1984).

[66] H. Behm and L. Modes, *Panamá: la mortalidad infantil según variables socioeconómicas y geográficas, 1966–1976* (San José: Ministry of Planning and Economic Policy, Republic of Panama, and CELADE, Costa Rica, Series A/1043, 1983).

TABLE 27

Infant mortality by degree of urbanization in selected Latin American countries, 1960–1980, rates per 1,000.

Country	Year	Urban			Rural		
		Metropolitan areas, large cities	Intermediate cities	Other urban	Total	Concentrated	Scattered
Bolivia	1973	114	...	137	171	...	...
Peru	1971–1975	46	...	88	158	...	...
Honduras	1960	108	...	126	135	...	...
	1980	50	...	64	73	...	...
	Reduction	58	...	62	62	...	...
Guatemala	1968	72	102	116	...	119	127
	1976	61	80	93	...	99	101
	Reduction	11	22	23	...	20	26
Uruguay	1975	41	...	47	51	...	...
Paraguay	1975–1980	40	46	60	61	...	...
Panama	1968	29	39	48	...	54	78
	1976	13	28	30	...	34	48
	Reduction	10	11	18	...	20	30
Costa Rica	1970	46	57	54	78	...	...
	1981	16	17	18	22	19	23
	Reduction	30	40	36	56	...	...

Source: CELADE, 1988.

care for a growing urban population that also lives in precarious conditions.

Countries in which infant mortality has decreased most are also the most urbanized, and their problems are predominantly (although not exclusively) urban. These countries face a relentless growing demand for services and a slower progress that requires a more complex health system organization to achieve greater advances. The problem is partially rooted in persistent differences in childhood survival between social groups, which, though smaller, are still important and concentrate mortality excesses among less privileged social sectors.

The gaps in mortality levels among national population groups assume greater importance than the differences between the countries. If the required information were available, an epidemiological map of mortality could be developed which considered differences within the countries; this map would surely show that a majority of the Latin American population, composed of lower socioeconomic groups, is still clearly exposed to excessive mortality in all age groups because of problems that should already have been overcome.

An analysis of mortality does not fully evaluate the health situation. Nevertheless, the analysis presented above underlines the enormous challenge that Latin American societies face if they want to approach the goals and objectives for attaining health for all by the year 2000—in other words, if they want to raise their health standards and reduce existing inequities among and within the countries. The health sector is not alone in confronting this challenge, particularly since many existing problems cannot be lessened—much less solved—without the combined efforts of most of the State's sectors and the total support of all of society.

Environmental Health

The close relationship that exists between health and environmental conditions is drawn into focus by the critical socioeconomic changes that are occurring in the Region. Due to shortcomings in the fulfillment of basic sanitary needs, in many countries diarrheal and parasitic diseases are a leading cause of high mortality and morbidity among certain population groups, especially children. At the same time, industrialization and urban development in these countries elevate health risks because they expose the population to toxic chemicals that contaminate the air, water, soil, and food.

The urban population of Latin America and the Caribbean is increasing by about 2.8% and 2.5% per year, respectively. In 1985 there were 251 cities with more than 100,000 inhabitants; it is estimated that by the year 2000 some 448 cities will have more than that number,

including 96 with one million or more inhabitants and 15 with more than four million. Moreover, Latin America is expected to have some of the largest urban centers in the world in the next ten years.

Degrading living conditions have become a typical feature of large cities, especially on the peripheries and in old downtown areas. Families that migrate to the cities not only fail to find the expected employment but are also unable to find a suitable place to live, thus increasing the housing problem that had already become acute due to the current economic crisis. Living conditions are poor in the districts these families occupy, especially with regard to water supply and sanitation, including solid waste disposal. The situation is getting worse as the population density increases and public services continue to fall short.

Economic progress and rapid advances in technology have led to the emergence of industries and products whose effects on health and the environment have not yet been fully assessed. The production and use of chemical substances considerably augment the scope of environmental health problems. Likewise, the increased accidents, noise, and congestion also affect environmental health. Since the countries are committed to economic development to meet the basic needs of their people, the upward trend in environmental problems will clearly continue.

Not only is the population growing, but so are people's demands for a better quality of life and the pressure for greater use of natural resources and increased farm and industrial production. At the same time, the problems of air, water, soil, and food contamination are on the rise, and their solution becomes more urgent every day. As industrial production increases and diversifies, more intensive use is made of toxic chemical substances, calling for new standards of safety and industrial hygiene.

Rural areas must continue to receive special attention, because they have inadequate access to a suitable water supply, excreta disposal, improved housing, and health education. Farm workers must be informed of the risks involved in handling chemical substances and taught to use them in an appropriate and safe manner.

Despite the incomplete nature of information on environmental deterioration in Latin America and the Caribbean, data do exist to indicate that the population's health has been affected by high levels of exposure to chemical substances and environmental contamination (Table 28). There are also clear indications of ecological damage on several fronts. For example, the excessive production and use of pesticides that is affecting individuals is, at the same time, contaminating the soil and surface water (and possibly underground water). Pesticide overuse also causes potential problems for the export of farm products. Moreover, because some vectors have become resistant to pesticides, the incidence of certain diseases, such as malaria, is on the rise.

Health and Work

More than a third of the Latin American population works. Based on figures gathered from several countries, it has been calculated that 43% of the Region's workers lack access to health services; most of the rest benefit from limited services, mostly curative; and only 9% receive comprehensive health care, meaning that, in addition to curative and rehabilitative care, the health services are geared toward prevention and the system provides monetary compensation if workers fall victim to work-related accidents or occupational diseases.

To appreciate the magnitude of workers' health problems, all the pathologies that have a confirmed association to work, as demonstrated by epidemiological studies, must be reviewed. Moreover, the number of persons who do not receive health care because they are unemployed or underemployed, work in very small businesses, or work in the unofficial sector must be borne in mind in analyzing the situation in the Region.

The activities performed by the unofficial sector of the labor force in the countries of the Americas is primarily drawn from active population groups affected by poverty and, therefore, more prone to the effects of unhealthful and unsafe working conditions. At the same time, a large portion of this population is beyond the reach of social security and health services.

Inadequate health care for workers leads to low productivity and high absenteeism, early aging, a shorter active lifespan, and poor quality of life. These conditions affect not only the workers but also their families, contributing to increased poverty and the worsening of the economic situation in the Region's countries. Because of rising medical costs, people tend to delay seeking care for pathological conditions, which can lead to temporary or permanent disability and the subsequent need for employee compensation.

When they become ill at an early age, workers must depend for a longer time on curative medical services and rehabilitation. Workers may be unable to pay for lengthy treatments—which can be very expensive as well as painful—especially when they are no longer associated with an official line of work or covered by social security.

Child labor continues to be a very serious problem. Children are more vulnerable than adults to fatigue and work-related injury and diseases because of their inexperience and because, since they are more nimble, they are used to perform more hazardous tasks. In addition, the tools and machinery that they use are not suited to their size. Since they are easy to fire, they are the preferred candidates for certain tasks. Moreover, they do not have access to health benefits or social security coverage. In Latin America more than 10 million children under 14 years of age work, which prevents them from studying

TABLE 28

Daily inhalation of pollutants of exterior and interior air, Latin America and the Caribbean, 1987.

Pollutant	Exterior[a]		Interior[a]	
	Concentration ($\mu g/m^3$)	Inhalation (μg/day)	Concentration ($\mu g/m^3$)	Inhalation (μg/day)
Formaldehyde	3	4.5	50	675
Toluene	5	7.5	75	1,012
Inhalable particulates	30	45.0	80	1,080
NO_2	5	7.5	20	270

[a]Total respirated volume—15 m^3/day; exterior—1.5 m^3/day; interior—13.5 m^3/day.

Source: J.A.J. Stolwijk. The determination of health effects of indoor air pollution. In *Proceedings of the 4th Conference on Indoor Air Quality and Climate.* Berlin, 1987.

and succeeding professionally. Their work exposes them to risks that cause, aggravate, or initiate a chain of pathological conditions that may afflict them for long periods in their lives, while they struggle to subsist and bear hard burdens.

In addition to continued attention to more traditional environmental health programs, broader action in this area must include the following: better identification of the relationship between environmental factors and their comprehensive effect on the health and welfare of the population; support for and fostering of the countries' sustained development; monitoring of environmental quality to safeguard the health of the most needy population groups; greater attention to protection of natural resources, such as water, air, and soil, which play important roles in disease transmission and influence other health problems; and attention to worldwide concerns, such as depletion of the ozone layer, acid rain, global warming, and other environmental problems that may substantially affect the health of the Region's population.

PART II

HEALTH STATUS

HEALTH PROBLEMS OF SPECIFIC GROUPS

HEALTH OF CHILDREN AND ADOLESCENTS

Children's health is one of the most critical problems in the Region of the Americas. It is critical both because of the magnitude of the problem, since close to 500,000 children under 5 years of age die annually, and because defined and proven strategies now exist that could markedly alter this state of affairs.[1]

The Region's countries present a special situation with regard to children's health conditions. Added to the problems typical of underdevelopment (malnutrition, infectious diseases, low coverages of basic health activities) are problems that emerge in more developed societies (accidents, perinatal diseases, psychosocial maladjustments, environmental pollution). This situation results from complex factors that are related to the type of development taking place in these societies, which is characterized by unequal distribution of income; high demographic growth rates that outpace the expansion of public services, mainly in such areas as education and health; and an increase in the marginal urban population because of mass migration from the countryside to cities.

Although an association has been observed between increased per capita income and lower child mortality,[2] infant and preschool-age death rates continued to decrease in almost all the countries of Latin America and the Caribbean in the 1980s, despite the serious economic crisis affecting the Region.[3] Nevertheless, reduction in death rates—which still remain high—has slowed, and certain specific causes of illness related to poverty have increased. Thus, it is simplistic to conclude that per capita income is the only factor determining the elevated levels of infant mortality. Basic health interventions (immunization, oral rehydration, breast-feeding, monitoring of growth and development, family planning) should be recognized as having made major contributions to the favorable evolution of infant mortality indicators.[4,5]

Demonstrating this evolution by means of available information is often a complex task. Reliable and timely morbidity data are still not available in most countries, except regarding vaccine-preventable diseases, about which increasingly complete information exists. As a result, the magnitude of the incidence of major childhood diseases can only be known or estimated through special surveys. In turn, available mortality data reflect a degree of underrecording that varies depending on the country and that is accentuated for infants less than 1 year old. The processing of mortality data is often slow, which means that the information available is not timely and may reflect a situation several years in the past.

Because of problems and restrictions with respect to the validity and reliability of these data for evaluating the child health situation—especially in developing countries—great caution in their interpretation is necessary. Mortality data, which despite their limitations are available for most of the countries, in some cases show a lack of correlation with other indicators of development and therefore should be used circumspectly, particularly when they are assigned political significance or serve as a quality-of-life indicator.[6] In the future, more work will probably have to be done with morbidity data and positive indicators related to biological, psychological, and social growth and development.

Within these limitations, this chapter begins by presenting a general analysis of available data on mortality in infants and children aged 1 to 4 years in the Region's countries and reviews the available information on mortality and morbidity from the most important specific health problems that affect children, such as diarrhea, acute respiratory diseases, and vaccine-preventable diseases. The health situation of the population aged 5 to 9 years and of adolescents is reviewed in subsequent sections.

[1] Pan American Health Organization, *Condiciones de salud del niño en las Américas,* Scientific Publication No. 381 (Washington, D.C., 1979).

[2] D. Morris, *Measuring the Conditions of the World's Poor* (New York, 1979).

[3] *Child Survival: Risks and the Road to Health* (Columbia, Md.: Institute for Resource Development, 1987).

[4] Pan American Health Organization, *Health Conditions in the Americas, 1981–1984,* Scientific Publication No. 500 (Washington, D.C., 1986).

[5] E. N. Suárez Ojeda, and J. Yunes, *La mortalité infantile aux Ameriques: effets des soins de santé primaires,* Cahier No. 108 (Paris: Presse Universitaire de France, 1985).

[6] Pan American Health Organization, *Salud del niño en las Américas* (Washington, D.C., 1986).

Infant Mortality

Infant mortality is a major problem for the health sector in developing countries. Infants are especially vulnerable to biological effects of an adverse physical and social environment, so that the excess mortality produced by such an environment tends to concentrate in infancy. On the other hand, the most frequent and lethal diseases among this age group are, by and large, avoidable or treatable.

Estimates of the infant death rate during selected five-year periods from 1950 to 1990, and projections for the year 2000, are shown in Table 1, in which the countries are ranked within each subregion according to the magnitude of this rate in 1985–1990.

TABLE 1

Infant mortality rates in 1950–1955, 1970–1975, 1985–1990, and projections for the year 2000, and births in 1985–1990, by subregions and countries listed according to mortality level.

Countries	Mortality rate (per 1,000)			Five-yearly decrease		Rate year 2000	Births 1985–1990
	1950–1955	1970–1975	1985–1990	1950–1970	1970–1985		(1,000s)
Latin America	127	82	55	11.2	8.9	41	12,077
Bolivia	176	151	110	6.1	13.8	69	293
Haiti	220	135	97	21.2	12.8	72	213
Peru	159	110	88	12.1	7.4	63	721
Total							1,227
Honduras	196	101	68	23.8	10.7	49	189
Nicaragua	167	100	67	16.8	11.0	42	149
Dominican Republic	149	94	65	14.0	9.5	46	213
Total							551
Brazil	135	91	63	11.1	9.1	48	4,086
Ecuador	140	95	63	11.1	10.5	49	328
El Salvador	151	99	60	13.0	13.0	36	182
Guatemala	140	95	59	11.4	12.1	37	350
Total							4,946
Paraguay	73	55	49	4.7	2.0	44	139
Mexico	114	71	43	10.7	9.4	28	2,438
Colombia	123	73	40	12.5	11.1	33	861
Venezuela	106	49	36	14.4	4.2	30	569
Total							4,007
Uruguay	57	46	24	2.8	7.3	16	54
Panama	93	43	23	12.6	6.7	19	61
Argentina	66	49	22	4.2	9.0	17	669
Chile	126	70	18	14.1	17.3	15	301
Costa Rica	94	52	17	10.3	12.5	11	80
Cuba	81	38	13	10.5	7.7	10	181
Total							1,346
Non-Latin Caribbean	83	40	21	10.8	6.3	15	146
Guyana	93	56	30	9.2	8.7	21	25
Suriname	89	49	30	10.0	6.3	21	10
Total							35
Trinidad and Tobago	79	30	20	12.2	3.3	14	30
Jamaica	85	36	18	12.2	6.0	14	63
Martinique	65	35	13	7.5	7.3	10	6
Guadeloupe	68	42	12	6.5	10.0	8	7
Barbados	61[a]	27	11	—	−7.3	8	5
Total							111
North America	29	18	10	2.8	2.7	7	4,052
United States of America	28	18	10	2.5	2.7	7	3,687
Canada	36	16	7	5.0	2.3	7	365

[a]1955–1960.
Sources: CELADE, 1989, and United Nations, 1989.

The estimates used are from mortality tables prepared for the purpose of making population projections. They are based on registry information if it is trustworthy, or on indirect estimates if it is not. Estimates for the Latin American countries for the five-year period 1985–1990 were reviewed using the latest available studies. For countries with good registries, the rates used were those calculated from the registries, if they differed from the estimated rates.

It should be noted that the rates estimated for 1985–1990 and later five-year periods are not based on hypotheses about the future course of infant mortality; rather, the life tables are constructed on the basis of hypotheses about the future evolution of life expectancy at birth. As a result, they do not necessarily represent the exact course infant survival has taken in recent years in each country or the changes that have occurred in some of its determinants. Nevertheless, these estimates are a useful reference point for a discussion of the prospects for achieving the targets established for infant mortality within the goal of health for all by the year 2000.

The data reveal that the situation differs considerably in the three major subregions of the Americas. In 1989–1990, the infant mortality rate in Latin America (55 per 1,000 live births) is six times higher than that in the more developed countries of North America (10 per 1,000) and 2.6 times higher than the rate in the non-Latin Caribbean (21 per 1,000). Thus, Latin America has now achieved the level of infant survival that the Caribbean subregion had attained at the start of the 1960s. This comparison is important because three-quarters of the approximately 16 million annual births in the Americas occur in Latin America.

Nevertheless, conditions in the less-developed countries of the Americas, taken together, are not as unfavorable as in other developing regions of the world. For Africa and South Asia, the infant mortality rate estimates for 1989–1990 are 102 per 1,000 and 93 per 1,000, respectively, revealing an excess mortality that is greater than that of Latin America (United Nations, 1989).

Furthermore, analysis of past trends shows that substantial progress was made during the second half of this century, although the three subregions are in considerably different phases of their transition toward greater infant survival. Rates in Latin America fell from 127 to 55 per 1,000 live births, averaging 10 points of decrease per five-year period, a pace that recently has moderated somewhat. The non-Latin Caribbean began with a rate of 83 per 1,000 in 1950–1955; it had been reduced by half in 1970–1975 and has since fallen to 21 per 1,000, a level that only three Latin American countries (Chile, Costa Rica, and Cuba) have reached at present (see Table 1).

North America is in a quite different stage of the process; the data for the subregion mainly indicate the course of infant mortality in the United States of America. The 1950–1955 level was 29 per 1,000; only small gains were made (one to two points every five years) in the 1950s, but advances accelerated during the 1960s and 1970s. The rate for 1985–1990 is estimated at 10 per 1,000 live births, a higher rate than that of countries that are in the forefront in reducing infant mortality, which average 6 per 1,000 (United Nations, 1989).

The gap in the infant mortality level between Latin America and North America diminished substantially in the last 40 years, from a difference of almost 100 to 46. This achievement is notable, especially taking into account the repeated periods of economic and social crisis that have occurred during that time. Nevertheless, the magnitude of the difference to be surmounted is also considerable. If present trends persist into the future, the infant mortality rate that Latin America may reach in the period 2020–2025, that is, almost 35 years from now, would be the same as the United States achieved 30 years ago, in 1955–1960—a lag of more than half a century. It could be argued that advances are being made more rapidly today than in the past, but this apparently is not the case for the entire subregion. In the United States, the infant mortality rate decreased from 100 to 56 per 1,000 in the 20 years between 1915 and 1935 (Vital Statistics, U.S.A., 1962), while in Latin America the rate fell from 102 to 55 per 1,000 in 25 years, between 1960–1965 and 1985–1990. Consequently, the task of hastening progress in infant survival in the developing countries of the Americas cannot be postponed.

Analysis at the subregional level conceals significant differences among the countries that are in transition toward lower infant mortality. In 1985–1990, 10 of the 20 countries in Latin America have high infant mortality, with rates equal to or greater than 60 per 1,000 live births. It should be noted that 55% of the annual births in the subregion occur in these high-risk countries, which include Brazil, the country with the largest population in Latin America and the site of the most rapid industrial development in the subregion.

As shown in Table 1, the countries with the highest infant mortality are Bolivia, Haiti, Peru, Honduras, Nicaragua, and the Dominican Republic. In 1950–1955, all those countries had high rates, ranging from 149 to 220 per 1,000. The first three countries vary with respect to the drop in mortality, but it is not very great (except in Haiti), and in two of them (Bolivia and Haiti) the decrease tends to stall when the rates reach about 100 per 1,000. If the projections are fulfilled, these three countries would have infant mortality rates in the year 2000 of 63 to 72 per 1,000—more than double the target for the year 2000 of 30 per 1,000. It is estimated that almost 10% of the births in Latin America occur in these high-

risk countries. Figure 1 shows differential trends in selected countries in each group, and Bolivia illustrates the situation in this first group.

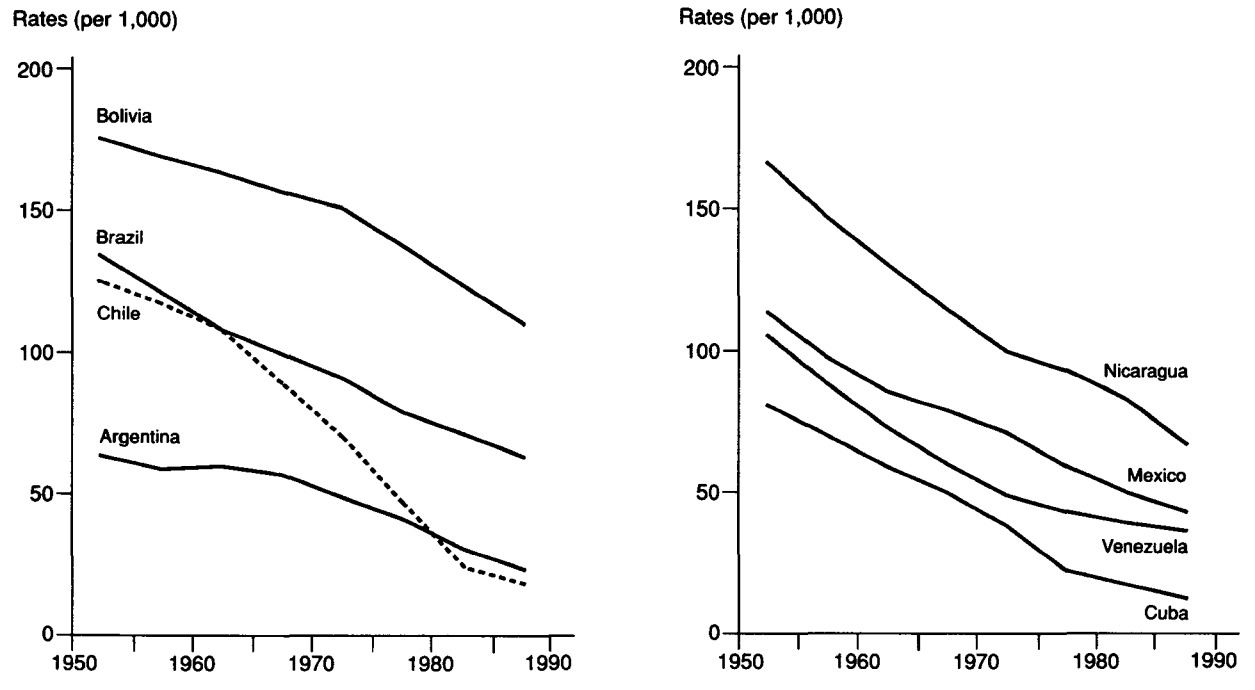
The second three countries with initially high mortality (Honduras, Nicaragua, and the Dominican Republic) have achieved more sustained and homogeneous advances between the five-year periods studied, and recently have shown only a slight moderation (except Honduras) in the speed with which mortality is falling. At the beginning of the 1970s, they had attained rates of 100 per 1,000, and the rates are now between 65 and 68 per 1,000. None of these countries is projected to achieve the goal established for the year 2000, but they will be in excess of the goal by less (rates of 42 to 49 per 1,000) than the first group (Table 1).

The group composed of Brazil, Ecuador, Guatemala, and El Salvador is important because it includes the Latin American subregion's most populous country; 41% of the subregion's births occur in this group. These countries averaged an infant death rate of 145 per 1,000 in 1950–1955, which they managed to reduce to approximately 95 per 1,000 in 1970–1975. Guatemala and El Salvador maintained the rate of decrease during the following years, while the fall was less striking in Brazil and Ecuador. The first two countries could thus achieve rates of 36 or 37 by the year 2000, thereby being slightly in excess of the target. Brazil and Ecuador, however, are projected to achieve rates of 48 or 49 per 1,000, a much greater excess. Figure 1 shows the contrast between Brazil and Chile, which had similar mortality rates in 1960–1965. Chile's rapid and sustained advances have enabled it to join the countries that are in the vanguard in terms of reducing infant mortality.

The trend in the rates in the following group (Paraguay, Mexico, Colombia, and Venezuela) is also important because the inclusion of Mexico means that a third of the subregion's births occur in this group. With the exception of Paraguay, these countries were in a more advanced stage of transition than the former group and had rates that averaged approximately 115 per 1,000 in 1950–1955. Sustained advances in Colombia and Mexico lowered their rates to 40 and 43 per 1,000, respectively,

FIGURE 1

Infant mortality in selected countries of Latin America, 1950 - 1990.



Source: CELADE (1989) and United Nations (1989).

today, and it is expected that they will achieve the goal established for the year 2000 or come quite close to it. The evolution of infant mortality rates in Venezuela has been even more favorable, although the rapidity of the decrease has moderated, and the rate projected for the year 2000 is 30 per 1,000 (Table 1).

The six remaining Latin American countries are characterized by having already exceeded the goal fixed for the year 2000, with average infant mortality rates in 1985–1990 of only 15 to 24 per 1,000. However, only 11% of births in Latin America occur in this group. This present favorable infant survival situation results from quite different historical courses. Argentina and Uruguay (together with Paraguay, from the previous group) were in the vanguard in 1950–1955, with rates of 57 to 73 per 1,000, a level that the Latin American average would not reach until 30 years later. The 1950s and 1960s were decades of significant stagnation of progress (see Argentina in Figure 1). In the case of Paraguay, the decline has barely been maintained, and consequently the rate in the year 2000 is projected to still be as high as 44 per 1,000. Fortunately, in the other two countries the decline has again accelerated and their projected rates in the year 2000 are 16 and 17 per 1,000.

The above-cited examples suggest that even in countries where the decline in infant mortality has been reasonably acceptable, socioeconomic deterioration and deficiencies in the health system may produce a prolonged interruption in such advances. Concern over the negative impact of the economic crisis and the foreign debt payment problem is therefore justified, since these factors, together with discriminatory social and economic policies, are causing the deterioration in living standards in Latin America and restrictions on the resources available for the health sector.

Costa Rica, Cuba, and Panama form a group of countries that in 1950–1955 was more advanced than some other groups but which still had high mortalities (rates of 84 to 91 per 1,000). These countries are characterized by significant reductions that have slowed only slightly in recent years. Cuba and Costa Rica are in the forefront of child survival progress in Latin America. Rates of 10 and 11 per 1,000, respectively, are projected for them by the year 2000, a difference of only 3 or 4 points from the projected rates for the United States and Canada. Chile was farther behind in 1950–1955 (a rate of 126 per 1,000). The reduction there was the most marked of any of the remaining countries, speeding up since 1960–1965. Chile, Costa Rica, and Cuba are not among the countries with the greatest natural resources, nor do they have the highest levels of industrial development. The characteristics they share are health systems that were organized early and economic and social policies that were oriented toward extending benefits to the whole population.

Certain demographic characteristics in Latin America have an especially significant relationship to the disparities in infant mortality that have just been summarized. The countries with high infant mortality are often those with a young population and high fertility rates. This demographic situation means that a larger proportion of the population is exposed to greater risks, and thus higher fertility will negatively affect infant survival. In most of the ten countries whose infant death rates are higher than 60 per 1,000, the crude birth rate exceeds 44 per 1,000 and the proportion of the population under 5 years old is 15% or more. According to available estimates, these ten countries with high infant mortality, in which 56% of the births occur, account for 70% of total deaths in children under 1 year of age in Latin America.

The infant mortality situation in the countries of the non-Latin Caribbean is much more favorable and also more homogeneous (Table 1). In most, the rates were between 65 and 85 per 1,000 in 1950–1955, were close to 35 per 1,000 two decades later, and are below 20 per 1,000 today, according to published estimates. In Guyana and Suriname, the mortality was initially somewhat greater and the reduction somewhat less intense; nonetheless, these countries also have achieved in 1985–1990 the goal established for the year 2000, a situation similar to the Latin American countries in which infant mortality reductions are more advanced. It should be noted that a 1985 study[7] found that estimates of infant mortality obtained through fertility surveys in Trinidad and Tobago, Guyana, and Jamaica were consistently higher than those taken from vital statistics registries, which suggests underrecording. The same has been shown in Dominica and Saint Lucia. It would be useful to study the factors that have led to earlier and more marked improvement in child survival in the non-Latin Caribbean countries, most of which are islands and remained colonies until more recently than the Latin American countries.

As the infant mortality rate was reduced in most of the Region's countries, the relative importance of the main causes of death in children less than 1 year old changed, with infectious diseases decreasing in weight and perinatal causes becoming a major problem for the health services.

Available information shows that the decline in infant mortality in the Region's developing countries was mostly attributable to reduction in the postneonatal component (Table 2), with the neonatal component decreasing less and thus becoming proportionally greater. In turn, division of neonatal mortality into early (less than 7 days of life) and late (7 to 28 days of life) reveals that

[7]E. Ebanks, "Trends in and some factors related to infant mortality in Trinidad and Tobago, Guyana, and Jamaica." Paper presented at the General Conference of the International Union for the Scientific Study of Population, Florence, Italy, 1985.

TABLE 2

Infant mortality rates and their components for countries for which that information is available, around 1978 and 1986.

Country	Mortality rate[a]				Mortality rate			
	Year	Infant	Neonatal	Postneonatal	Year	Infant	Neonatal	Postneonatal
Guatemala	1978	71.6	29.4	42.2	1984	68.5	34.5	34.0
Ecuador	1978	56.6	16.7	39.9	1987	47.7	18.8	28.9
St. Vincent & the Grenadines	1978	49.9	20.9	29.0	1986	25.2	14.8	10.4
Costa Rica	1973	45.0	21.0	24.0	1986	17.8	10.6	7.2
Suriname	1978	43.6	32.5	11.1	1985	26.7	16.8	9.9
Argentina	1980	40.8	22.2	18.6	1985	26.2	16.4	9.8
Chile	1978	38.7	18.5	20.2	1987	18.5	9.6	8.9
Belize	1978	34.0	12.3	21.7	1984	26.3	12.0	14.3
Dominican Republic	1978	31.2	16.1	15.1	1985	56.6	31.5	25.0
Panama	1975	31.0	18.0	13.0	1987	19.4	11.5	7.9
Barbados	1978	28.9	21.7	7.2	1985	17.5	14.5	3.0
Saint Lucia	1978	28.5	13.2	15.4	1985	23.0	16.3	6.7
Honduras	1978	26.9	9.0	17.9	1981	23.0	6.7	16.3
Antigua and Barbuda	1978	22.4	14.2	8.2	1984	11.5	7.1	4.4
Cuba	1978	22.3	14.5	7.9	1988	11.9	8.1	3.8
Puerto Rico	1978	20.1	15.8	4.2	1986	13.7	10.5	3.2
Dominica	1978	21.9	15.0	6.9	1985	18.8	14.7	4.1
United States of America	1978	13.8	9.5	4.3	1987	10.1	6.5	3.6
Canada	1978	12.0	8.1	3.9	1987	7.3	4.5	2.9

[a]Per 1,000 registered live births.
Source: CLAP. Publication 1036, 1989.

the most significant reductions occurred in the late component, while early neonatal mortality changed little and so became proportionally greater in all countries except Guatemala (Table 3).

The explanation for this situation is that postneonatal mortality is associated with socioeconomic factors and a harsh environment and, therefore, can be reduced through activities aimed chiefly at environmental sanitation and control of vaccine-preventable diseases, diarrheal diseases, malnutrition, and acute respiratory infections. In contrast, neonatal mortality is linked to biologic factors and hospital care; its reduction thus becomes more expensive and depends upon considerable investments aimed at strengthening highly complex hospital services. In addition, basic preventive technology that can reduce neonatal mortality is still not used widely enough in many developing countries.

In developed countries, such as Canada and the United States, in which the relative weight of infectious diseases was already low, the infant death rate was reduced thanks to the reduction of neonatal mortality. In these countries, the proportional decrease was greater for the neonatal death rate than for the postneonatal death rate.

Mortality in the first week of life is the most difficult component of infant mortality to reduce. A decrease in this component, as well as in the frequency of disabling sequelae that originate during this period, will require new strategies in the perinatal field, with activities aimed at developing and strengthening the health services and interventions directed at pregnant women and newborns.

In addition to environmental, economic, and educational factors, which have well-known and major effects on morbidity and mortality, a few medical conditions that originate during the perinatal stage are responsible for most of the illnesses and deaths that occur in that period. These causes, which are strongly associated with the three major factors mentioned above, are maternal and fetal malnutrition; ovular, fetal, and neonatal infection; premature rupture of membranes, with or without ovular infection; prematurity as a result of spontaneous (possibly pathologic) or iatrogenic (induced or cesarean) premature delivery; chronic or pregnancy-induced hy-

TABLE 3

Percentage composition of infant mortality,[a] by country, around 1978 and 1986.

Country	Percentage of mortality				Percentage of mortality			
	Year	Early neonatal	Late neonatal	Postneonatal	Year	Early neonatal	Late neonatal	Postneonatal
Argentina	1978	42.7	11.8	45.6	1985	50.7	11.9	37.4
Chile	1978	35.8	12.1	52.2	1987	41.1	10.9	48.1
Costa Rica	1973	33.0	13.0	54.0	1986	51.2	12.6	36.3
Cuba	1978	54.6	10.2	35.1	1988	50.5	17.0	32.5
Dominican Republic	1978	32.3	19.2	48.5	1985	41.8	14.1	44.1
Ecuador	1978	13.7	15.7	70.5	1987	24.3	15.2	60.5
Guatemala	1978	40.8	0.2	59.0	1984	23.5	26.8	49.7
Honduras	1978	19.3	14.2	66.5	1981	16.4	12.8	70.8
Panama	1975	45.0	13.0	42.0	1987	48.1	11.3	40.6
Puerto Rico	1978	68.1	10.9	21.0	1986	61.2	15.2	23.7
Suriname	1978	64.3	10.3	25.4	1985	45.0	17.9	37.1

[a]Per 1,000 registered live births.
Source: CLAP. Publication 1037, 1989.

pertension (toxemia with or without premature separation of placenta or placental infarcts); dystocia and iatrogenesis during delivery (due to trauma, oxytocics, anesthetics, analgesics, other drugs, amniotomy, cesarean abuse, etc.); fetal and neonatal hypoxia (umbilical cord accidents, meconium aspiration); and congenital anomalies.

Apart from acute fetal hypoxia, iatrogenic prematurity, birth trauma occasioned by incorrect delivery care, and congenital fetal anomalies, the other causes mentioned above are those chiefly implicated in low-weight births (premature newborns and those with retarded intrauterine growth). These causes are responsible for the great majority of neonatal deaths during the first week of life, for growth and development disorders, and for neurologic sequelae that may have a long-term effect on the child.

An investigation of low birthweight (less than 2,500 grams) in 59 maternity facilities in 11 countries of Latin America, coordinated by the Latin American Center for Perinatology and Human Development (CLAP), found a 9% incidence of low birthweight, with a range of 4.6% to 14.8%, and a 1.2% incidence of very low birthweight (less than 1,500 grams), with a range of 0.6% to 2.6%, among more than 300,000 consecutive births. These figures are double those reported in the developed countries and did not change in the second investigation CLAP conducted in Latin American maternity facilities between 1987 and 1989.

Also studied was the proportion of children with low birthweight who were small for their gestational age compared to preterm births adequate for their gestational age. The study found that of 11,537 low-weight live births of known gestational age, 43% were born at term (more than 37 weeks) and were small for their gestational age, 13% were born preterm (less than 37 weeks) and were small for their gestational age, and 44% were born preterm and were of adequate size or large for their gestational age.

Early neonatal mortality in the very low birthweight group is also higher in the Latin American countries. For example, at the start of the 1980s, very low birthweight infants had a specific neonatal death rate of 610 per 1,000, which was double the rate in the United States (310 per 1,000) and England (300 per 1,000) during the same period. It was also found that 78% of early neonatal deaths (first week of life) in the maternal and child health centers of Latin America were associated with low birthweight and 47% with very low birthweight. This situation has remained unchanged in most, but not all, of the countries during the 1980s. The significant contribution of low birthweight to neonatal mortality indicates that actions to prevent low-weight births will have a great impact toward reducing these death rates.

Infants with low birthweight often have grave problems adapting to extrauterine life. Serious asphyxia at birth (Apgar score of 0–3 during the first minute) is six times more frequent in low-weight newborns (13%) than in newborns whose weight is greater than or equal to 2,500 grams (2%). At the fifth minute of life, 50% of

the low-weight newborns continued to have serious asphyxia (Apgar 0–3), and only 10% of newborns with weights greater than or equal to 2,500 grams remained depressed. Similar proportions of persistence of respiratory depression were observed in mild asphyxia (Apgar 4–6) at the fifth minute of life. Low-weight newborns with mild asphyxia (Apgar 4–6) at the fifth minute of life accounted for 64% of the neonatal deaths during the first week of life. In addition, between 10% and 30% of preterm low-weight newborns experienced respiratory distress in their first hours of life because of pulmonary immaturity. Data from the investigation coordinated by CLAP revealed an overall incidence of respiratory distress of 23%, and these cases accounted for 70% of the early neonatal deaths in low-weight newborns. Among the other serious complications that may also appear are glucide metabolic disorders and a greater propensity for infections and cerebral hemorrhages.

There is a direct association between low birthweight, perinatal asphyxia, and neuropsychic development disorders with disabling sequelae in children.

Advances in knowledge about and treatment during the perinatal period brought fears that preventing the death of extremely ill infants would increase the number of children with disabling sequelae. However, studies of children who received special neonatal care reveal a more optimistic panorama and point out that the quality of care is an important determinant of later problems. During the last 25 years, application of complex technology to the specific care of very low-weight newborns produced a progressive reduction in neurologic sequelae in groups that had access to such care.

The high financial cost of the technology used in caring for low-weight newborns and lack of equity in access to services mean that only small segments of the population in underdeveloped countries benefit from the technology. Underdeveloped countries have too few resources for training enough personnel to provide such care. Budgetary restrictions also limit their ability to acquire high-cost technology and, in addition, a lack of capacity to evaluate it often results in the uncritical incorporation of equipment that does not improve perinatal health.

As noted above, one of the main causes of the high neonatal mortality in most of the Region's countries is the elevated incidence of low-weight births, which are mainly due to fetal malnutrition, premature deliveries, or both. For that reason, it is important that health services carry out activities to ensure that future mothers are healthy and that couples have their children at optimal ages during their reproductive period; that pregnancies are monitored early and adequately; that deliveries are attended in appropriate surroundings and without iatrogenesis; and that children are born at term with good weight and are guaranteed the availability of immediate care and growth and development monitoring.

The principal causes of death in countries with high infant mortality are infectious diseases, which are in second place (or even first) after perinatal conditions, displacing congenital anomalies to fourth or fifth place (Table 4). In countries with low infant death rates, on the other hand, the main causes of death are conditions originating in the perinatal period and congenital anomalies, while infectious diseases (basically influenza and pneumonia, and intestinal infections) occupy third or fourth place (Table 5).

The foregoing analysis does not completely reflect the specific patterns of the decline in infant mortality in each country, among other reasons because of the use of five-year average estimates. These modalities are examined below in a group of countries in which acceptably complete registry information is available, which also allows more detailed analysis of neonatal and postneonatal mortality. The countries examined are Chile, Costa Rica, Cuba, Guatemala, Panama, the United States of America, and Uruguay, and the period covered is approximately 1965–1985. Except for Guatemala, these countries are now in a more advanced stage of demographic transition (Table 6 and Figure 2).

Although the rates decreased markedly in all the countries selected, interesting differences are evident in both their starting level and more recent trends. Guatemala represents the situation of a country with quite high initial mortality, with a rate of 111 per 1,000 in 1970, which shows a steady decline thereafter, averaging 2.6 points annually. If this trend continues, infant mortality will be close to 40 per 1,000 in the year 2000. The problem represented by countries in this stage, which is still one of high risk for infants, is not that rates are not falling, but that the speed of the decline is insufficient. Figure 2 shows that while Guatemala reduced its rate from 97 to 71 per 1,000 between 1975 and 1985, Chile lowered its mortality from 97 to 58 per 1,000 between 1965 and 1975. It is essential that health strategies be developed that allow the reduction in infant mortality to be accelerated in countries where it is still too high and that these strategies use technology and forms of organization suited to the historical reality of these countries.

At the other extreme, in Chile, Costa Rica, Cuba, and Panama subregional low levels for mortality were achieved in a period of about 15 years. The first two countries began with a less favorable situation (rates of 70 to 80 per 1,000 in 1970), while Cuba and Panama had already reached a level of close to 50 per 1,000 at that time. In all these countries, the decline has been continuous and intense, and it has been greater in those with higher initial mortality. As a result, at the start of the 1980s the group's rates had become substantially more similar, even though they were originally quite disparate. The rates stood between 17 and 24 per 1,000 in 1982; thereafter, the trends differed. In all the countries

TABLE 4

Five leading causes of death in children under 1 year old, with rates per 100,000 live births, in some countries with high mortality rates in that group, last available year.

Country	Year	Order				
		1	2	3	4	5
Dominican Republic	1985	Certain conditions originating in the perinatal period (760–779) (2,416.1)	Intestinal infections due to specified organisms and ill-defined (007–009) (954.1)	Influenza and pneumonia (480–487) (375.4)	Congenital anomalies (740–759) (312.7)	Meningitis (320–322) (151.1)
Ecuador	1987	Certain conditions originating in the perinatal period (760–779) (1,439.8)	Intestinal infections due to specified organisms and ill-defined (007–009) (852.9)	Influenza and pneumonia (480–487) (441.1)	Bronchitis, emphysema, and asthma (490–493) (376.1)	Congenital anomalies (740–759) (260.7)
Honduras	1981	Intestinal infections due to specified organisms and ill-defined (007–009) (541.5)	Certain conditions originating in the perinatal period (760–779) (371.4)	Influenza and pneumonia (480–487) (137.9)	Bronchitis, emphysema, and asthma (490–493) (116.8)	Whooping cough (033) (72.7)
Peru	1983	Certain conditions originating in the perinatal period (760–779) (910.7)	Influenza and pneumonia (480–487) (669.1)	Intestinal infections due to specified organisms and ill-defined (007–009) (584.0)	Bronchitis, emphysema, and asthma (490–493) (168.8)	Nutritional deficiencies (260–269) (114.1)

Source: PAHO. Technical Information System.

except Cuba, the rates have tended to stabilize, at approximately 19 per 1,000 in Costa Rica and Chile and at 25 per 1,000 in Panama. This course contrasts with the experience in the Region's more advanced countries. In the United States the rates have shown a steady decline, from 25 per 1,000 in 1965 to 10 per 1,000 in 1986, with an average annual reduction of 0.7 point. In Canada, similarly, the rates fell from 13.5 per 1,000 in 1976 to 7.9 per 1,000 in 1985, or an average of 0.6 point per year. Cuba also follows this pattern and has experienced a steady decline, to 11.7 per 1,000 in 1988. In Costa Rica the stabilization of the rates seen since 1980 was interrupted in 1988, when mortality fell to 14.7 per 1,000.

This information indicates that underdevelopment conditions in countries that have reached relatively low levels of infant mortality may lessen the progress they are able to make toward its later reduction. Strategies must be developed that allow the health sector to respond more efficiently to the different nature that the problem assumes once relatively low mortality is achieved, as well as to overcome the social inequalities that still affect infant survival.

Figure 2 also includes Uruguay, which, as noted above, was a country in the forefront of infant mortality reduction in the 1950s, but later suffered a prolonged period of stagnation or slight decline. This period lasted until 1977, when the rate was close to 50 per 1,000, after which the decline began again. However, a new period of stabilization began in 1982 at a clearly excessive level of close to 30 per 1,000.

The course in these countries of two important components of infant mortality—neonatal and postneonatal mortality—is analyzed below (Table 6 and Figure 3). Both components are involved in the decline in the overall rate, but the intensities of their reductions are distinct and their contributions to the total infant mortality reduction are also different and depend on the initial level. Since Costa Rica and Chile, with overall rates of 68 to 83 per 1,000 in 1970, presented at that time a situation similar to the current situation in Latin American countries with higher mortality, their progress provides an example of what may be considered a feasible and desirable future route.

In Costa Rica, postneonatal mortality was the principal problem in 1970. With a rate of 40 per 1,000, it ac-

TABLE 5

Five leading causes of death in children under 1 year old, with rates per 100,000 live births, in some countries with low mortality rates in that group, last available year.

Country	Year	Order				
		1	2	3	4	5
Canada	1986	Certain conditions originating in the perinatal period (760–779) (326.0)	Congenital anomalies (740–759) (248.1)	Accidents (E800–E949, E980–E989) (18.5)	Influenza and pneumonia (480–487) (12.4)	Meningitis (320–322) (6.2)
Chile	1987	Certain conditions originating in the perinatal period (760–779) (669.4)	Congenital anomalies (740–759) (389.4)	Influenza and pneumonia (480–487) (315.7)	Accidents (E800–E949, E980–E989) (258.9)	Intestinal infections due to specified organisms and ill-defined (007–009) (50.4)
Costa Rica	1988	Certain conditions originating in the perinatal period (760–779) (662.4)	Congenital anomalies (740–759) (392.0)	Influenza and pneumonia (480–487) (145.0)	Intestinal infections due to specified organisms and ill-defined (007–009) (62.7)	Nutritional deficiencies (260–269) (23.3)
Cuba	1988	Certain conditions originating in the perinatal period (760–779) (514.6)	Congenital anomalies (740–759) (303.9)	Influenza and pneumonia (480–487) (97.4)	Intestinal infections due to specified organisms and ill-defined (007–009) (47.4)	All accidents and violence (E800–E999) (44.2)
United States of America	1986	Certain conditions originating in the perinatal period (760–779) (485.2)	Congenital anomalies (740–759) (219.5)	Heart disease (390–429) (26.3)	Accidents (E800–E949, E980–E989) (25.6)	Influenza and pneumonia (480–487) (17.6)

Source: PAHO. Technical Information System.

counted for close to 60% of the total number of infant deaths. The decrease was most pronounced in this component, and its absolute decline was almost two times greater than that of neonatal mortality during the period 1970–1980. Thus, in 1980 the postneonatal component accounted for less than half of infant deaths, although it was still important (37%). The situation in Chile was similar, but the decline in postneonatal mortality is relatively greater: 70% of the reduction in infant mortality during the 1970s originated among infants from 1 to 11 months of age. These countries have succeeded in reducing what was in 1970 a considerable excess of this mortality in relation to the United States (8 to 10 times greater), although an excess mortality persists.

In contrast to the above-described changes, the postneonatal mortality rate in Guatemala in 1985 was still estimated to be 47 per 1,000, that is, eight times greater than in Cuba. This component of mortality represented two-thirds of the deaths in the first year of life. The progress in the 1970s, although significant, averaged half of that achieved in Chile and Costa Rica and is only moderately greater than advances in reducing neonatal mortality.

On the other hand, postneonatal mortality was initially lower in Cuba and Panama (15 to 24 per 1,000 in 1970). It accounted for half or fewer of infant deaths, and its decrease has been similar to that of neonatal mortality. In 1985, the rate in Cuba of 6 per 1,000 represented only 30% of deaths in the first year of life and was close to the United States rate of 3.7 per 1,000.

For neonatal mortality, the reduction in 1970–1980 was similar in intensity in all the countries analyzed (except the United States), independent of the initial level. This component represents the main problem in countries with the lowest mortality, accounting for 60% to 70% of infant deaths.

Figure 2 also shows that in those countries where the reduction in mortality tended to stall in 1980–1985, both infant mortality components stabilized at levels that are excessive. Neonatal death rates were 25 per 1,000 in Guatemala and 10 per 1,000 in Panama, while in the United States they were only 6.8 per 1,000 and continued

TABLE 6

Infant, neonatal, and postneonatal mortality in selected countries, 1970–1985.

Years	Rates (per 1,000)					
	Guatemala	Chile	Costa Rica	Panama	Cuba	United States of America
Infant mortality						
1970	111	83	68	49	39	20
1980	83	33	21	27	20	13
1985	71	20	15	26	16	11
Five-yearly decrease:						
1970–1980	14.0	25.0	23.6	11.5	9.6	3.7
1980–1985	12.0	13.5	6.0	0.5	3.6	2.1
Neonatal mortality						
1970	39	32	28	25	24	15
1980	27	17	12	15	14	9
1985	24	10	8	16	10	7
Five-yearly decrease:						
1970–1980	6.0	7.5	8.0	5.4	5.2	3.3
1980–1985	3.0	6.8	3.9	−1.5	3.3	1.7
Postneonatal mortality						
1970	72	51	40	24	15	5
1980	56	16	9	12	6	4
1985	47	10	7	10	6	4
Five-yearly decrease:						
1970–1980	8.0	17.1	15.9	6.1	4.5	0.4
1980–1985	9.0	6.7	1.7	1.4	−0.1	0.4
Percentage decline in mortality in 1970–1980 due to:						
Neonatal mortality	43	30	34	47	54	89
Postneonatal mortality	57	68	67	53	47	11
Percentage distribution of infant mortality in 1985:						
Neonatal mortality	34	51	53	62	64	65
Postneonatal mortality	66	49	45	40	38	35

Source: National publications of vital statistics, corrected in the case of Guatemala.

their slow decline. The situation was similar for postneonatal mortality: rates were 47 per 1,000 in Guatemala, 10.4 per 1,000 in Panama, and 3.7 per 1,000 in the United States.

Since mortality in the first year of life is associated with different causes of death at different ages, the preceding analysis provides another epidemiologic dimension of the problem of infant health in the countries of Latin America. In the countries lagging the farthest behind in the transition, the problem of infant mortality is rooted chiefly in deaths between ages 1 and 11 months. Costa Rica's experience indicates that it was the drastic reduction in postneonatal mortality (through reduction in deaths from diarrheal diseases, vaccine-preventable diseases, acute respiratory infections, and malnutrition) that caused infant mortality to decline from 70 to 20 per 1,000 in 15 years. The strategy of extending primary care makes this objective a principal aim, without prejudicing the integrated nature necessary for all health programs.

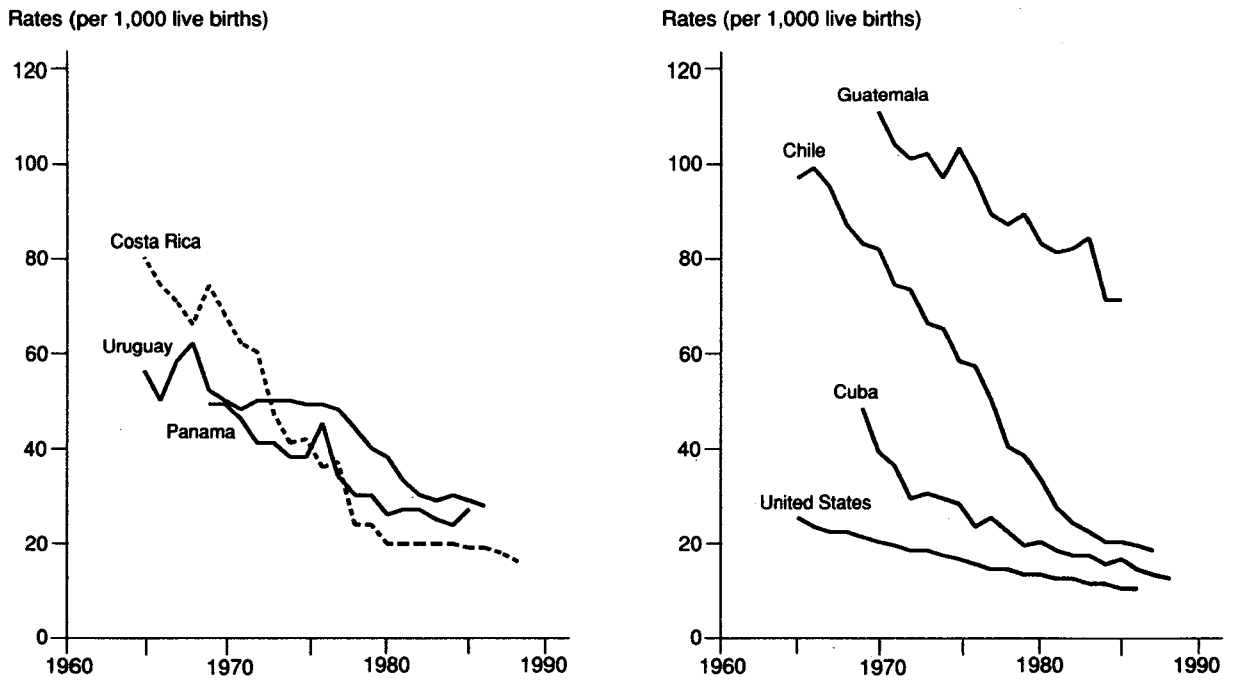
In countries farther along in the transition toward lower infant mortality, neonatal deaths are of growing importance because their reduction is more difficult and technically more complex. Advances in the countries of Latin America in general have not been satisfactory; moreover, in some of them the decline tends to halt when the rate could be reduced still further. This problem warrants more discussion when causes of death are analyzed.

For national health plans, the contrasts in survival between population groups in a country are more important than differences in mortality between countries. Geographic differences in infant mortality are of special interest to the health sector because its plans and programs are also geographically based.

Differences in infant mortality between socioeconomic

FIGURE 2

Infant mortality in selected countries, 1965 - 1988.



Source: Country publications.

groups have been described in all countries in the Region, and studies have been done on their association with a number of variables: the head of household's occupational category, parental education, work of the mother, housing conditions, family income, and so on. Such associations should not be interpreted as causal relationships since the framework that explains the way these variables influence mortality is much more complex. Nevertheless, the associations of infant mortality with these and other variables can be used by the health sector as indicators of the different levels of risk to which population groups are exposed and as another element on which to base its definition of priorities.

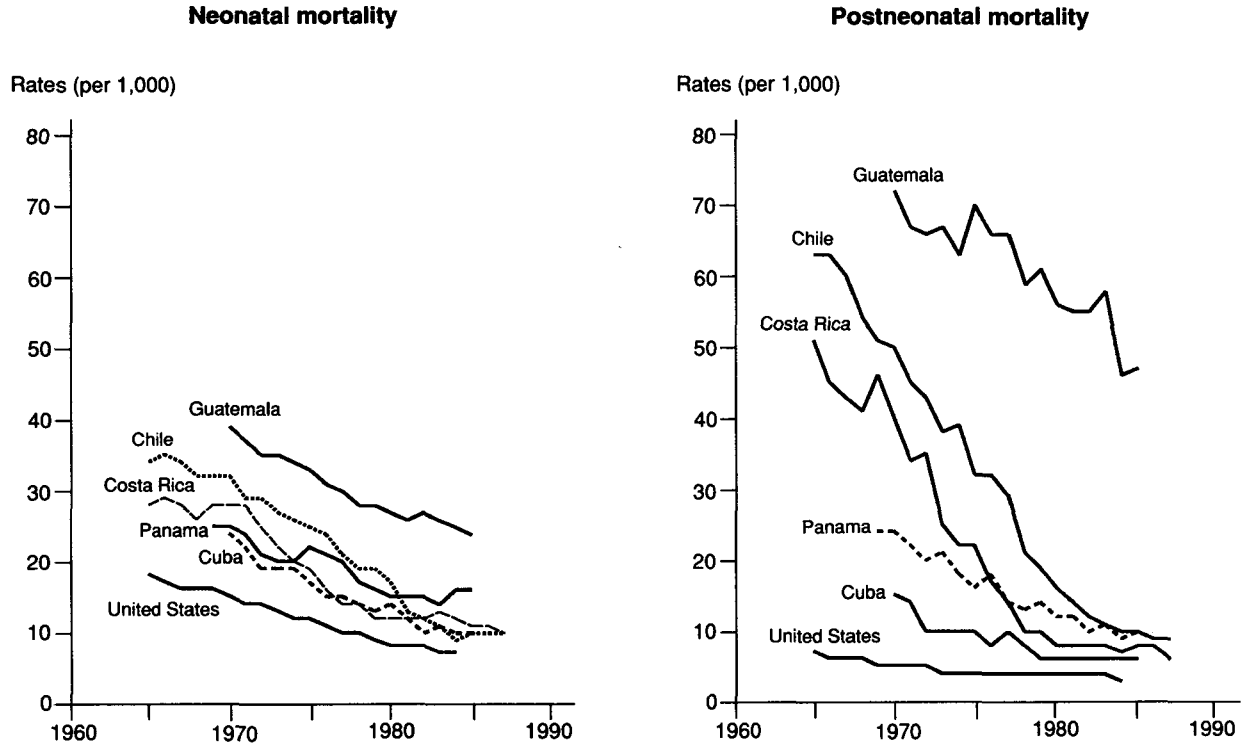
The relationship of maternal education to infant mortality has been studied extensively, and the contrasts that have been found are important, systematic, and significant. The mother's education is associated with social structure and material conditions of life in the home, which, in turn, directly influence the child's survival. Maternal illiteracy or low education level is thus an important indicator of families whose children are subject to greater health risks.

Table 7 presents estimates of infant mortality for certain countries in Latin America according to the number of years of formal education the mother has had. In all the countries, little or no access to education on the part of the mother in the past, which is an indicator of the limited access the family currently has to the benefits of development, is associated with higher mortality among her children. The rate may be 5 or 6 times greater than in the most privileged group, that is, the one having greatest maternal education. Thus, even in countries where the national rate has fallen to 60 per 1,000, the children of illiterate women die at a rate of more than 100 per 1,000. In contrast, in all countries, even those with high mortality, the more advantaged groups, as identified on the basis of maternal education, have infant mortality rates under 30 per 1,000.

Figure 4 illustrates the problem for a group of Central American countries representing the range of variation existing in Latin America. The height of each line indicates the magnitude of the infant mortality rate and, therefore, the delay in reducing it (Figure 4A). The slope of the line denotes the dimension of the contrast in child-

FIGURE 3

Neonatal and postneonatal mortality in selected countries, 1965 - 1988.



Source: Country publications.

hood survival between social groups, that is, the lack of equity in the right to life. Even in the 1980s, after major advances had been made in reducing infant mortality, more than 10% of the children of women who never had access to education died before reaching 1 year of age in countries with high mortalities. If the mother had a very incomplete primary education, the risk to the child is 80 to 90 per 1,000. In Costa Rica, infant mortality was reduced in all social groups, but reductions were greater among those who faced greater risks; thus, social contrasts in childhood survival have diminished, as seen in the gentler slope of the line. This leveling is the goal to which all countries should aspire to surmount present shortfalls of progress. The figure shows that the ideal of a minimal risk of death for all children in a country is now a reality in Finland.

The practical significance of social differences in mortality depends both on their magnitude and on the distribution of births in the various groups defined by level of maternal education. This estimated distribution is shown in Figure 4B. In countries with high mortality, more than half (51% to 76%) of the total number of births occurs in groups with little education (0–3 years), while in Costa Rica the proportion is 11%, which reflects the country's degree of development and the degree of equity in national policy. Owing to their high death rates, children of uneducated mothers account for 70% to 89% of the total number of deaths in those less than 1 year of age (Figure 4C). In countries with lower mortality, the proportion of births occurring in groups with little education is lower (because more women are educated and fertility is lower); since the rates reflect smaller excesses than are found in other countries, these strata account for only 20% of the total number of infant deaths.

Similar analyses of differential infant mortality have been done for groups defined by the occupation of the father or head of household. The incorporation of the head of household into the productive sector is associated, through a variety of mechanisms, with the material living conditions of the child. Table 8 shows the differ-

TABLE 7

Infant mortality rates by education of mother, in selected countries of Latin America, 1960–1981.

Country	Year	Total	Rates (per 1,000) Years of maternal education						Difference between none and 7 or more years
			None	1–3	4–6	7 or more	7–9	10 or more	
Bolivia[a]	1971	152	185	155	138	104	...	69	...
Honduras	1960	131	143	120	97	50	...	...	93
	1980	83	112	80	60	35	...	...	77
Guatemala[b]	1968	115	167	124	87	44	51	44	71
	1976	97	130	105	76	40	51	29	57
Nicaragua	1966	122	136	117	96	57	...	...	79
	1982	83	103	89	76	45	...	...	58
Brazil[c]	1982	60	109	68	51	...	37	17	...
Paraguay	1975	55	86	65	46	29	...	...	57
Uruguay[d]	1971	47	84	60	41	31	20	...	...
Panama	1976	11	60	43	26	20	22	15	40
Costa Rica	1963	86	97[e]	...	64	39	45	30	58
	1981	22	35[e]	...	21	13	16	11	22

[a]0, 1–2, 3–5, 6–8, 9 or more years of study.
[b]Probability of dying before 2 years of age.
[c]0, 1–3, 4, 5–8, 9 or more years of study.
[d]0, incomplete primary, complete primary, middle, higher.
[e]0–3 years of study.
Source: CELADE, and for Brazil, Simoes, C. Mortalidade infantil no Brasil e seus condicionantes sócio-econômicas. Document presented at the Latin American Workshop on Health and Infant and Perinatal Mortality. CENEP/IDRC (Social Sciences Division and Health Sciences Division), Buenos Aires, 25 to 29 November 1985.

ences associated with this variable in certain Latin American countries. In all of them, although to varying degrees, infant mortality is higher in homes headed by agricultural workers. These workers, who do not have their own land and can sell only their labor, form the group whose infants are at highest risk, which partly explains the greater mortality in rural areas. Among urban groups, infant mortality is lower and is clearly differentiated according to the social group to which the child's family belongs, with higher rates in households headed by persons who perform manual labor. Poor urban groups are thus another nucleus of problems, and must be the focus of health and other programs if child survival is to improve substantially.

In Honduras and Guatemala, the decrease in infant mortality has been extended to all social and occupational groups, although excessive rates and contrasts persist, while in Panama and Costa Rica, the reduction in social contrasts related to childhood mortality has been considerable, despite the persistence of some significant differences (see Table 8). The form and chronology of the reduction in infant mortality differences between socio-occupational groups in Costa Rica are interesting (Figure 5). The transition to lower mortality had begun in urban groups and was clearly well advanced in the middle and upper social sectors in the 1960s. Nevertheless, the fall in the national rate was moderate because mortality remained high in the agrarian and manual labor sectors, which made up the majority of the population. Once the reductions became generalized in those groups during the 1970s, the national infant mortality rate decreased from 70 to 20 per 1,000.

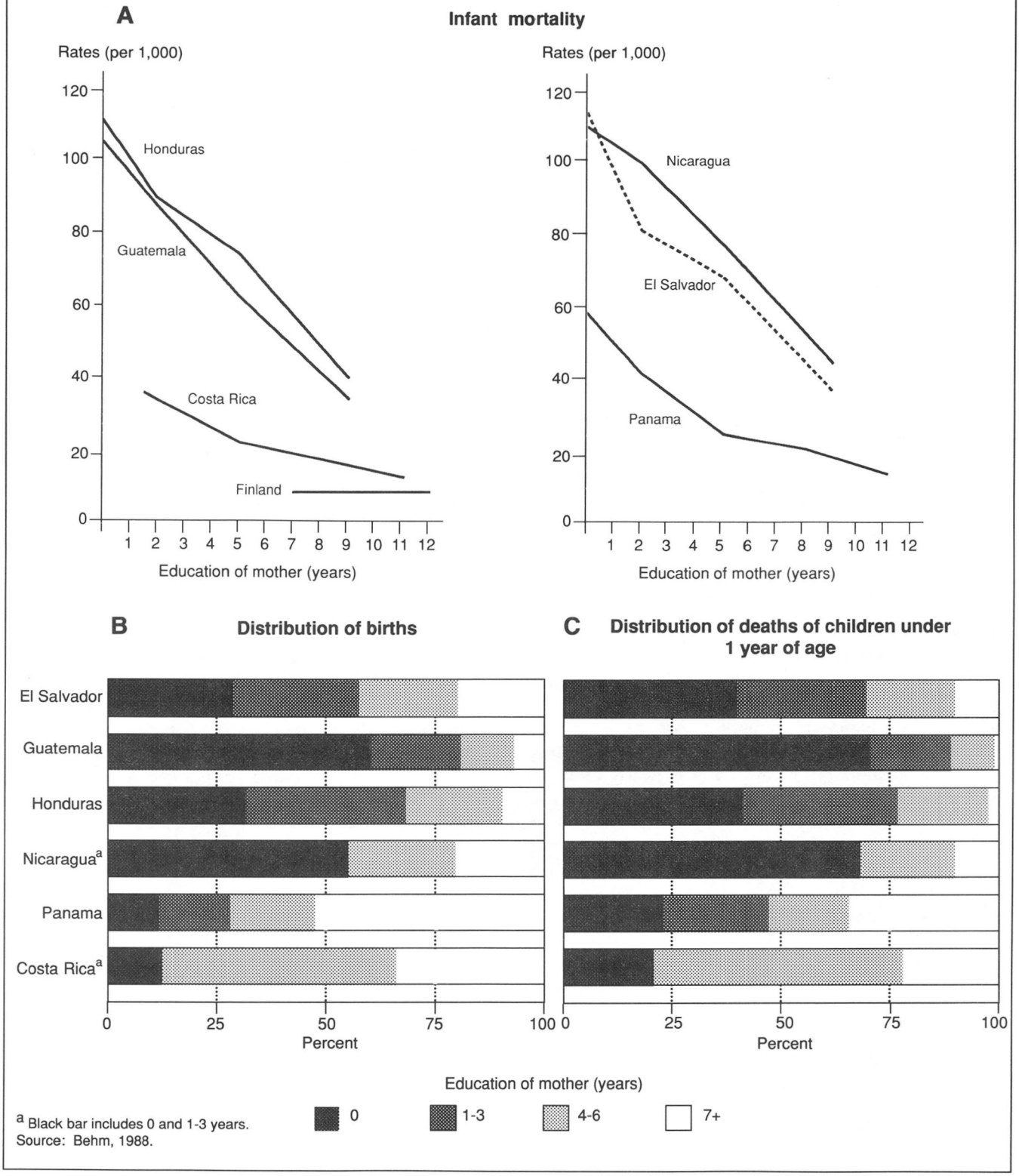
Table 9 shows findings from some studies of differential infant mortality associated with varying attributes of housing. The risk is greater for children whose family lives in a poor dwelling, particularly if it is not supplied with drinking water and sanitation services. Such deficiencies are more frequent in rural areas and help to explain the greater infant mortality among rural populations.

Table 10 presents some similar studies in countries with indigenous groups, which regularly have higher infant mortality. Thus, in countries where these groups are large, they are important nuclei of high infant mortality, and the health sector must deal with this problem within their cultural contexts.

The socioeconomic inequalities evident in the foregoing analysis of infant mortality rates are determined by the inequalities created and maintained by the prevailing development models, all of which exist within the limi-

FIGURE 4

Infant mortality rates and distribution of births and deaths of children under 1 year of age, by level of education of mother, in countries of Central America and Panama, 1980 - 1985.



[a] Black bar includes 0 and 1-3 years.
Source: Behm, 1988.

TABLE 8

Infant mortality by socio-occupational group of the head of household, in selected countries of Latin America, 1962–1982.

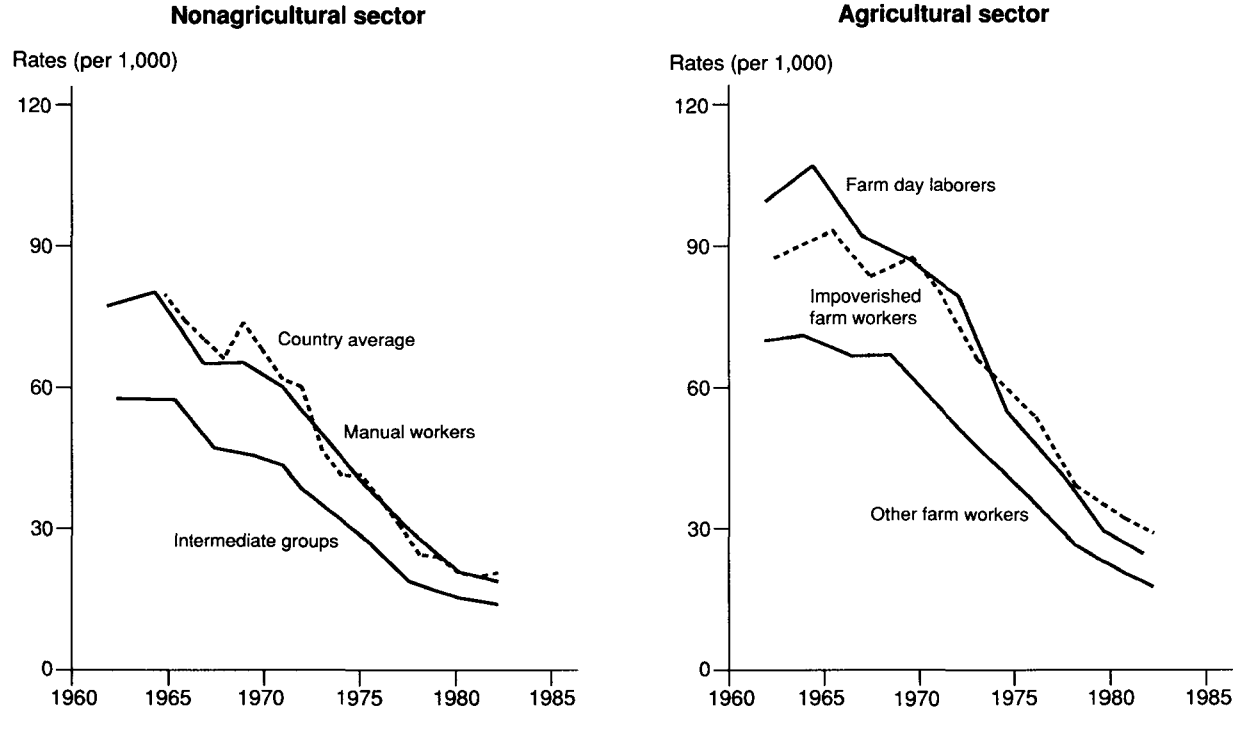
Country	Year	Country total	Agricultural sector		Nonagricultural sector			Difference between extremes
			Farm day-laborer	Farm worker	Salaried	Un-salaried	Intermediate groups	
Honduras	1960	131	146	132	124	...	90	56
	1980	83	105	99	74	...	44	61
Guatemala	1968	115	173	151	121	131	64	109
	1976	97	137	116	97	107	55	82
Nicaragua	1982	83	112	92	80	42	70	70
Mexico[a]	1965–1970	73	104	100	65	70	31–56	31
Panama	1976	31	42	49	21	27	17	11
Costa Rica	1963	86	103	71–91	79	...	58	17
	1981	22	24	19–31	18	...	14	11

[a]Probability of dying before 2 years of age.

Source: CELADE, and for Honduras, Guzmán, J. M., and Santos, H. *Encuesta Demográfica Nacional de Honduras: Mortalidad infantil. Los riesgos de muerte infantil en diferentes contextos sociales y geográficos. 1955–1985.* CELADE, Series A/1047/V, San José, Costa Rica, 1988.

FIGURE 5

Infant mortality by socio-occupational group, Costa Rica, 1962 - 1982.



Source: Behm et al., 1987.

TABLE 9

Infant mortality according to housing characteristics in selected countries of Latin America, 1970–1982.

Housing characteristics	Rates (per 1,000)		
	Bolivia 1972	Nicaragua 1982	Costa Rica 1981
Quality of housing			
Bad	170	97	27
Average	...	84	19
Good	121	58	16
	Paraguay 1974–1976	Panama 1970–1974	
Water supply			
Public system, inside house	34	39	
Public system, outside house	52	49	
Other sources	61	66	
Excreta disposal			
Sewerage or septic tank	39	34	
Municipal lavatory	50	...	
Latrine	...	56	
Latrine or none	63	...	
None	...	66	

Source: CELADE.

TABLE 10

Infant mortality by ethnic group in selected countries of Latin America, 1960–1976.

Country, language, and ethnicity	Rates (per 1,000)	
Bolivia, 1973		
Quechua only		218
Aymará only		169
Spanish only		137
Spanish and other		107
Other		199
Paraguay, 1974–1976		
Guaraní only		58
Spanish and Guaraní		46
Spanish only		26
Guatemala[a]	1960	1976
Indigenous	206	128
Nonindigenous	145	101

[a]Probability of dying before 2 years of age.
Source: CELADE.

tations implied by underdevelopment. Therefore, the countries will achieve the greatest advances if they can attain more efficient—but, at the same time, more just and equitable—forms of development. In spite of everything, and although the efficacy of health plans is limited by these conditions, the experience of the Latin American and Caribbean countries seems to indicate that the health sector can contribute significantly to improve the conditions that have been described by applying the strategies to achieve the goal of health for all by the year 2000.

Mortality in Children Aged 1 to 4 Years

The death rate in this age group is increasingly accepted as an indicator of the population's living standard, its socioeconomic conditions, and the accessibility and quality of services. For that reason, knowledge of this rate's level and trend and analysis of its structure assist in the definition of policy and priorities and the formulation of health programs.

The most recent information available shows large differences among the countries of the Region in the values of the rate (see Annex III). The lowest figures were recorded in Canada, the United States of America, Barbados, Costa Rica, Cuba, and Chile, all with rates of less than 1 per 1,000 children in this age group—a reduction to less than half the value fixed as the goal for the year 2000. At the other extreme is Guatemala, with a rate of 10.9 per 1,000.

The trend toward decrease in the rates was reflected in the fact that the number of countries with high rates (greater than 3 per 1,000) fell from 10 in 1980 to only 4 in the last year for which data are available, and the number of countries with rates of less than 2 per 1,000 increased from 17 to 21.

The greatest decreases occurred in the countries with the highest mortalities, a situation significantly different from that seen for infant mortality rates. All the countries that in 1980 had rates higher than 3 per 1,000 experienced decreases of 10% or more annually, with the exception of Guatemala, where the decline was half as much, or 4.7% annually. This fact is responsible for the large difference between the present rate in that country and magnitude of the rates in the remaining countries in the Region. The proportion of total deaths represented by deaths in children aged 1 to 4 years is 18%, almost twice that in the rest of the countries.

The main causes of death in this age group are strikingly different in countries with high death rates (Table 11) and those with low rates (Table 12). In countries with high mortalities, infectious diseases occupy first place. In turn, it is noteworthy that in three of the four countries for which data are presented, measles appears among the first five causes of death, and in one of them whooping cough also appears. In most of the countries with low death rates in the 1- to 4-year age group, accidents and congenital anomalies are the first or second most common cause of death and infectious diseases (basically influenza and pneumonia and intestinal infections) are the second or third cause.

As in the case of infant mortality, these rates represent national averages and do not reflect the geographic and social variations that may exist in each country. For that reason, it is important that specific research be conducted to identify the population groups at high risk and the social, economic, and cultural variables—including access to health services—that influence illness and death in children 1 to 4 years old. Such studies can guide the development of integrated programs for prevention and control of the diseases that have the greatest influence on the mortality of children in the Americas.

Mortality in Children Aged 5 to 9 Years

Deaths in children aged 5 to 9 years represent a much smaller proportion of the total number of deaths than those in children younger than 5 years; in both developed and developing countries, the percentage is 10 to 20 times less. Death rates in the group aged 5 to 9 years are 40 times less than infant mortality rates and at least two times lower than mortality rates of children 1 to 4 years old (Table 13). Nevertheless, in some developing countries the proportion of deaths in children aged 5 to 9 years continues to be high, especially in comparison with those

TABLE 11

Five leading causes of death in children 1 to 4 years old, with rates per 100,000 children in that age group, in some countries with high mortality rates in that group, last available year.

Country	Year	Order				
		1	2	3	4	5
Ecuador	1987	Intestinal infections due to specified organisms and ill-defined (007–009) (100.0)	Influenza and pneumonia (480–487) (36.2)	Accidents (E800–E949, E980–E989) (34.0)	Bronchitis, emphysema, and asthma (490–493) (33.4)	Nutritional deficiencies (260–269) (30.7)
El Salvador	1984	Intestinal infections due to specified organisms and ill-defined (007–009) (59.5)	Bronchitis, emphysema, and asthma (490–493) (20.4)	Measles (055) (16.2)	Nutritional deficiencies (260–269) (15.8)	Accidents (E800–E949, E980–E989) (14.4)
Guatemala	1984	Intestinal infections due to specified organisms and ill-defined (007–009) (345.1)	Influenza and pneumonia (480–487) (222.7)	Nutritional deficiencies (260–269) (74.1)	Measles (055) (57.7)	Whooping cough (033) (43.1)
Peru	1983	Intestinal infections due to specified organisms and ill-defined (007–009) (135.1)	Influenza and pneumonia (480–487) (120.9)	Nutritional deficiencies (260–269) (40.2)	Bronchitis, emphysema, and asthma (490–493) (34.9)	Measles (055) (22.0)

Source: PAHO. Technical Information System.

TABLE 12

Five leading causes of death in children 1 to 4 years old, with rates per 100,000 children in that age group, in some countries with low mortality rates in that group, last available year.

Country	Year	Order				
		1	2	3	4	5
Argentina	1986	Accidents (E800–E949, E980–E989) (23.8)	Heart disease (390–429) (11.5)	Influenza and pneumonia (480–487) (7.6)	Malignant neoplasms (140–208) (7.3)	Congenital anomalies (740–759) (7.3)
Canada	1986	Accidents (E800–E949, E980–E989) (16.7)	Congenital anomalies (740–759) (7.6)	Malignant neoplasms (140–208) (5.4)	Meningitis (320–322) (1.3)	Influenza and pneumonia (480–487) (1.2)
Chile	1987	Accidents (E800–E949, E980–E989) (30.2)	Influenza and pneumonia (480–487) (13.6)	Congenital anomalies (740–759) (6.5)	Malignant neoplasms (140–208) (4.6)	Meningitis (320–322) (2.6)
Costa Rica	1988	Accidents (E800–E949, E980–E989) (15.9)	Congenital anomalies (740–759) (14.0)	Influenza and pneumonia (480–487) (8.1)	Malignant neoplasms (140–208) (8.1)	Intestinal infections caused by specified organisms and ill-defined (007–009) (7.8)
Cuba	1988	All accidents and violence (E800–E999) (26.4)	Congenital anomalies (740–759) (11.8)	Meningococcal infection (036) (7.1)	Malignant neoplasms (140–208) (6.9)	Influenza and pneumonia (480–487) (5.5)

Source: PAHO. Technical Information System.

TABLE 13

Mortality rates in children under 10 years old in selected countries, around 1986.

Country	Year	Mortality rate[a]		
		<1	1–4	5–9
Guatemala	1984	65.5	10.9	2.22
Honduras	1981	23.0	4.4	1.10
Peru	1983	33.8	5.6	0.87
Ecuador	1986	50.4	3.9	0.86
El Salvador	1984	34.4	3.1	0.79
Brazil	1986	24.8	1.6	0.52
Chile	1986	19.1	0.9	0.39
Costa Rica	1986	17.8	0.8	0.37
Cuba	1987	13.6	0.8	0.35
Uruguay	1986	28.0	0.8	0.36
Canada	1986	7.9	0.4	0.23
United States of America	1986	10.4	0.5	0.24

[a]Per 1,000 live births or 1,000 children in the age group.
Source: PAHO. Technical Information System.

in the Region's developed countries and certain developing countries that have already achieved a better health situation. In Guatemala, for example, deaths in this group in 1984 represented 4% of the total number of deaths at all ages, a proportion 20 times higher than in Canada for the same age group and almost double the proportion of deaths in children under 5 years old in Canada in that year (2.1%).

A contrast is seen not only between developed and developing countries but also among the latter (Table 14). The death rates in Chile, Costa Rica, Cuba, and Uruguay are almost twice those in Canada and the United States of America, but in turn are one-half those in Ecuador, El Salvador, and Peru, just over one-third the rate in Honduras, and one-seventh the rate in Guatemala. The differences in this age group's health situation are similar to those described for children under 5 years old.

The group's mortality profile also reveals significant differences between developed and developing countries (Tables 15 and 16). In the latter, diarrheal diseases and influenza and pneumonia continue to be responsible for a large number of deaths. In Guatemala, the cause of half the deaths among children 5 to 9 years old in 1984 was

TABLE 14

Mortality in children 5 to 9 years old, by country, around 1978 and 1985.

Country	Year	No.	Rate[a]	%	Year	No.	Rate[a]	%	Decrease[b]
Antigua and Barbuda	1978	6	64.5	1.49	...	...	...	...	...
Argentina	1978	1,343	52.5	0.58	1985	1,129	35.3	0.47	5.5
Bahamas	1978	23	85.8	2.14	1985	9	33.6	0.69	12.5
Barbados	1978	11	44.4	0.54	1984	4	18.2	0.20	13.8
Belize	1978	22	90.9	2.53	1984	7	40.6	0.89	12.6
Brazil	1978	8,312	...	1.25	1984	8,629	51.6	1.06	...
Canada	1978	690	37.6	0.41	1986	412	22.9	0.22	0.6
Chile	1978	748	61.9	1.03	1986	452	38.6	0.63	5.7
Colombia	1977	3,572	107.0	2.46	1984	2,070	59.2	1.50	...
Costa Rica	1978	85	32.3	0.99	1986	123	37.2	1.18	−1.8
Cuba	1978	490	40.0	0.89	1987	269	34.8	0.41	1.5
Dominica	1978	11	93.2	2.64	1985	1	11.8	0.21	25.6
Dominican Republic	1978	571	65.6	2.47	1985	470	56.7	1.69	2.1
Ecuador	1978	1,735	152.2	3.07	1986	1,128	85.5	2.21	7.0
El Salvador	1981	749	111.8	2.00	1984	552	78.7	1.91	...
French Guiana	1978	5	56.8	1.07	1984	3	30.2	0.64	10
Guadeloupe	...	...	...	...	1981	19	53.4	0.91	...
Guatemala	1978	2,684	281.3	4.19	1984	2,616	221.7	3.95	3.9
Guyana	1978	94	83.2	1.68	1984	74	62.8	1.55	4.6
Honduras	1978	746	139.5	4.12	1981	652	109.5	3.56	7.8
Jamaica	1977	117	38.1	0.90	1984	154	57.5	1.12	...
Martinique	1975	24	60.9	1.10	1985	8	36.7	0.37	...
Mexico	1978	9,416	95.3	2.25	1983	6,914	65.9	1.67	7.1
Nicaragua	1977	328	76.9	2.63	...	...	...	...	...
Panama	1978	318	115.2	2.10	1987	143	50.8	1.57	8.7
Paraguay (area of information)	1978	262	106.1	2.01	1986	202	64.5	1.59	6
Peru	1978	1,963	84.3	2.40	1983	2,145	86.8	2.30	−0.6
Puerto Rico	1977	112	31.7	0.56	1986	54	15.7	0.23	7.5
St. Kitts and Nevis	1978	4	72.7	0.86	1984	2	40.2	0.42	9.4
Saint Lucia	1978	6	29.1	0.76	1987	9	57.6	1.00	...
St. Vincent and the Grenadines	1978	4	25.3	0.54	1986	5	34.4	0.81	−3.9
Suriname	1978	16	25.7	0.59	1985	16	39.0	0.70	−6.1
Trinidad and Tobago	1978	59	48.8	0.86	1983	51	41.0	0.68	3.4
United States of America	1978	5,649	32.7	0.29	1986	4,082	23.6	0.19	4.0
Uruguay	1978	90	34.6	0.32	1986	98	36.0	0.34	−0.5
Venezuela	1978	1,251	64.8	1.73	1983	1,088	50.5	1.42	4.9
Virgin Islands (UK)	1978	1	74.1	1.47	...	...	...	...	...
Virgin Islands (USA)	...	...	...	...	1980	4	35.9	0.74	...

[a]Per 100,000 children in the age group.
[b]Percentage annual decrease in the rate in the period. Negative numbers indicate increase.
Source: PAHO. Technical Information System.

TABLE 15

Five leading causes of death in children 5 to 9 years old, with rates per 100,000 children in that age group, in some countries with high mortality rates in that group, last available year.

Country	Year	Order				
		1	2	3	4	5
Guatemala	1984	Intestinal infections due to specified organisms and ill-defined (007–009) (49.8)	Influenza and pneumonia (480–487) (47.1)	Nutritional deficiencies (260–269) (18.3)	Measles (055) (10.8)	Accidents (E800–E949, E980–E989) (8.8)
Honduras	1981	Intestinal infections due to specified organisms and ill-defined (007–009) (17.3)	Accidents (E800–E949, E980–E989) (11.6)	Measles (055) (6.5)	Anemias (280–285) (5.9)	Nutritional deficiencies (260–269) (3.9)
Peru	1983	Influenza and pneumonia (480–487) (17.3)	Accidents (E800–E949, E980–E989) (13.7)	Intestinal infections due to specified organisms and ill-defined (007–009) (7.6)	Bronchitis, emphysema, and asthma (490–493) (4.2)	Tuberculosis (010–018) (4.2)
Ecuador	1986	Accidents (E800–E949, E980–E989) (23.5)	Intestinal infections due to specified organisms and ill-defined (007–009) (7.0)	Influenza and pneumonia (480–487) (5.8)	Malignant neoplasms (140–208) (3.6)	Bronchitis, emphysema, and asthma (490–493) (2.9)
El Salvador	1984	Accidents (E800–E949, E980–E989) (20.0)	Intestinal infections due to specified organisms and ill-defined (007–009) (5.6)	Measles (055) (4.0)	Homicide, legal intervention, and operations of war (E960–E978) (2.3)	Influenza and pneumonia (480–487) (2.0)

Source: PAHO. Technical Information System.

one of these diseases. In Canada, by contrast, more than 80% of the deaths in this age group were caused by noninfectious diseases. Even in certain developing countries, such as Costa Rica, diarrheal diseases and influenza and pneumonia accounted for a very small proportion of the deaths (4.2%).

However, these diseases are not the only principal causes of death in the group of developing countries with high death rates. Measles, one of the diseases included in the Expanded Program on Immunization (EPI), figured as the third most frequent cause of death in Honduras in 1981 and in El Salvador in 1984, and as the fourth in Guatemala in 1984. Tuberculosis was the fifth most common cause of death in children aged 5 to 9 years in Peru in 1983.

In contrast, the principal causes of death in the developed countries and in those developing countries that have a better health situation are accidents, malignant tumors, congenital anomalies, and heart conditions. The mortality profile in these countries is quite similar: the three highest-ranking causes of death in Costa Rica are the same as in the United States (Tables 15 and 16).

As already noted for children under 5 years old, the contrast between the countries is reflected not only in differences in the magnitude of mortality but also in differences in the way the situation has changed, as revealed by analysis of mortality trends. While two of the Region's countries with the lowest mortalities, Canada and the United States, have shown decreases of 4% and 6% per year, respectively, no decline was seen from 1978 to 1983 in Peru, which has a death rate four times higher.

The situation in Honduras, Ecuador, and Guatemala is different. In the first two, the trends toward decrease were greater than those recorded in Canada and the United States, and in Guatemala the decline was equal to that in the United States. However, the changes observed in developing countries must also be analyzed in relation to the trends in mortality from diarrheal diseases and influenza and pneumonia, which, as already noted, continue to cause a large number of deaths although they are readily controllable.

Except in Ecuador, the annual decrease in mortality from diarrheal diseases in the four countries with the highest overall death rates was very low—even less than

TABLE 16

Five leading causes of death in children 5 to 9 years old, with rates per 100,000 children in that age group, in some countries with low mortality rates in that group, last available year.

Country	Year	Order				
		1	2	3	4	5
Costa Rica	1987	Accidents (E800–E949, E980–E989) (11.5)	Malignant neoplasms (140–208) (5.0)	Congenital anomalies (740–759) (2.9)	Intestinal infections due to specified organisms and ill-defined (007–009) (1.5)	Heart disease (390–429) (1.2)
Cuba	1988	All accidents and violence (E800–E999) (17.4)	Malignant neoplasms (140–208) (5.3)	Congenital anomalies (740–759) (3.3)	Meningococcal infection (036) (1.5)	Nephritis, nephrotic syndrome, and nephrosis (580–589) (0.8)
Chile	1987	Accidents (E800–E949, E980–E989) (16.0)	Malignant neoplasms (140–208) (4.2)	Influenza and pneumonia (480–487) (2.5)	Congenital anomalies (740–759) (1.7)	Benign neoplasms, carcinoma in situ, and other neoplasms (210–239) (1.1)
Canada	1986	Accidents (E800–E949, E980–E989) (10.7)	Malignant neoplasms (140–208) (4.3)	Congenital anomalies (740–759) (1.7)	Homicide, legal intervention, and operations of war (E960–E978, E990–E999) (0.7)	Heart disease (390–429) (0.5)
United States of America	1987	Accidents (E800–E949, E980–E989) (11.8)	Malignant neoplasms (140–208) (3.6)	Congenital anomalies (740–759) (1.5)	Heart disease (390–429) (0.8)	Homicide, legal intervention, and operations of war (E960–E978, E990–E999) (0.8)

Source: PAHO. Technical Information System.

the fall in mortality from all causes, including the most difficult to control. In the case of mortality from influenza and pneumonia, Ecuador and Honduras recorded annual decreases of 10% or greater, but trends toward increase were seen in Guatemala and Peru.

Specific Health Problems of Children

Diarrheal Diseases

Diarrheal diseases constitute one of the most important health problems affecting the child population, diminishing the well-being of children and overburdening demand on health services. They are a serious public health problem in the countries of Latin America and the Caribbean and are among the first five causes of death in infants under 1 year; in many countries, they are the highest ranking cause of death in children aged 1 to 4 years. In developed countries, on the other hand, and unlike acute respiratory infections, diarrheal diseases are no longer among the first five causes of death in either of the two age groups.

The magnitude of the problem, therefore, differs markedly between the Region's developing and developed countries. In children under 1 year old, diarrheal disease mortality rates range from 0.5 per 100,000 live births in Canada to 967.3 per 100,000 live births in Nicaragua, a figure almost 2,000 times greater (see Annex III). In turn, there are marked differences among the developing countries. The death rate in Nicaragua is almost 30 times higher than that in the Bahamas (35.8 per 100,000 live births), with the remainder of the Region's developing countries falling between those two extremes. Mortality rates from diarrheal diseases in Nicaragua, the Dominican Republic, Guatemala, and Ecuador are between eight and

nine times higher than those in Argentina, Dominica, and Panama, and 15 times higher than those in Uruguay, Costa Rica, and Venezuela.

The difference in the magnitude of the problem is also seen in the proportion of total deaths attributable to diarrheal diseases in this age group (Table 17). In Canada, diarrheal diseases cause only 0.1% of infant deaths, while in Ecuador and Paraguay this value is 200 times higher: 20.9% and 21.3%, respectively. Proportions close to 20% are also recorded in El Salvador and Peru, while in Chile and Cuba the figures are less than 5%.

The situation is similar in children aged 1 to 4 years; the rates range between 0.2 per 100,000 children in this age group in Canada and 236 per 100,000 in Guatemala, a figure more than 1,000 times higher (Annex III). The differences among the Region's developing countries are also quite marked. The mortality in Guatemala is almost 10 times higher than in Panama (25.8 per 100,000 children in the age group) and more than 100 times higher than in Cuba (2.0 per 100,000).

The proportion of deaths due to diarrheal diseases in the 1- to 4-year age group also reflects the differing magnitude of the problem in different countries (Table 17). In Canada diarrheal diseases cause 0.5% of the deaths, while in Guatemala and Paraguay the values are 70 times higher: 35.6% and 35.0%, respectively.

The different situations reveal that the Region's countries still have a long way to go toward reduction in the human suffering caused by diarrheal diseases, which translates into high death rates in many developing countries. At the same time, the low death rates achieved by developed countries and some developing countries reflect the effective control measures that exist.

Progress toward that goal during the 1980s varied sharply between the countries, however (Table 18). While the developed countries, with low death rates from diarrheal diseases, continued to reduce them rapidly, decreases tended to be slight in the developing countries, where mortalities are often higher. In Canada, which has the lowest death rate from diarrheal diseases in children under 1 year old in the Region, the annual reduction was 33.3%; in the United States of America, the annual reduction was 19.6%. In contrast, although the annual reductions in some of the developing countries were large, for example, in Chile (20.1%), Venezuela (16.8%), Ecuador (16.5%), and Uruguay (15.0%), the trends toward decrease in others were minimal. In Nicaragua, with the highest mortality rate in the group, the annual reduction was 2.4%, 14 times lower than in Canada. The decrease was also low in Guatemala (4.9% annually), six

TABLE 17

Percentage of deaths[a] due to diarrheal diseases in children under 5 years, in selected countries, around 1986.

Country	Under 1 year	1 to 4 years
Canada	0.1	0.5
Brazil	17.8	14.5
Chile	3.7	2.2
Cuba	4.2	2.5
Ecuador	20.9	31.4
El Salvador	16.9	30.9
Guatemala	12.9	35.6
Paraguay	21.3	35.0
Peru	18.2	25.3
United States of America	0.3	0.2

[a]The percentages are based on the total number of deaths from defined causes in each age group.

Source: PAHO.

TABLE 18

Trend in mortality rate from diarrheal diseases in children under 5 years, in selected countries during the 1980s.

Country	Percentage annual decrease	
	Under 1 year	1 to 4 years
Canada	33.3	17.6
Trinidad and Tobago	24.1	15.0
Belize	21.5	4.9
Chile	20.1	16.8
United States of America	19.6	...
Venezuela	16.8	...
Ecuador	16.5	...
Uruguay	15.0	...
Mexico	14.0	9.0
Cuba	13.1	5.2
Colombia	9.2	10.9
Peru	9.0	...
Paraguay	8.4	8.2
El Salvador	7.6	11.1
Panama	7.6	5.9
Honduras	5.2	10.2
Guatemala	4.9	...
Nicaragua	2.4	...

Source: PAHO.

times less than in Canada. The slight tendency toward decrease in these countries not only reflects the problem's persistence but also broadens the distance separating them from the rest of the Region's developing countries and much more still from the developed countries.

The situation is similar for children aged 1 to 4 years (see Table 18): the largest annual reduction occurred in Canada (17.6%), the country with the Region's lowest mortality from diarrheal diseases; the remainder of the countries showed smaller decreases.

Despite the fact that the tendency toward decrease in diarrheal disease mortality in the developing countries is less striking than in the developed countries, an increase in the percentage of annual reduction has been observed in some countries since 1983. Beginning in that year, the decrease in the diarrheal disease death rate in children under 1 year old in Uruguay and Venezuela was similar to that in Canada (31.6% and 30.8% per year, respectively) and several times greater than had been recorded in previous years. A comparable trend exists in Guatemala and Ecuador.

Mortality rates from diarrheal diseases in children aged 1 to 4 years have also tended to decrease more rapidly in some countries since 1983. In both Guatemala and Ecuador, rates fell twice as fast as previously, and in Venezuela reductions were made at almost five times the previous pace. These observations present an encouraging prospect for the control of diarrheal diseases in most of the Region's developing countries.

With respect to morbidity, data are not available to allow the problem's magnitude to be determined precisely, since not all cases come to medical attention and not all episodes of diarrhea are recorded. The only information at hand comes from surveys carried out in the countries. Based on this information, the average incidence in 1988 was determined to be four episodes annually per child (Table 19). It should be borne in mind that the incidence of diarrheal disease is intimately related to the population's sanitary level, as reflected in countries in which the yearly number of diarrhea episodes per child is higher than the average of 4.6, such as Peru (8.6), Haiti (7.0), the Dominican Republic (7.0), and Mexico (5.9).

The more rapid decrease in diarrheal disease mortality rates that has been recorded in some countries can be attributed to consolidation of control activities, especially the improved clinical management of children with diarrhea through emphasis on the early use of oral rehydration therapy and appropriate nourishment during the disease and in convalescence. Information from the countries' control programs shows increases in rates of access to oral rehydration salts (that is, the proportion of the population with access to a trained provider who has oral rehydration salts available) and in rates of oral rehydration therapy use (the proportion of children under 5 years old with diarrhea who receive household fluids or oral rehydration salts) (Figure 6).

The rate of oral rehydration therapy use grew from an estimated 12% in 1984 to 39% in 1987, and the rate of access to oral rehydration salts increased from 30% in 1984 to 62% in 1987. Since the goal for 1990 is 50% oral rehydration therapy use and 80% access to oral rehydration salts, the importance of increasing the coverage of control activities must continue to be emphasized in efforts to further reduce mortality.

Also noteworthy are the beneficial effects on mortality and morbidity from diarrheal diseases produced by other, nonspecific interventions, such as breast-feeding promotion, immunization against measles, availability of water and sanitation services, promotion of personal and domestic hygiene, improvements in weaning practices, and immunization against rotavirus. Although precise data about the efficacy of such measures are not available, it is known that the availability of water and basic sanitation services can decrease diarrhea morbidity by 35%. In addition, programs designed to improve food hygiene will probably lead to a reduction in the incidence of diarrheal diseases in developing countries.

Acute Respiratory Infections

Acute respiratory infections, primarily pneumonia, are a chief cause of death among children in the Region. Even in developed countries such as Canada and the United States of America, they are among the five highest ranking causes of death in children under 1 year old, and in Canada, also in children aged 1 to 4 years (see Annex III). Still, the problem is more serious in developing countries. Startling differences exist between developed and developing countries in the death rates in both age groups (Figure 7), and even among developing countries large differences in the impact of the problem are seen.

The mortality rate from influenza and pneumonia in Guatemala, at 1,007.4 per 100,000 live births, is 100 times greater than in Canada, where the rate is 12.4 per 100,000 live births. In turn, it is almost ten times greater than in Cuba (109.6), Argentina (126.7), and Uruguay (132.1). Thus, while these last two countries have a problem of relatively small magnitude, their rates are still about ten times higher than Canada's (see Annex III).

As the distribution of the countries in Figure 7 illustrates, high levels of infant mortality usually mean high mortality from influenza and pneumonia. It should be borne in mind, however, that some countries with relatively high infant death rates record low influenza and pneumonia death rates, a situation attributable to the quality of cause-of-death certification. Thus, the mortality rate from influenza and pneumonia in the Dominican

TABLE 19

Estimated annual episodes of diarrhea per child and total expected episodes, in children under 5 years, by country, 1988.

Country	Population under 5 years (thousands)	Annual episodes of diarrhea in children under 5 years	Total expected episodes of diarrhea (thousands)
Argentina	3,150.7	3.0[a]	9,452.0
Barbados	23.1	3.0[a]	69.2
Belize	38.0	1.5[b]	57.0
Bolivia	1,195.4	3.0[b]	3,586.2
Brazil	18,214.3	3.9[c]	71,035.8
Chile	1,428.2	1.5[b]	2,142.3
Colombia	3,991.5	4.8[c]	19,159.1
Costa Rica	374.2	4.6[b]	1,721.4
Cuba	774.6	3.0[b]	2,323.8
Dominica	9.0	3.0[a]	27.0
Dominican Republic	942.0	7.0[c]	6,593.7
Ecuador	1,565.2	4.1[c]	6,417.2
El Salvador	803.7	4.0[b]	3,214.8
Grenada	12.3	3.0[a]	37.0
Guatemala	1,517.6	5.2[c]	7,891.6
Guyana	115.3	3.0[d]	346.0
Haiti	908.5	7.0[d]	6,359.5
Honduras	821.9	3.0[d]	2,465.7
Jamaica	299.0	1.0[d]	299.0
Mexico	11,102.5	5.9[c]	65,504.5
Nicaragua	645.7	2.0[d]	1,291.4
Panama	286.7	3.0[d]	860.2
Paraguay	620.6	2.1[c]	1,303.2
Peru	3,083.4	8.6[c]	26,517.5
St. Kitts and Nevis	5.1	3.0[a]	15.2
Saint Lucia	17.9	3.0[a]	53,8
St. Vincent and the Grenadines	16.4	3.0[a]	49.1
Suriname	47.1	0.8[d]	37.7
Trinidad and Tobago	139.6	3.0[a]	418.8
Uruguay	274.5	1.3[b]	356.8
Venezuela	2,603.4	5.0[d]	13,017.2

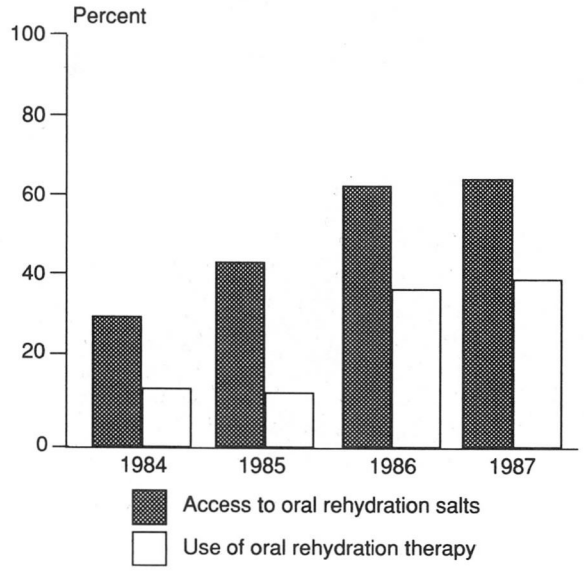
[a]Median for the Region, based on estimates available from the countries.
[b]Estimates from reports of national diarrheal disease control programs.
[c]Based on household surveys.
[d]Estimates for 1986.
Source: PAHO.

Republic is similar to that in the Bahamas, while its infant death rate is more than double.

The most recent information provided by the countries (see Annex III) shows that, despite a general decline in mortality from influenza and pneumonia in children under 1 year old compared to earlier figures, very large differences persist among the countries. Peru has displaced Guatemala as having the highest rate, 50 times higher than Canada's. The differences already cited continue to be seen among the developing countries: Peru's

FIGURE 6

Use of oral rehydration therapy and access to oral rehydration salts among children under 5 years of age in Latin America and the Caribbean, 1984 - 1987.



Source: PAHO (1989).

rate is almost six times those of Argentina, Cuba, Panama, and Uruguay.

The proportion of total infant deaths caused by influenza and pneumonia also differs greatly among the countries (see Annex III). In Guatemala and Peru these causes account for between 15% and 20% of the deaths, a proportion ten times higher than in the developed countries (Canada, 1.8%; United States, 2.0%). In the developing countries with lower mortality rates, the proportion of infant deaths due to influenza and pneumonia is one-third as large as in Peru and Guatemala, but still three times greater than in Canada or the United States.

The situation is similar for children aged 1 to 4 years, but the differences seen among the developing countries are more striking (Figure 7). Guatemala and Peru have the highest influenza and pneumonia death rates, but Guatemala's rate is twice that of Peru. The disparity with developed countries is much greater: the scope of the problem in Guatemala is 200 times larger than in Canada.

The proportion of deaths from influenza and pneumonia among children 1 to 4 years of age is more than 20% in the developing countries with the highest rates (Peru and Guatemala), representing a higher proportion in this age group than in children under 1 year old (see Annex III). In turn, this percentage is ten times higher than in the developed countries.

In this case, too, the most recent information reveals a decline in influenza and pneumonia death rates (see Annex III). Nevertheless, the differences between the countries remain: the mortality rates in Peru and Guatemala are still 100 times higher than those in Canada and the United States.

In the more developed countries, the proportion of deaths from influenza and pneumonia is half (or, in the case of Uruguay, a third) what it is in Guatemala and Peru. Although the rates in the more developed Latin American countries are ten times less, they are still ten times higher than those in developed countries such as Canada; it is noteworthy that Uruguay's rate is only twice as high, while the percentage of deaths is four times greater than in Canada.

Trend analysis shows that influenza and pneumonia mortality rates generally have diminished during the 1980s. However, the magnitude of the decrease differed in each country (see Annex III). In developed countries such as Canada, despite already-low influenza and pneumonia mortality rates in both age groups, the rates decreased 15.7% annually in children under 1 year old (the steepest decline in the Region) and 9.7% annually in children aged 1 to 4 years.

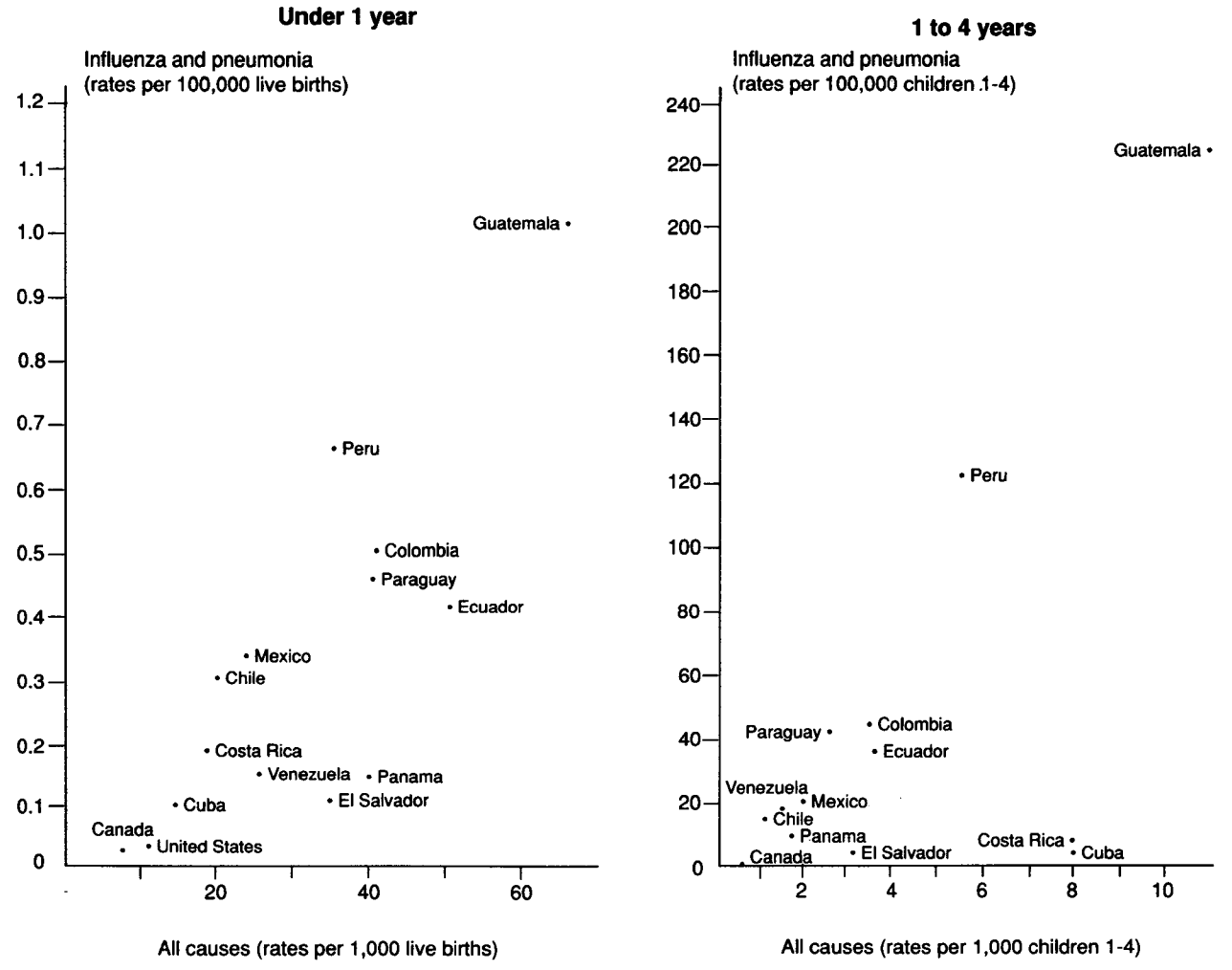
The developing countries present a different pattern. A sustained decrease of more than 10% annually has been observed in some of them, but in others the decline has been only half as rapid (Paraguay, 5.3%; Uruguay, 5.0%; Peru, 4.4%; Chile, 3.6%). On the other hand, the Dominican Republic's rates have increased by 26% annually since 1980, owing to the increase in the number of deaths recorded as stemming from these causes, which rose from an average of 167 at the start of the 1980s to an average of 312 at the midpoint of that decade.

The situation is different with respect to children 1 to 4 years old. Several developing countries show decreases of similar or even greater magnitude than that in Canada (Mexico, 18.1%; Ecuador, 12.9%; Cuba, 11.6%; Colombia, 11.4%; Argentina, 10.2%; Venezuela, 9.4%). However, the trend in one country (Peru) is toward a stable rate and in another (the Dominican Republic), toward increase. The number of such deaths in the latter country increased from 200 in 1980 to 274 in 1985.

The combination of high death rates and slow tendencies toward decrease creates a serious situation in some of the Region's countries. Three of the countries with the highest influenza and pneumonia mortality rates in children under 1 year old (Peru, Ecuador, and Paraguay) have the lowest trends toward decrease in the Region. The Dominican Republic, with a rate that is also among the highest, has shown a sustained increase since 1980. Thus, the differences between the countries with high influenza and pneumonia death rates and those with low rates are becoming even larger.

FIGURE 7

Relationship between mortality from influenza and pneumonia and mortality from all causes among children under 1 year and 1 to 4 years of age in selected countries, around 1987.



Source: PAHO (1989).

For children 1 to 4 years old, the pattern is similar. Peru, which has one of the highest influenza and pneumonia death rates, has a stable rate, whereas Canada, with the Region's lowest rate, records a decrease of nearly 10% annually. The gap that separates those two countries thus grows ever wider. Likewise, the Dominican Republic, although its rate is not as high as some countries, shows a trend toward increase, and in Paraguay, where the rate is also high, the trend toward decrease is small.

This information corresponds only to the mortality data reported by the countries, since data on the incidence of acute respiratory infections are not available. The studies carried out show a similar incidence in both the developed and developing countries: between four and eight episodes yearly per child. In the developing countries, however, a greater proportion of such episodes is attributable to bacterial pneumonia, which is a more serious illness, while the proportion of pneumonias is less in the developed countries.

Study of the incidence of pneumonia might elucidate the problem's magnitude and trend, but no data are available to date for the Region's countries that allow the prevalence of this disease in children to be determined.

The tendency toward decrease in mortality from influenza and pneumonia reflects the countries' incipient efforts to establish control activities; but despite these un-

dertakings, the magnitude of the rates and the slight trends toward decrease indicate that additional effort is required.

On the basis of available information, two basic strategies have been proposed to reduce the magnitude of pneumonia mortality in childhood: adequate and timely diagnosis and treatment of cases of acute respiratory infections by health services in order to identify pneumonia cases early, and improvement in the knowledge, attitudes, and practices of mothers and families so that they can detect signs of serious illness early and provide appropriate care for children at home.

Most of the Region's countries have already drawn up standards for the treatment of cases by the health services and, in some of them, control activities that have been established in selected areas will be extended to the entire country. The number of countries that had begun control activities increased during the 1980s, and it is hoped that greater trends toward reduction in mortality will be seen during the early 1990s as a result.

Diseases Preventable by Vaccination

In 1977, when the Expanded Program on Immunization (EPI) was established in the Region of the Americas, less than 30% of the children born every year were receiving the benefits of immunization. As the decade of the 1980s drew to a close, over 60% of the children born in the Region were receiving the protective course of all the vaccines included in the Program: DPT, OPV (oral polio vaccine), measles vaccine, and BCG (Figure 8). This coverage represents a historic high in the Americas. Even more important, data from the various countries in the Region show that for the first time there is more uniformity in coverage levels, with very few countries presenting levels below 50% for any of the EPI vaccines (Table 20). The present coverage levels are preventing some 10,000 deaths from measles, whooping cough, and neonatal tetanus and some 5,000 cases of poliomyelitis in the Region each year.

In spite of these accomplishments, much remains to be done: there are still approximately four million children who do not receive the benefits of complete immunization, and a very small proportion of women of childbearing age are being vaccinated with tetanus toxoid for prevention of neonatal tetanus. It is estimated that over 60% of newborns in the Americas may be exposed to neonatal tetanus because their mothers have not received this vaccine.

The challenges set forth in resolutions on the EPI adopted by both the World Health Assembly and the PAHO Directing Council include the following:

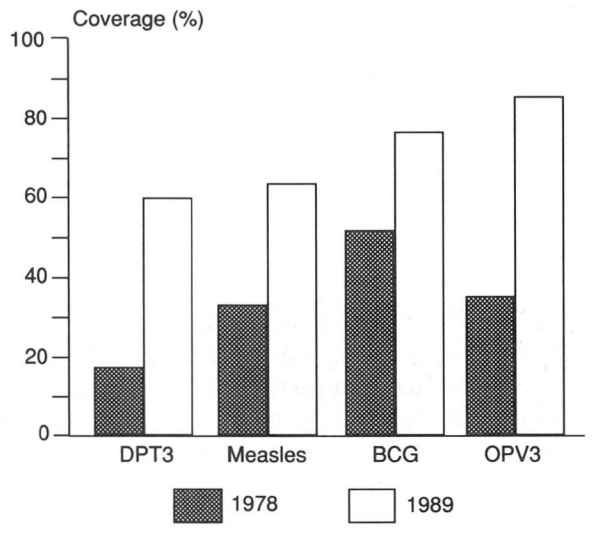
- Achievement and maintenance of high immunization coverage with all the vaccines included in the program in all countries.
- Effective control of the target diseases, including the eradication of indigenous transmission of wild poliovirus from the Americas by 1990 and from the world by the year 2000, the reduction of measles by 90% compared with preimmunization levels, and the elimination of neonatal tetanus by 1995. In the Americas, several countries, including Canada, Cuba, the United States of America, and all English-speaking Caribbean countries, have targeted measles for elimination.
- Inclusion in the program of new or improved vaccines, such as MMR (measles, mumps, rubella) and hepatitis B vaccine.

The control of vaccine-preventable diseases will require that immunization continue to increase and be maintained at high levels and that surveillance systems be developed to measure the impact of vaccination activities. To achieve and sustain high immunization levels, the following major areas need to be addressed:

- Immunization at every opportunity. Provision of immunization should be encouraged in all health facilities that see women and children. Recent studies in various countries of the Americas have shown that nearly half of the women and children who visit a health facility for any reason and who are eligible to receive a dose of any vaccine do not receive this benefit, usually owing to a false contraindication, such as a minor illness with slight fever, a common cold, or diarrhea. These false contraindications should be eliminated and an appropriate immunization schedule should be used in every country. The minimum immunization schedule recommended by WHO and PAHO to provide early protection is as follows: at birth, BCG and OPV; at age 6 weeks, OPV and DPT; at 10 weeks, OPV and DPT; at 14 weeks, OPV and DPT; and at 9 months, measles vaccine.
- Reduction of drop-out rates. Services should be provided at times and places convenient for the users, and parents should be informed of the need to return for subsequent doses of those vaccines that require more than one dose, such as OPV and DPT. Defaulters should be identified and actively followed up.
- Use of National Vaccination Days. Particularly in those countries that are still endemic for polio or where coverage remains low, special vaccination days or weeks will be essential to close the gap. This strategy could also be directed to those areas where newborns are at risk for neonatal tetanus in order that all women of childbearing age receive at least two doses of tetanus toxoid. It should be emphasized that whenever special vaccination days or campaigns are used, they should be a complement to and not a replacement for the routine vaccination services.
- Utilization of special "mop-up" operations in those areas that surveillance has determined are at risk for cir-

FIGURE 8

Vaccination coverage among children under 1 year of age in Latin America and the Caribbean,1978 and 1989.



Source: Country data.

culation of wild poliovirus. These operations entail house-to-house vaccination of all children under 5 years of age with two doses of OPV given four weeks apart, regardless of their previous vaccination status.

Poliomyelitis. The impressive reduction in poliomyelitis cases, from 4,626 in 1977—the year the EPI was launched in the Americas—to 535 in 1984 (Figure 9), resulting from increased coverage with polio vaccine, paved the way for the decision to eradicate transmission of wild poliovirus from the Americas by 1990. Therefore, on 14 May 1985, the Director announced PAHO's commitment to this goal and called for support from all Member Countries and from other international agencies. The goal was formally established by Resolution XXII of the XXXI Meeting of the PAHO Directing Council in September 1985. The Director emphasized that activities related to the eradication of vaccine-preventable diseases must be considered within the context of EPI. Several international and voluntary agencies supported this effort, among them the United States Agency for International Development (USAID), UNICEF, the Inter-American Development Bank (IDB), the Canadian Public Health Association (CPHA), and Rotary International.

The strategy for the eradication of poliomyelitis is based on three components: achievement and maintenance of high immunization levels with OPV; enhanced surveillance, which is necessary to document and to initiate investigation of each case that occurs as well as to certify when cases are not occurring; and outbreak control, necessary to stop transmission whenever a new case is detected.

A Technical Advisory Group was established to guide the Organization in its technical cooperation in this program. The countries were classified into two groups: Group I consists of polio-infected countries, which are defined as those countries reporting indigenous cases of polio due to transmission of wild poliovirus during any of the previous three years. Group II is made up of polio-free countries, which are those countries reporting no indigenous cases of polio due to transmission of wild poliovirus within the last three years. Group II was subdivided into two subgroups: those countries at high risk of polio transmission because their immunization coverage was less than 80% for children under 1 year of age in any of the previous three years, and those countries at low risk of polio transmission because their immunization coverage was more than 80% for the same age group during the same time period.

This classification of countries was the key for implementation of the vaccination strategies to achieve and maintain high immunization coverage. For those countries classified in Group I, it was recommended that national vaccination days for OPV be held at least twice a year, as a complement to their routine vaccination program. Advantage should be taken of these national vaccination days to also administer the other EPI antigens. Countries classified in Group II would need to maintain at least 80% coverage of the target population by reinforcing their routine vaccination activities, and should also assure high levels of disease surveillance. To this end, a network of laboratories was established to support surveillance efforts.

The eradication strategies were initiated in 1986, and gradually all countries started to adapt their programs to this effort. By the beginning of 1987, for example, all Group I countries were holding national vaccination days for OPV, as recommended, and surveillance was intensified in all countries. The results were the substantial increase in vaccination coverage with OPV and an enormous reduction in disease incidence. The number of cases dropped sharply, from 946 in 1986 to 128 in 1989 (Table 21). Meanwhile, surveillance has improved considerably, as indicated by the fact that while the number of confirmed polio cases has decreased, the number of reported probable cases (flaccid paralysis of acute onset) increased from approximately 1,500 in 1986 to over 2,000 in 1989, as shown in Figure 10.

Another indicator of the reduced circulation of wild poliovirus is the number of infected counties in the coun-

TABLE 20

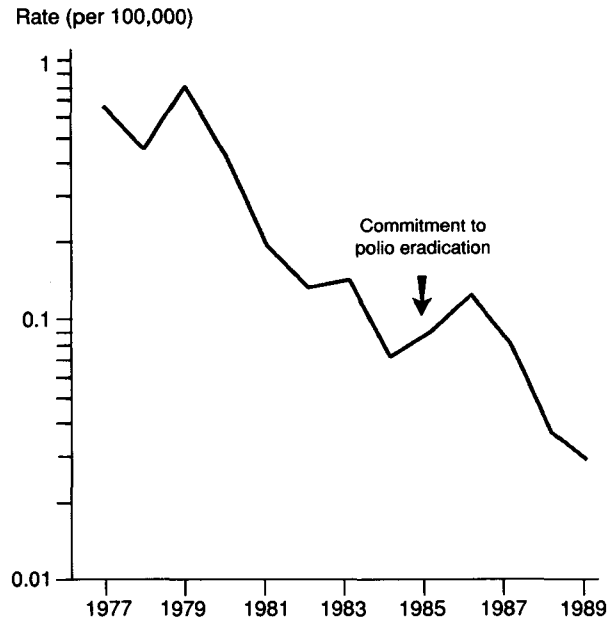
Immunization coverage, by country in the Americas, 1989.

	Target pop. (under 1 yr)	BCG (%)	DPT3 (%)	OPV3 (%)	Measles (%)
Andean Area					
Bolivia	271,200	70	40	50	70
Colombia	834,180	90	75	92	73
Ecuador	316,000	91	55	63	56
Peru	670,000	61	58	59	52
Venezuela	569,000	68	55	67	49
Brazil	3,617,900	66	51	96[a]	55
Caribbean					
Anguilla	157	99	99	99	91
Antigua & Barbuda	1,088	–[b]	99	99	95
Bahamas	5,600	–	...	...	...
Barbados	4,032	–	...	...	...
British Virgin Islands	238	99	99	97	86
Cayman Islands	378	80	93	93	88
Dominica	1,715	99	92	93	87
Grenada	2,613	–	86	85	89
Guyana	17,658	76	77	79	69
Jamaica	57,487	99	85	84	71
Montserrat	199	–	...	...	...
St. Kitts & Nevis	924	–	99	99	90
Saint Lucia	3,530	99	92	93	90
St. Vincent & the Grenadines	2,482	98	97	97	99
Suriname	10,000	–	72	71	73
Turks & Caicos	250	99	89	89	76
Trinidad & Tobago	23,280	–	77	77	59
Central America					
Belize	5,270	–	...	...	...
Costa Rica	82,600	–	88	91	88
El Salvador	182,173	62	64	72	73
Guatemala	343,200	–	51	57	52
Honduras	183,600	75	77	83	86
Nicaragua	146,500	90	64	82	61
Panama	61,900	90	71	71	75
Latin Caribbean					
Cuba	187,529	96	94	94[a]	97
Dominican Republic	202,300	40	46	75	46
Haiti	201,707	40	50	50	31
Mexico	2,579,200	80	65	96[a]	85
North America					
Bermuda	1,240	–	...	...	...
Canada	385,900	–	...	...	...
United States	3,809,000	–	...	...	...
Southern Cone					
Argentina	668,000	93	74	81	78
Chile	279,150	98	94	94	89
Paraguay	121,877	58	67	71[a]	58
Uruguay	56,600	97	82	82	75
Total	15,907,657	75	61	86	67

[a]OPV coverage is for two doses; country holds regular vaccination campaigns.
[b]Countries marked "–" do not use BCG.
Source: PAHO. Expanded Program on Immunization.

FIGURE 9

Reported cases of paralytic poliomyelitis per 100,000 population in the Americas, 1977 - 1989.



Source: PAHO (1990).

tries of the Region. Of a total of over 13,000 counties in the Americas, only around 90 were found to harbor confirmed cases of polio in 1989, compared with over 500 in 1986. Less than five million people were living in those counties during 1989.

Surveillance for the circulation of wild poliovirus was initiated by mid–1989. The circulation of the virus is tracked by isolation of poliovirus from stools of probable cases of polio and by environmental sampling. During 1988, 3,856 stool samples were examined and 37 wild polioviruses were isolated; during 1989 (as of week 39), only 17 wild polioviruses were identified from 2,529 stool specimens from 1,761 patients. These data suggest that transmission of wild poliovirus is now confined to very few geographic areas (Table 22) and that transmission has been interrupted in most of the Hemisphere.

In spite of all these successes, the efforts needed in the

TABLE 21

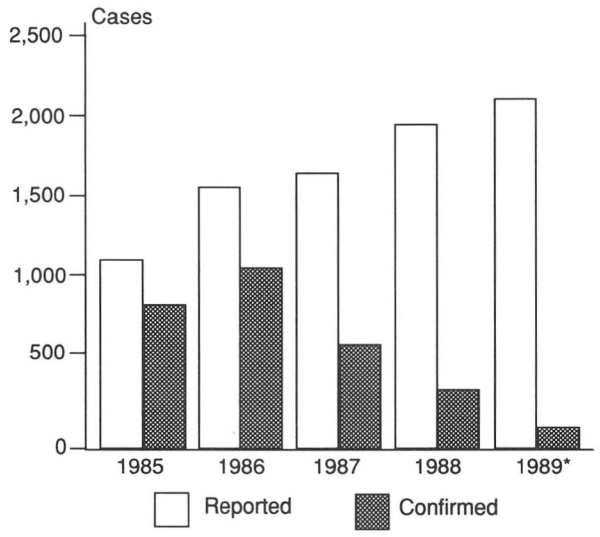
Confirmed polio cases, by country in the Americas, 1986–1989.

Subregion/country	1986	1987	1988	1989
Andean Area				
Bolivia	4	8	2	2
Colombia	66	120	33	14
Ecuador	20	10	8	3
Peru	43	42	55	16
Venezuela	27	48	28	17
Brazil	612	237	106	41
Caribbean				
Anguilla	...	–	–	–
Antigua and Barbuda	–	–	–	–
Bahamas	–	–	–	–
Barbados	–	–	–	–
British Virgin Islands	–	–	–	–
Cayman Islands	–	–	–	–
Dominica	–	–	–	–
Grenada	–	–	–	–
Guyana	–	–	–	–
Jamaica	–	–	–	–
Montserrat	–	–	–	–
St. Kitts and Nevis	–	–	–	–
Saint Lucia	–	–	–	–
St. Vincent and the Grenadines	–	–	–	–
Suriname	–	–	–	–
Turks and Caicos	–	–	–	–
Trinidad and Tobago	–	–	–	–
Central America				
Belize	–	–	–	–
Costa Rica	–	–	–	–
El Salvador	20	55	12	2
Guatemala	33	23	38	3
Honduras	6	13	6	2
Nicaragua	–	–	–	–
Panama	–	–	–	–
Latin Caribbean				
Cuba	–	–	–	–
Dominican Republic	2[a]	1[a]	1[a]	–
Haiti	36	12	8	2
Mexico	66	80	19	25
North America				
Bermuda	–	–	–	–
Canada	–	–	3[a]	–
United States of America	8[a]	10[a]	9[a]	–
Southern Cone				
Argentina	–	1[a]	4[a]	–
Chile	3[a]	1[a]	–	
Paraguay	–	–	–	–
Uruguay	–	–	–	1[a]
Total	946	661	332	128

[a]All vaccine-related.
Source: PAHO. Expanded Program on Immunization.

FIGURE 10

Reported and confirmed cases of paralytic poliomyelitis in the Americas, 1985 - 1989.



*Provisional data.
Source: PAHO (1990).

TABLE 22

Wild poliovirus isolations, Region of the Americas, January–December 1989.

Country/ site	No. of isolations	Virus type	Last onset
Brazil	2	P3	19 Mar 89
Paraíba	1	P1	
Rio Grande do Norte	1	P1	
Colombia	4	P3	1 June 89
Antioquia	1	P3	
Arauca	1	P3	
La Guajira	1	P3	
Risaralda	1	P1	
Mexico	10	P3	18 Oct 89
Sinaloa	9	P3	
Sonora	1	P3	
Venezuela	1	P1	27 Mar 89
Guárico	1	P1	

Source: PAHO. Expanded Program Immunization.

next few months are considerable. Nevertheless, the goal of eliminating indigenous transmission of wild poliovirus from the Region appears to be nearly accomplished.

Measles, Diphtheria, Whooping Cough, and Tetanus. While surveillance for poliomyelitis has reached high levels, surveillance is still deficient for these other vaccine-preventable diseases. The overall tendency is toward a continuous decline in case numbers over the last 14 years (Figure 11).

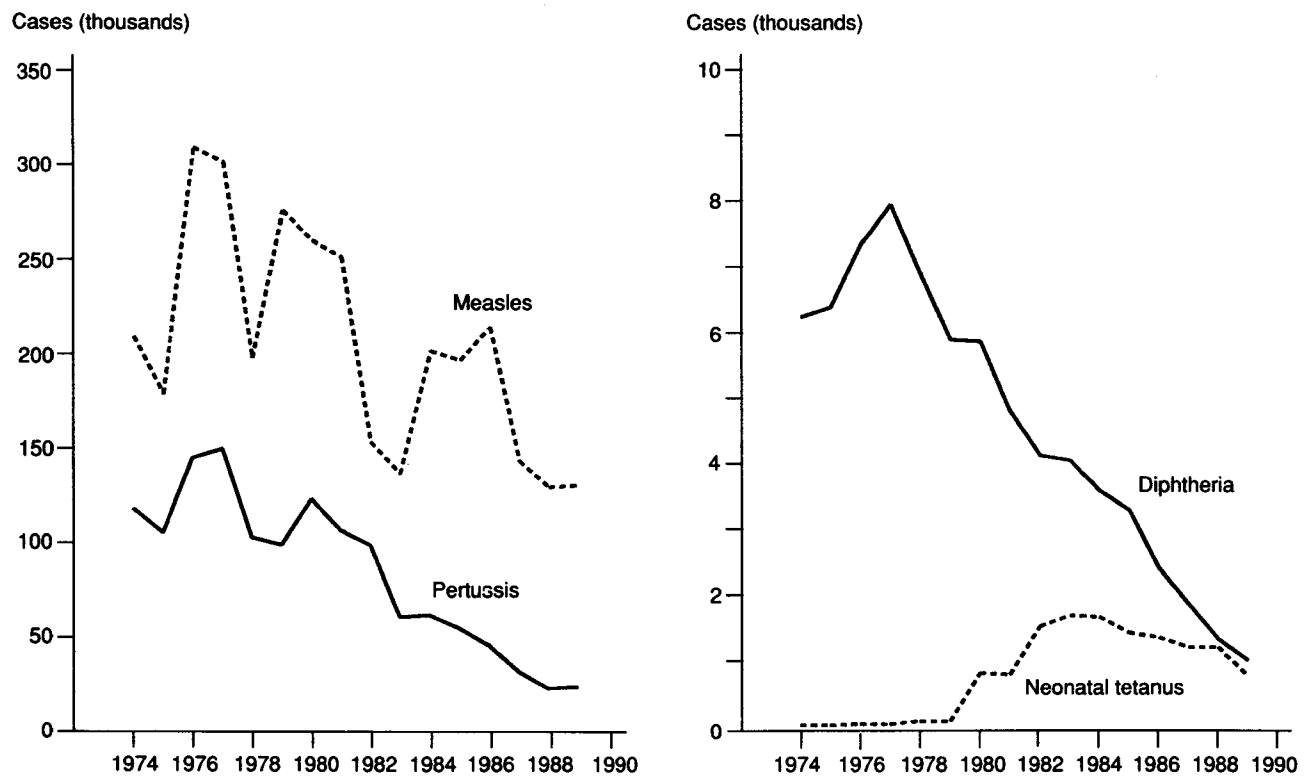
Increased experience with measles vaccination programs in the Region has demonstrated that partial coverage of a population with measles vaccine not only protects the individuals vaccinated, but also alters the epidemiology of the disease. The intervals between epidemic cycles increase from every two years to every four or five years. However, more aggressive vaccination strategies will be required if transmission is to be completely interrupted. Such strategies may include mass vaccination of a larger age group of children, for example, those under 15 years. Until this can be accomplished and transmission is permanently interrupted, most countries should expect periodic measles outbreaks, even if vaccination coverage levels are high. Therefore, it is important to anticipate that these outbreaks will occur and to investigate them to assure that individual protection against measles remains high. It should be noted, however, that although some outbreaks may be dramatic, as in Chile in 1988 and in El Salvador, Honduras, and Guatemala in 1989, the immunization program does lead to a significant reduction in the impact of measles, particularly the number of deaths.

In the English-speaking Caribbean countries, measles cases reached an all-time low of 664 during 1987, down from 4,408 in 1984, and the disease was targeted for elimination by 1995. Canada, Cuba, and the United States have also targeted this disease for elimination. After a very successful measles vaccination campaign in 1987, disease transmission is on the verge of being interrupted in Cuba; fewer than ten cases of measles were detected there during 1989, in spite of intensive surveillance. The experience of these countries with measles control strategies will set the stage for its elimination in the Region in the 1990s.

As observed in Figure 4, neonatal tetanus went practically unreported until 1978, when surveillance efforts were initiated. This epidemiological silence partly stemmed from the fact that the International Classification of Diseases grouped neonatal tetanus together with other conditions originating in the perinatal period. Since 1978, when data became available, the disease has shown a declining trend. However, these data should be interpreted with caution, because studies conducted during

FIGURE 11

Reported cases of diseases preventable by vaccination in the Americas, 1974 - 1989.



Source: PAHO (1990).

1988 and 1989 in Bolivia, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, Peru, and Venezuela have revealed several areas in which risk for this disease is high, with prevalence rates of over 10 cases per 1,000 live births. As this information became available, these countries began special vaccination campaigns of all women of childbearing age who reside in those areas.

Health of Adolescents

According to the World Health Organization's definition, adolescence occurs in the second decade of life (10 to 19 years) and youth between 15 and 24 years of age. These chronologic definitions do not necessarily coincide with the duration and appearance of the biological, social, and psychological changes that characterize this transition period and that many cultures believe begin with puberty.

Numerically, adolescents represent approximately 25% of the total population of the Region of the Americas. It is estimated that by the year 2000 this group will number 224.4 million, close to 70% of whom will live in Latin America and the Caribbean.

The health problems of adolescence and youth tend to be quite different from those occurring at earlier ages and are characterized by a high burden of psychological and social problems and a low number of organic disorders. This fact exerts a far-reaching influence on the availability of information for analyzing the health conditions of this group, since the lack of data about disease incidence is compounded by the scarcity of recording of psychosocial problems. Furthermore, these conditions seldom prompt visits to health centers, partly because the services lack the capacity for meeting the needs of adolescents.

Analysis of existing mortality information as well as data from surveys and special studies provides a general picture of the group's main health problems.

Mortality

A review of mortality data reveals certain differences between the age groups 10 to 14 years and 15 to 24 years, and so it is appropriate to analyze the two groups separately.

Death rates are lower in the group aged 10 to 14 years and are similar to those of children 5 to 9 years old. The disparity between the developing and developed countries continues: death rates in the former are in general between two and five times higher than in the latter (Table 23). Differences are also seen among developing countries; for example, the mortality rates in Chile and Uruguay are approximately half those in Honduras and Ecuador.

The differences in death rates reflect the persistence of health problems related to deficient living conditions in many of the Region's developing countries. Infectious diseases are still among the five principal causes of death in the countries with high mortality rates, in contrast to the mortality profile of countries with lower rates, in which the main cause of death is accidents. In Canada, the United States of America, and Cuba, accidents are responsible for half the deaths in this age group, while in Honduras, Ecuador, and El Salvador, they account for about a third. In these countries with high death rates, diarrheal diseases and influenza and pneumonia still cause between 5% (El Salvador) and 24% (Guatemala) of the deaths in individuals between 10 and 14 years of age (Table 24).

Some differences in mortality between the sexes are found in the 10- to 14-year age group (Table 25), but they are not as significant as in the group aged 15 to 24 years (see Annex III). In some countries (Guyana, Cuba, and Uruguay), the mortality rate in females aged 10 to 14 years is approximately half that in males. The difference is less in countries with lower rates (United States and Canada).

In general, a trend toward decrease in death rates is evident, and in some countries with high mortality the decline is more rapid than in the developed countries: both Guatemala and Ecuador have trends toward decrease greater than or similar to those in Canada and the United States. The developing countries with low death rates have slighter tendencies toward decrease. Nevertheless, given that diarrheal diseases and influenza and pneumonia are vulnerable to control measures, it is noteworthy that the decline in deaths from these diseases is lower (3.4% and 3.3%, respectively) than the high percentage of decrease in Guatemala's death rate (10.5%).

Death rates among the group aged 15 to 24 years are higher than among the 10- to 14-year age group in both the developed and developing countries. The differences between the countries are not as pronounced as in the younger group, however. For example, the rate in Guatemala is a little more than double that in the United States. Costa Rica and Uruguay, developing countries with low death rates, have rates lower than those of Canada and the United States.

The principal causes of death in the 15- to 24-year age group are also different from those in previous groups. In most of the countries, a high percentage of the deaths are due to accidents, homicides, and suicides, and heart disease is emerging as a health problem in the group. Nevertheless, infectious diseases continue to affect the health of youth in the less developed countries: among the five main causes of death are diarrheal diseases in Guatemala and Honduras; influenza and pneumonia in Guatemala, Peru, Puerto Rico, and Trinidad and Tobago; and tuberculosis in the Dominican Republic, Ecuador, and Peru.

The difference in mortality between the sexes is very significant in this group (see Annex III). The death rate in males is between two and three times greater than in females. The burden of sociopolitical problems is evident in the difference in rates by sex in El Salvador, where the rate among males is almost five times higher than among females chiefly because of deaths by homicide, legal intervention, and war operations.

The reproductive capability of females in this age group is also reflected in the mortality structure. In many developing countries, the complications of pregnancy, childbirth, and the puerperium are among the five principal causes of death (Table 26). This situation is seen not only in countries with high death rates but also in those with lower mortalities. For example, in Uruguay, which has a lower rate than Canada, pregnancy complications are the fourth leading cause of death in females in this age group.

High-risk Behavior

Behaviors entailing a high risk of health damage or death occur with great frequency in adolescence and youth. Such behaviors and problems may originate during childhood from predisposing biological, social, and ecological factors and may persist into adolescence and later stages. Their appearance during adolescence may be caused by the pressures exerted by peers or other social groups on individuals who are especially vulnerable as a result of underlying factors. The effects of some of these risk behaviors may present themselves later in life as more serious chronic problems.

Tobacco smoking is the most common and extensive

TABLE 23

Mortality in children 10 to 14 years old in selected countries, around 1978 and 1985.

Country	Year	No.	Rate[a]	Year	No.	Rate[a]
Antigua and Barbuda	1978	7	77.8	...	...	...
Argentina	1978	1,232	49.8	1985	1,112	40.4
Bahamas	1978	9	34.1	1985	13	51.1
Barbados	1978	15	48.2	1984	7	27.1
Belize	1978	10	52.1	1984	6	32.9
Brazil	1978	7,304	...	1986	7,839	51.4
Canada	1978	751	35.6	1986	403	22.5
Chile	1978	643	53.9	1986	461	36.8
Colombia	1977	2,372	72.9	1984	1,747	55.2
Costa Rica	1978	118	42.6	1986	113	39.6
Cuba	1978	549	46.4	1987	485	45.2
Dominica	1978	6	60.0	1985	1	10.6
Dominican Republic	1978	354	46.9	1985	311	36.4
Ecuador	1978	1,058	110.0	1986	802	67.3
El Salvador	1981	534	93.2	1984	372	63.5
French Guiana	1978	11	141.0	1984	3	33.3
Guadeloupe	...	...	...	1981	13	31.3
Guatemala	1978	1,629	194.9	1984	984	100.3
Guyana	1978	66	58.8	1984	72	67.9
Honduras	1978	338	76.2	1981	344	69.2
Jamaica	1977	110	35.7	1984	115	42.0
Martinique	1975	15	31.6	1985	8	26.8
Mexico	1978	6,435	76.8	1983	5,674	56.6
Nicaragua	1977	193	53.4	...	...	...
Panama	1978	242	107.6	1987	104	37.3
Paraguay (area of information)	1978	155	70.5	1986	145	53.1
Peru	1978	1,337	64.4	1986	1,334	59.3
Puerto Rico	1977	151	42.0	1986	91	27.2
St. Kitts and Nevis	1978	6	113.2	1985	1	18.9
St. Vincent and the Grenadines	1978	6	48.3	1986	8	57.7
Suriname	1978	24	39.1	1985	28	58.3
Trinidad and Tobago	1978	46	34.3	1983	61	51.9
United States of America	1978	6,381	33.7	1986	4,706	28.4
Uruguay	1978	110	44.0	1986	94	35.3
Venezuela	1978	1,043	59.0	1983	964	50.7

[a]Per 100,000 population in the age group.
Source: PAHO. Technical Information System.

form of drug consumption and, together with accidents, is the most important preventable cause of death in the developed countries. The most important focus of intervention is preadolescence and adolescence because the smoking habit is induced at this stage of life through exposure to the parents' example, commercial and peer pressures, and the widespread availability of tobacco. The habit is more frequent among adolescent females in Europe and the United States, while in Latin America and the Caribbean it occurs more often in males. Nevertheless,

TABLE 24

Percentage of deaths[a] due to accidents, diarrheal diseases, and influenza and pneumonia in children 10 to 14 years old, in selected countries, around 1987.

Country	Year	Percentage of deaths by:		
		Accidents[b]	Diarrheal diseases	Influenza and pneumonia
Canada	1986	46.7	...	1.2
Cuba	1988	59.5	0.2	0.9
Ecuador	1987	38.6	2.6	6.8
El Salvador	1984	45.1	5.1	2.0
Guatemala	1984	11.9	23.8	18.0
Honduras	1981	30.2	13.6	2.0
United States of America	1987	49.7	0.0	0.9

[a]The percentages are based on total deaths from defined causes.
[b]Includes categories E800–E949, E980–E989, except for Cuba, El Salvador, and Honduras from which this information is not available. For those countries, includes total from external causes (E800–E999).
Source: PAHO. Technical Information System.

TABLE 25

Mortality rate[a] in children 10 to 14 years old, by sex and country, around 1986.

Country	Year	Both sexes	Males	Females
Brazil	1986	51.4	63.1	39.6
Ecuador	1986	67.3	75.7	58.7
El Salvador	1984	62.5	70.7	54.2
Guatemala	1984	100.3	112.3	87.9
Guyana	1984	67.9	90.7	44.1
Honduras	1981	69.2	80.5	57.8
Argentina	1985	40.4	47.4	32.1
Chile	1986	36.8	44.7	29.2
Costa Rica	1986	39.6	48.9	30.0
Cuba	1987	45.2	57.7	32.0
Uruguay	1986	35.3	46.7	23.7
Canada	1986	22.5	26.6	18.3
United States of America	1986	28.4	36.1	20.3

[a]Per 100,000 inhabitants in the age group.
Source: PAHO. Technical Information System.

general trends indicate that larger numbers of young females than young males are beginning to smoke. Figure 12 shows the differences in smoking behavior between the two sexes.

In females, smoking during adolescence and youth not only increases the risk of cancer in adult life, but also heightens the probability of cardiovascular diseases at later ages in those who also use oral contraceptives. In addition, smoking during pregnancy increases perinatal risk in any age group.

Consumption of alcoholic beverages by young people and adults is increasing, as are the death rates related to this risk behavior. In addition, pathological patterns of alcohol consumption have their basis in adolescence and youth and become manifest several decades later. Evidence indicates that adolescents are rarely frequent alcohol consumers, but rather prefer intense but sporadic consumption with their peers and away from home (WHO, *Facts for Action,* Technical Discussions on the Health of Youth, Geneva, 1989).

Figure 12 shows the levels of alcoholic beverage consumption (during the month before the survey) by young people of both sexes. In all the countries, males consumed alcohol more often and possibly in greater quantities than females. The differences among the countries are significant.

Alcohol's effects may be acute (intoxication, a state that frequently leads to accidents and violent actions) and chronic (conditions including central nervous system disorders as a result of the direct effects of alcohol or associated nutritional deficiency).

Young people ingest alcoholic beverages for the same reasons as adults: alcohol reduces social inhibitions, produces pleasure, and facilitates relations among peers. In addition, drinking is often a symbol of maturity. Its meaning is different for the two sexes, however. It is more accepted among males, who drink more regularly and in

TABLE 26

Mortality from complications of pregnancy, childbirth, and the puerperium in women 15 to 24 years old, by country, around 1985.

Country	Year	Order of importance	Deaths	Rate[a]	Percentage[b]
Argentina	1985	4	90	3.9	7.2
Brazil	1986	3	607	4.3	7.0
Chile	1986	3	51	4.1	8.8
Cuba	1987	4	40	3.6	3.8
Dominican Republic	1985	3	46	6.5	10.5
Ecuador	1986	2	95	9.8	11.1
El Salvador	1984	3	42	9.0	8.9
Guatemala	1984	5	56	7.6	5.1
Guyana	1984	3	4	3.9	5.3
Honduras	1981	5	11	3.0	4.3
Mexico	1983	2	686	8.8	11.3
Panama	1987	4	8	3.4	7.2
Paraguay	1986	2	41	17.8	21.4
Peru	1983	4	136	7.3	8.5
Suriname	1985	2	4	8.9	11.8
Trinidad and Tobago	1983	5	4	3.2	5.5
Uruguay	1986	4	5	2.1	4.9
Venezuela	1983	3	90	5.4	7.5

[a]Per 100,000 women in that age group.
[b]The percentages are based on total deaths from defined causes in that age group.
Source: PAHO. Technical Information System.

larger amounts, and for whom the risks of accidents and violence are greater.

The association between heavy alcohol ingestion and consumption of tobacco and illegal drugs is strong. In addition, heavy drinking among young people is strongly associated with having parents who also drink heavily (WHO, *Facts for Action,* 1989). Fortunately, very few adolescents and youths who consume alcohol develop a dependence on it or become problem drinkers.

The **consumption of psychoactive substances** has increased regionally and globally. From 10% to 30% of adolescents have consumed drugs; fortunately, however, most of them limit their use of illegal drugs to passing experimentation.

In recent years, the traditional and cultural use of psychoactive substances has not only continued but has increased enormously throughout the world, and this behavior has had the greatest effects on preadolescents and adolescents.

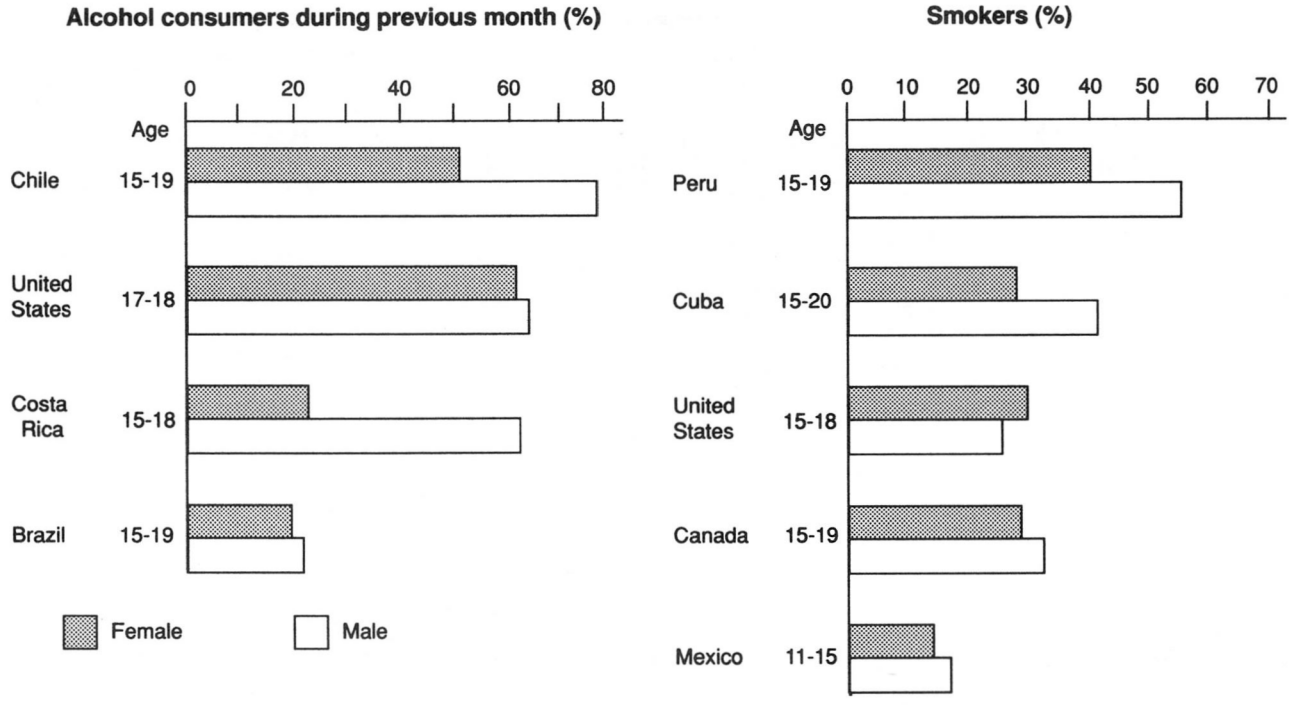
As with alcohol, drug use frequently starts in adolescence, although it becomes chronic at later ages. The drugs used depend on the supply and the size of the demand. Users usually feel alienated from school and home—frequently ending up far from their families, which may have serious problems—and associate with groups in which drug use is common. The parents of such adolescents are often also dependent on alcohol, tranquilizers, or other drugs.

The implications of illegal drug use vary according to drug type, its method of administration, and the consumer's emotional, physical, and nutritional status. Taking drugs in combination potentiates their effects. The impact is seen not only in the individual but also in the family and society.

Cannabis is the illegal drug used most extensively by the world's young people, and its use is associated with tobacco and alcohol consumption. Wide regional variations exist in women's use of this drug. Heroin is the opium derivative used most extensively among urban youths in developed and some developing countries, and is associated with unemployment and social deprivation. Use of cocaine and its derivative, crack, has become wide-

FIGURE 12

Prevalence of smoking and consumption of alcoholic beverages among adolescents, by sex, in selected countries, around 1985.



Source: WHO. The Health of Youth, Facts for Action. 1989.

spread owing to decreases in price and increased supplies. Some heroin and cocaine users ingest large doses of other drugs concomitantly.

The phenomenon of inhaling the fumes of paints, glues, and organic solvents is almost always confined to preadolescence and early adolescence among poor children in urban areas.

The beginning of reproductive ability in adolescent girls profoundly influences the profile of health problems. In the section on the health of women, the health status of women in the Region in relation to this important physiological and social function is analyzed. However, given the special characteristics of reproduction during adolescence, and the important role it plays in many countries in determining the level of health of the infant population, certain aspects of **reproductive health** in adolescence should be noted.

The fertility pattern throughout the reproductive period is usually established during adolescence. The average age of menarche is falling around the world, probably as a result of better health and nutrition. Although age at marriage is increasing in many parts of the world, especially in urban areas, girls marry or enter stable unions shortly after puberty in rural areas and are expected to have children almost immediately afterward.

Depending on cultural conditions and social values, the age at which sexual relations begin varies between countries and regions of countries. In general, the proportion of boys who have premarital relationships is higher than that of girls. For example, in Brazil 64% of boys aged 15 to 17 years have begun sexual activity, compared to 13% of the girls in the same age group. Adolescent sexual activity is a major indicator of early pregnancy risk. The proportion of girls with sexual experience before age 15 is substantial (Table 27), but significant differences are found among countries; seven studies of adolescent fertility found rates ranging from 30.2% in Jamaica to 12.7% in Mexico City. In the 15- to 19-year age group, the proportion increases considerably and levels become more similar, with ranges from 74.3% in Panama to 66.4% in Jamaica. The proportion of male adolescents with sexual experience before age 15 years is higher, ranging from 70.7% in Jamaica to 26.9% in Mexico City (Table 27). Studies of sexual behavior in

TABLE 27

Percentage distribution of adolescents with sexual experience, by age at first coitus (before 15 years and between 15 and 19 years) and by sex, in some countries of the Region.

Country/ city	Year	Females		Males	
		<15 years	15–19	<15 years	15–19
Brazil	1986	17.4	68.8	...	...
Costa Rica	1986	17.3	71.8	...	...
Guatemala	1986	17.4	72.8	44.8	52.7
Jamaica	1987	30.2	66.4	70.7	28.2
Mexico City	1985	12.7	72.2	26.9	68.4
Panama	1984	13.0	74.3	...	...
Paraguay	1987	14.7	67.4	...	...

Source: Morris, L. Experiencia sexual y anticoncepción en jóvenes de algunos países de America Latina, 1987.

several parts of the world show that premarital sexual activity is generally circumstantial, infrequent, and sporadic.

Despite the decline in fertility rates in women younger than 20 years, as in other groups, the total number of births to adolescents is increasing because the number of people in that age group is growing. In some Latin American countries, up to 40% of adolescent pregnancies occur in girls under 18 years old. The risk of serious morbidity or death is known to rise as the age of the adolescent mother decreases; certain frequent complications are hypertensive disease (eclampsia), dystocia, and sequelae (vesicovaginal fistula).

The incidence of maternal deaths also increases. In the developing countries, the average maternal death rate among adolescents is approximately 450 per 100,000 live births, compared to the 30 per 100,000 in the developed countries. In Jamaica, pregnant adolescents younger than 15 years have a probability of dying four to eight times greater than those aged 15 to 19 years.

Perinatal and infant mortality is also higher among the children of adolescent mothers, in part because of the higher incidence of low birthweight. In Cuba, for example, pregnancies in adolescents aged 15 to 19 years resulted in a perinatal mortality rate of 33 per 1,000 live births, compared to only 14 per 1,000 live births for pregnancies in women 20 to 25 years old. Complications and the excess mortality in these groups of mothers and children could decrease dramatically with increased coverage and good care. Unfortunately, the younger the mother at the time of pregnancy, the less care she receives because of her lower socioeconomic status and inadequate levels of education, guidance, and support.

When young people are parents, their possibilities of education and employment are more limited, regardless of their marital status. Abortion is frequently chosen as a solution to an unwanted pregnancy, and when this procedure is done illegally, it increases the risks to the woman.

With regard to the use of protection during sexual relations, surveys of fertility in adolescents indicate that much work is needed (Table 28). For example, the proportion of women younger than 20 years who used a contraceptive method during their first premarital coitus ranged from 40% in Jamaica, to 21% in Mexico City, to 8.5% in Guatemala. Only 10.2% of adolescent men younger than 18 years in Jamaica were protected at first premarital coitus. For adolescent males under 20 years the proportion was 31.4% in Mexico City and 14.3% in Guatemala City. Further, the effectiveness of sex education leaves much to be desired, judging from the proportions of young people of both sexes between 15 and 24 years old who were unaware of the monthly fertile period after taking a sex education course.

Until a very short time ago, trauma and wounds were considered accidental phenomena. Today, **accidents and violent incidents** are recognized as conditions that have an epidemiologic history, are produced by factors that are amenable to preventive measures, and respond to early rehabilitation.

Lack of reduction of, and even increase in, mortality from accidents is a common trend and is more marked in young women. Between 1955–1959 and 1970–1979 the traffic accident death rate climbed more than 600% in Mexico, 250% in Venezuela, and 210% in Chile.

Accidents are directly responsible for many premature deaths, especially in young people, and it is believed that accidental deaths and serious sequelae are increasing. Together with acts of violence among young people, accidents represent an enormous burden for health services

TABLE 28

Percentage of adolescents who used contraception at first premarital coitus, by sex, in some countries of the Region.

Country/ city	Year	Females				Males			
		<15 years	15–17	18–19	Total 15–19	<15 years	15–17	18–19	Total 15–19
Brazil	1986	6.0	13.2	23.4	14.3	...	...	...	...
Costa Rica	1986	10.1	9.9	26.3	14.3	...	...	...	...
Guatemala	1986	0.0	4.0	25.0	8.5	14.7	13.9	22.9	14.3
Jamaica	1987	28.6	43.5	51.2	40.0	5.4	25.0	...	10.2
Mexico City	1985	14.6	17.3	30.2	21.0	16.3	30.2	50.0	31.4
Panama	1984	4.3	9.9	13.3	10.2	...	...	...	...
Paraguay	1987	9.3	10.3	16.5	11.7	...	...	...	...

Source: Adapted from Morris, L. Experiencia sexual y anticoncepción en jóvenes de algunos países de America Latina, 1987.

because of their frequency, seriousness, and lasting effects. They are linked to serious psychological conditions and consequences and are strongly associated with other risk behaviors.

For every child who dies in an accident, ten are disabled. In the United States of America, 140,000 people die each year as a result of accidents; for each death that occurs on the highway, there are 10 to 15 serious injuries and 30 to 40 lesser injuries requiring medical attention. Injuries and deaths from motorcycle accidents are especially serious and frequent.

Other major causes of death and sequelae are injuries caused by sports, fires, falls, poisonings, and drownings.

Accidents are the principal cause of death in males aged 15 to 24 years in most of the countries; in Colombia, homicide is the first cause of death in the age group and among young men. In Bogotá, according to unpublished data, homicide occupies second place among women aged 15 to 24 years old; it is in second place for both sexes in the United States. Suicide is the first cause of death in young women in El Salvador and Trinidad and Tobago, and the second among youth of both sexes in Canada.

Violence is a very complex phenomenon involving factors of a cultural, political, and socioeconomic nature, as well as elements related to group, family, and war. The increase in the supply and consumption of alcohol and psychoactive substances and the portrayal of various forms of violence in the audiovisual communications and other media may play roles.

Within the total context of health, special attention should be given to the physical harm, residual psychosocial problems, and large number of deaths suffered by children and adolescents as a result of armed conflicts that affect the lives of large groups of people in some of the Region's countries.

Changes in social habits and sexual behaviors, as well as demographic changes such as urbanization and migration, have important consequences for the incidence of **sexually transmitted diseases**; regrettably, however, epidemiologic surveillance and information systems regarding this problem are not very reliable in most of the countries. The highest incidence is found in the 20- to 24-year age group, followed by those 15 to 19 years and 25 to 29 years old. Although the overall morbidity rate is higher in men, the complications of these diseases are much more severe in women, partly because men seek diagnosis and treatment more promptly.

Health promotion through the provision of information and education—in order to bring about changes in sexual behavior and encourage the protection required to reduce risks—is perhaps the most effective means of control. Unfortunately, in the Region's countries, formal sex education either does not exist, is inadequate, or is provided quite late in adolescence. This task demands sustained, well-directed, and universal action. It is also important that patients and their sexual partners be encouraged to use protective measures. Health service and education personnel should be trained in basic sex education.

Acquired immunodeficiency syndrome (AIDS) (which is dealt with more fully in the section on communicable diseases) is a worldwide problem of huge proportions, affecting both industrialized and developing countries. At least 50% of HIV-infected persons are under age 25. Young people should know the facts about the disease to be able to protect themselves and their

loved ones. The infection and its consequences are changing many aspects of young people's lives and modifying the context in which they make decisions about their behavior. Since adolescents, even if they are aware of the risk, often do not know how to avoid the infection, education about sexual and social behavior should be stressed. Promoting the adoption of healthy lifestyles and good behavior in a broad sense is essential to prevent this and other problems. The educational system and youth organizations can be the principal foci of such activities.

Nutrition during childhood and adolescence has major short- and long-term repercussions. This area provides an example of the great value of the preventive approach to health throughout the different stages of life.

For adolescents, rather than there being an ideal weight, there is an acceptable range for a given stature as expressed by the body mass index. Energy requirements are based on growth rate (which is accelerated), basal metabolism, and the amount of physical activity; this last factor varies according to the social group, culture, age, sex, and other influences.

Particularly in the initial stage, pregnancy presents a shock to the adolescent body, which is in a rapid growth phase with few reserves and great anabolic demand. In addition, in disadvantaged social groups, a decrease in physical activity is not an option, and the nutritional requirements of the mother and fetus are not adequately met. The result that can be expected is low or deficient weight at birth.

One of the common problems in this phase of life is the excessive consumption of certain food components (fats, sugars) and the deficiency of others in the diet. Dental caries is a frequent result of this situation. An increase in disorders such as anorexia and bulimia has been seen in industrialized countries; in developing countries, malnutrition has increased owing to lack of economic resources. The nutritional situation is complicated by the growing awareness of physical appearance during this stage of life. Adolescents require the support of their families, educators, health workers, and food producers to be able to make informed decisions about food habits and their relationship to exercise and rest.

With regard to **existing resources,** the health of adolescents has received very little attention, since this age group experiences relatively low levels of biological or physical damage, in terms of morbidity and mortality. The psychosocial health concerns that are of enormous importance for the group have not received the interest they deserve, nor has the social importance of adolescents been given adequate consideration in the socioeconomic development plans of the Region's countries.

Technical, institutional, and financial resources aimed toward adolescents have been quite scarce in health sector programs. The area of reproductive health has received the most attention in some countries, in part because of the growing problem of adolescent pregnancy. Although this is a specialized area, existing programs could be improved to serve as a gateway for integrated adolescent health services.

There has not been a complete lack of interest in the problems of this age group, however. In fact, in almost all the countries several groups exist that conduct local adolescent health programs with the support of their own institutions, the education and social welfare sectors, and youth and other organizations with an interest in providing care to adolescents who need it. In addition, the countries have major holdings of publications about various aspects of adolescent health and well-being, which could serve as the starting point for data bases on demographic, epidemiologic, and operative aspects of adolescent health. Some specialized centers, such as the Adolescent Guidance Center (CORA) in Mexico, have made important contributions in the areas of research, training, and technological and educational development. All these activities, which benefit from the efforts of multidisciplinary groups, will provide valuable support for official initiatives that are being developed at the local, intermediate, and national levels. The building of networks that bring together multidisciplinary and multisectoral programs, centers, and institutions can be a useful strategy at the country, intercountry, or regional level.

The health services are not designed to deal with a group that is not adaptable to pediatric services nor to adult care services. Adolescents and young people do not visit the health services for problems related to sexual behavior or substance consumption because they fear encountering a lack of understanding, or they may delay the visit until the problem reaches an advanced stage. Creation of specialized adolescent in- and outpatient services is a pressing need in Latin America and the Caribbean. To meet it, the experiences of pioneer programs in the countries should serve as models that can be adjusted as needed. The training of existing personnel and the inclusion of epidemiological principles and multiprofessional teams in the services will gradually lead toward meeting the goal of integrated care that satisfies the biological and psychosocial needs of adolescents of both sexes.

Health of Adults

Health status during adulthood is a result of both an individual's growth and development as a child and the continuous influence of genetic, ecological, social, and cultural factors that affect survival and society's productive activity.

The diversity of socioeconomic, cultural, and epide-

miological milieus gives rise to differences among the various societies with respect to characteristics of adult groups. Within the complex and varied situation found throughout the Region of the Americas, demographic shifts and changes in health profiles are signals of the large and growing health needs of adults and the elderly. In addition, the countries are beginning to give priority to the most prevalent problems in these populations and even more so to the need for social policies, plans, and programs aimed at the most vulnerable groups, particularly the elderly.

The demographic features that characterize the developing countries in Latin America and the Caribbean are intense population growth, rapid urbanization, a strong trend toward decreasing fertility, and an increase in life expectancy at birth. The total population of Latin America and the Caribbean countries will almost double in the 30 years between 1970 and 2000, rising from 280 million to about 550 million inhabitants. The urban population will triple during the same period, from 160 million to 420 million inhabitants, while the rural population will also grow in absolute numbers, though less sharply, from 120 million to 130 million. In the year 2000, urban residents will form 76% of the total population, compared to 57% in 1970.

These demographic changes—together with the influence of processes such as industrialization, the economic crisis of the 1980s, and technological development, among others—are shaping the epidemiological profile and patterns of care in present-day societies.

The health needs of adults in the countries of Latin America and the Caribbean are framed within a broad and heterogeneous context in which the organization of work and social life plays a preponderant role.[8] Unfortunately, in characterizing problems that affect the well-being of these population groups, too little attention has been paid to the problems' relationship to variables linked to social life and employment. Among the factors associated with diseases and injuries, however, are those known as "lifestyle" determinants, which in general are linked to the consumption of alcohol, tobacco, and drugs; poor eating habits; insufficient physical exercise; and other unhealthy behaviors. Noncommunicable chronic diseases, accidents, and violence, as well as mental and degenerative disorders—which seem to be closely linked to the factors mentioned above—are assuming priority in the countries' morbidity pictures and mortality profiles. Thus, cardiovascular diseases are the leading cause of death in 31 countries in the Region; malignant tumors occupy second place as a cause of death in North America, the English-speaking Caribbean, temperate South America, Colombia, Costa Rica, and Cuba; accidents figure among the five leading causes of death in all the countries; and diabetes mellitus also appears among the leading causes of death in several countries in different subregions.

Other pathological and social conditions affect large numbers of the population, especially in the urban and suburban areas of Latin America and the Caribbean, and cause families and individuals great suffering. Among these problems are drug addiction, alcoholism, and violent and aggressive behavior, as well as mental illnesses, suicide, and neurologic disorders. Suicide, for example, is a major cause of death in countries of quite varied socioeconomic levels, such as Canada, Cuba, El Salvador, Suriname, and the United States of America.

At the same time, because of a greater number of disorders and injuries that result in sequelae, as well as a longer life expectancy, an increase in disabilities of various kinds is being noted in the general population of the Region. Little epidemiological information is available to document this increase, but surveys are now being initiated in several countries. Some social security institutes report that payments for permanent disabilities are on the rise.

Faced with this situation, health systems and services bear the heavy onus of finding solutions to a diverse array of problems, especially those of a chronic nature, that require complex and costly diagnostic, therapeutic, and rehabilitation techniques. These solutions overburden health sector budgets and increase inequalities in the care provided to the population.

Examination of the health situation of the adult and elderly population in the Region's countries leads to the conclusion that health promotion in its broadest application—that is, bearing in mind that meeting the health needs of all human beings implies having conditions that enable them to develop to their full potential[9]—would be the most basic strategy for adult health programs and policies. This strategy enables sectoral and intersectoral activities that contribute to creating healthy options in society to be ranked according to their priority, in order to provide everyone—individuals and groups, without any discrimination—with the opportunity of choosing the most healthy behaviors and lifestyles. Guided by these principles, selecting the factors that require action is relatively easy, since it is done in accordance with their epidemiological importance. However, the process of change is not easy to carry out, inasmuch as it requires measures that are clearly intersectoral, which means they demand greater effort on the part of the health sector during negotiation and consensus building.

Furthermore, both the execution of intersectoral activ-

[8]Health of Adults in the Americas: Present Situation and Proposal for Action. PAHO, Health of Adults Program, preliminary document, 1989.

[9]See footnote 8.

ities to promote health and the efficient and effective provision of health care require that efforts be made to bring about greater participation within society—especially by the targeted adults—in the organization of services and the preparation of plans and programs that promote well-being. The transformation of the services into agencies responsible for carrying out articulated and comprehensive promotion, prevention, treatment, and rehabilitation activities is another of the major strategies to be developed.

Finally, the use of increasingly complex and expensive technologies is a characteristic of present-day services. In caring for an adult and elderly population that is becoming more numerous, it is necessary that measures be taken and policies formulated to rationalize the use of these technologies in order to ensure the availability of those necessary for diagnosis and treatment, without inequitable social restrictions, and guarantee the quality of care given to the most unprotected sectors.

The Pan American Health Organization has established the following action strategies to help the countries decrease the magnitude and frequency of the principal health problems affecting adults and the elderly: promotion of health and changes in lifestyle through interventions, especially those directed to the entire population; transformation of local health services, with an increased focus on prevention; and analysis and rationalization of the use of complex and expensive technologies to correct major inequities and avoid unnecessary costs.

The predominant problems in this field are described below.

Noncommunicable Chronic Diseases

As the demographic and epidemiological changes occurring in the Region of the Americas become more marked, the magnitude and severity of noncommunicable chronic diseases also increase. Indeed, while fertility, infant mortality, and mortality from infectious and deficiency diseases continue to decline, life expectancy at birth, urban migration, and the size of the population are on the rise, resulting in the aging of the population structure. However, although this aging is a readily observable phenomenon and an important determinant, it does not by itself explain the changes in the Region's epidemiological profiles. Additional influences are exposure to environmental factors and especially changes in lifestyles, which in turn are related to, among other things, migration to urban and suburban areas.

It has recently become clear that migrants to urban areas experience changes in their lifestyles that result in the increased prevalence of noncommunicable chronic disease risk factors, notably arterial hypertension, overweight, and elevated serum cholesterol levels.[10] It is not surprising, then, that diseases of the circulatory system, various malignant neoplasms, and other chronic diseases—which are generically referred to as "noncommunicable chronic diseases"—have registered such striking increases in recent decades, together with injuries due to external causes.

Several limitations affect the comparability of mortality statistics among the countries, including the diversity in levels of medical certification of death and the underrecording of deaths and their unsatisfactory codification. The differences in the proportion of "ill-defined" diagnoses in the Region are only an additional expression of this problem. Despite these limitations, and the fact that mortality is only a negative measure of health, mortality continued to be the best characterized vital event and the one recorded most extensively and reliably; it will therefore be used to describe the noncommunicable chronic disease situation. It is important to note, however, that comparisons of mortality in different countries should be made with caution, keeping in mind that the validity and precision of the data may vary considerably among the countries.

With differing levels of intensity, the proportion of deaths attributed to noncommunicable chronic diseases has been increasing steadily in all subregions of the Americas. Table 29 gives the percentage of mortality due to this group of causes in the subregions and the absolute and relative increases in this percentage between 1970 and 1980. It further shows that the subregions in which the proportion of deaths due to noncommunicable chronic diseases was initially low are those that have experienced the greatest relative increases. The most notable conclusion that can be derived from this information is that the proportion of mortality from these diseases is rapidly becoming preponderant throughout the Region and that they are quickly changing the countries' epidemiological profiles.

Among the noncommunicable chronic diseases responsible for the greatest proportional increases in deaths from 1975 to 1985 are the cardiovascular diseases in general, including cerebrovascular disease, and malignant neoplasms (Figure 13).

Cardiovascular Diseases

This generic term covers a diverse group of diseases of the circulatory system, among which are the following (ICD–9th Revision): ischemic heart disease (410–414), cerebrovascular disease (430–438), hypertensive disease

[10]Second International Conference on Preventive Cardiology, Washington, D.C., 1989.

TABLE 29

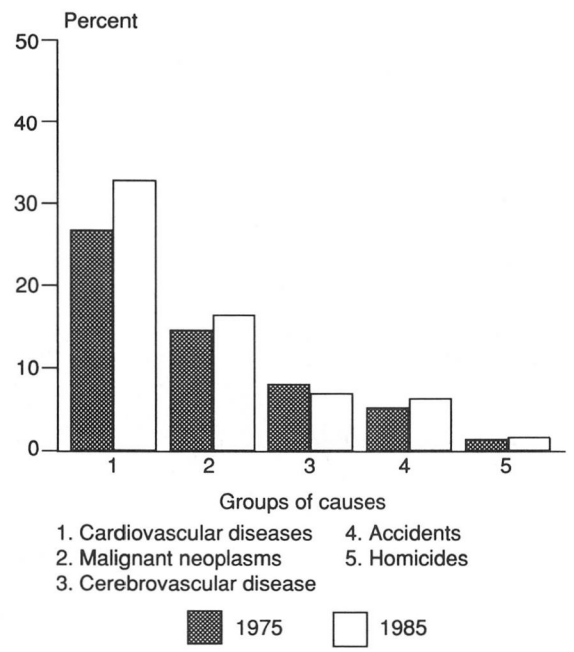
Changes in percentage of mortality from noncommunicable chronic diseases in five subregions of the Americas, 1970–1980.

Subregion	Mortality attributable to noncommunicable chronic diseases (%)		Absolute percentage increase, 1970–1980	Relative percentage increase, 1970–1980
	1970	1980		
North America (United States of America and Canada)	74.7	75.0	0.3	0.4
Temperate South America (Southern Cone countries)	54.0	60.0	6.0	11.1
Caribbean Area	47.0	57.0	10.0	21.3
Tropical South America	22.0	45.0	23.0	104.5
Middle America (Central America, Mexico, and Panama)	18.0	28.0	10.0	55.6

Source: PAHO, Technical Information System, 1989.

FIGURE 13

Proportional mortality by groups of causes in the Americas, 1975 and 1985.



Source: PAHO (1989).

(401–405), acute rheumatic fever (390–392), chronic rheumatic heart disease (393–398), and others of lesser prevalence. The first two are causally linked to atherosclerosis and, because they have similar risk factors, they also share a common potential for prevention and control.

This section makes use of mortality statistics provided by the PAHO Member Governments.

In general, cardiovascular diseases are the principal cause of death in the entire population in 31 of the 35 countries of the Region for which recent mortality information is available at PAHO. Only in El Salvador, Honduras, Martinique, and Peru do these diseases occupy a less important place (see also Annex III of this volume).

Between 1975 and 1985 the proportion of deaths attributable to cardiovascular diseases increased from 27.2% to 33.0% throughout the Region. Nevertheless, while a slight decrease in that proportion was observed in North America (–2.6%), the other subregions recorded increases of the following magnitudes: 18.6% for the Latin Caribbean, 16.5% for the English-speaking Caribbean, 30.5% for the Southern Cone, 30.9% for the Andean Area, and 100% for Central America (Table 30).

Ischemic heart disease, and particularly one of its specific components, acute myocardial infarction, is responsible for most of the deaths attributable to cardiovascular diseases. In some of the Region's countries where it has been properly documented, mortality from ischemic heart diseases has acquired all the characteristics of an epidemic; that is, it increased abruptly to a level that greatly exceeded the expected numbers, reached a peak, and then began to decline.

As can be seen in Table 31 (and in Annex III), the age-adjusted death rates from ischemic heart disease per 100,000 inhabitants are very high in Canada, Cuba, Trinidad and Tobago, and the United States of America, while they are relatively low in Ecuador, El Salvador, Guatemala, Honduras, and Peru. Although the observation period is short, the changes between 1975 and 1985 in the adjusted ischemic heart disease death rates in the Re-

TABLE 30

Percentage of mortality attributable to cardiovascular diseases and percentage change between 1975 and 1985, by subregion.

Subregion	1975	1985	%
Andean Area	11.3	14.8	+30.9
Southern Cone	21.0	27.4	+30.5
Brazil	...	15.7	...
Central America	3.9	7.8	+100.0
Mexico	9.9	12.3	+24.2
Latin Caribbean	22.0	26.1	+18.6
Caribbean	18.7	21.8	+16.5
North America	37.9	36.4	−2.6
Total	27.2	33.0	+21.3

Source: PAHO, Technical Information System, 1989.

gion are notable. Generally speaking, those countries that had higher rates in 1975 had experienced a decrease by 1985, whereas those that initially had low rates had witnessed an increase. The trends in some countries of the Central American Isthmus and the Caribbean, which are experiencing a marked rise in mortality from this specific cause, are of special concern and warrant further investigation.

Mortality from ischemic heart disease occurs predominantly among males and shows an increase in rates with age (the most striking increase is in the group 45 to 54 years old).

Relative risks (compared with those in Canada for 1975 and 1985) are less than 1, except in Cuba and Trinidad and Tobago in 1985, where they were 1.1 and 1.3, respectively. Even in the countries in which death rates are decreasing, the relative risk of dying from this specific cause was higher in 1985 than in 1975.

The differences between countries in the adjusted death rates per 100,000 inhabitants for cerebrovascular disease are less marked than those for ischemic heart disease and, in contrast, the highest rates affect countries in the Caribbean (Barbados, Martinique, Trinidad and Tobago) and Uruguay (Annex III). The differences in mortality between males and females are also less marked, even as the proportions increase with age, which they do significantly starting at 45 years of age in males and later in females.

Noteworthy among the changes in mortality from cerebrovascular disease between 1975 and 1985 (Table 32) is an increase affecting some countries of the Central American Isthmus and Caribbean. Despite the decrease in relative risks (compared to those in Canada) in most of the remaining countries, relative risks were considerably higher in 1985 than in 1975 because the death rate in Canada decreased more rapidly than in the rest of the Region, except for Belize and the United States of America.

TABLE 31

Age-adjusted mortality rates for ischemic heart disease per 100,000 inhabitants, and relative risk, by country, 1975 and 1985.

Subregion/country	Age-adjusted rates		Relative risk[a]	
	1975	1985	1975	1985
Andean Area				
Ecuador	19.5[b]	16.9	0.2	0.3
Peru	14.0[c]	12.8	0.1	0.2
Venezuela	58.0	55.5	0.6	0.8
Southern Cone				
Argentina	75.4[d]	37.1	0.7	0.6
Chile	38.4	37.9	0.4	0.6
Paraguay	34.5	38.4	0.3	0.6
Uruguay	77.2	44.4	0.8	0.7
Central American Isthmus				
Belize	27.7	19.1	0.3	0.3
Costa Rica	36.7	52.5	0.4	0.8
El Salvador	10.3[b]	7.0	0.1	0.1
Guatemala	6.5	17.8	0.1	0.3
Honduras	12.3[b]	3.3	0.1	0.0
Nicaragua	...	...	...	...
Panama	43.4[b]	38.5	0.4	0.6
Mexico	5.4	3.6	0.2	0.1
Latin Caribbean				
Cuba	77.6	73.9	0.8	1.1
Dominican Republic	16.8	31.0	0.2	0.5
Puerto Rico	68.7	48.7	0.7	0.7
Non-Latin Caribbean				
Barbados	37.1	29.5	0.4	0.4
Martinique	14.1	8.1	0.1	0.1
Suriname	36.3[c]	47.6	0.4	0.7
Trinidad and Tobago	77.9[b]	84.6	0.8	1.3
North America				
Canada	100.7	66.8	1.0	1.0
United States of America	113.7	69.9	1.1	1.0

[a]Compared with Canada.
[b]1974.
[c]1971.
[d]1970.
Source: PAHO, Technical Information System, 1989.

The age-adjusted mortality rates for hypertensive disease are considerably lower than those for ischemic heart disease and cerebrovascular disease (Annex III). This observation leads to the conclusion that although hypertensive disease is important as a cause of morbidity, it is not as important as a basic cause of death. Except in El Salvador and Guatemala, the death rates and, as a result, the relative risks in 1985 were higher in the rest of the Re-

TABLE 32

Age-adjusted mortality rates from cerebrovascular disease per 100,000 inhabitants and relative risk, by country, 1975 and 1985.

Subregion/country	Age-adjusted rates		Relative risk[a]	
	1975	1985	1975	1985
Andean Area				
Ecuador	26.5	25.5	0.85	1.4
Peru	13.1	13.4	0.4	0.7
Venezuela	35.5	31.7	1.1	1.7
Southern Cone				
Argentina	47.3	37.5	1.5	2.0
Chile	41.4	35.7	1.3	1.9
Paraguay	52.2	60.6	1.7	3.3
Uruguay	55.1	43.7	1.8	2.4
Central American Isthmus				
Belize	22.6	14.7	0.7	0.8
Costa Rica	26.3	26.8	0.8	1.4
El Salvador	18.1	19.4	0.6	1.0
Guatemala	13.1	15.5	0.4	0.8
Honduras	9.8	17.4	0.3	0.9
Nicaragua	...	...	...	...
Panama	35.4	33.2	1.1	1.8
Mexico	25.5	21.9	0.8	1.2
Latin Caribbean				
Cuba	33.1	32.7	1.1	1.8
Dominican Republic	19.1	30.9	0.6	1.7
Puerto Rico	27.3	17.5	0.9	0.9
Non-Latin Caribbean				
Barbados	61.7	48.6	2.0	2.6
French Guiana	36.6	72.2	1.2	3.1
Guadeloupe	31.6	32.1	1.0	1.7
Guyana	78.9	61.7	2.5	3.3
Martinique	31.2	44.9	1.0	2.4
Suriname	41.3	34.4	1.3	1.9
Trinidad and Tobago	73.8	59.4	2.4	3.2
North America				
Canada	31.0	18.5	1.0	1.0
United States of America	32.7	19.1	1.1	1.0

[a]Compared with Canada
Source: PAHO, Technical Information System, 1989.

gion's countries than in Canada. Furthermore, some countries in the Caribbean have experienced a striking increase in the risk of dying from hypertensive disease, which has not necessarily coincided with an increase in mortality from cerebrovascular disease. This phenomenon may be best explained by deficiencies in registration of deaths attributable to such conditions.

Despite the limitations inherent in analyzing mortality, the information examined shows a heterogeneous and changing picture in which two situations stand out:

- Those countries which in 1975 had high mortalities from cardiovascular diseases have a trend toward decrease or at least toward stabilization.
- Those countries, especially in Central America and the Caribbean, which in 1975 still had comparatively low rates are seeing growing risks of dying from cardiovascular conditions associated with atherosclerosis. This trend creates a challenge and reinforces the need to better understand the determining factors in this situation and to modify the risk factors preceding these conditions.

The increase in the use of cardiovascular surgery and highly complex invasive and noninvasive techniques for diagnosing and treating ischemic heart disease is indirectly demonstrating the growing severity and cost of this problem in the Region. The patterns of utilization and the impact of these technologies are being studied in Latin America and the Caribbean, but indirect signs already indicate that an unparalleled increase has taken place.

Other diseases of the circulatory system, such as acute rheumatic fever and chronic rheumatic heart disease, have become relatively less important as causes of death, but they continue to be significant health problems in socioeconomically deprived sectors of some countries in the Region. Prevention could be more successful if available public health measures, about which PAHO has disseminated information, were applied more fully.

Even though no reliable data exist on the prevalence of chronic myocardiopathy caused by Chagas' disease, it is estimated that at least two million individuals are affected in the Region. The distribution of *Trypanosoma cruzi* infection extends from the southern part of the United States of America to the Southern Cone, but the incidence of cardiovascular complications is highest in southern Brazil and the extreme southern part of the hemisphere.

Malignant Neoplasms

According to all recently analyzed data, malignant neoplasms are the leading cause of death in Chile, Costa Rica, and Martinique; the second leading cause in Argentina, Bahamas, Barbados, Canada, Colombia, Cuba, Dominica, the Dominican Republic, Guadeloupe, Panama, Puerto Rico, Saint Lucia, St. Vincent and the Grenadines, Suriname, the United States of America, and Venezuela; and among the first five most important causes of death in 12 other countries.

Between 1975 and 1985, the percentage of deaths attributable to malignant neoplasms increased from 14.9% to 16.4% in the Region. The proportion rose in all subregions: from 13.7% to 15.4% in the Latin Caribbean;

from 15.6% to 17.7% in the Southern Cone; from 19.4% to 22.6% in North America; from 6.9% to 9.2% in the Andean Area; from 3.5% to 5.6% in Central America and Panama; and from 5.3% to 11.9% in the English-speaking Caribbean.

The adjusted mortality rates per 100,000 inhabitants from malignant neoplasms also reveal a difference between the countries of the Southern Cone, Caribbean, and North America, where the mortality rates are high, and those of Central America and the Andean Area, which have relatively lower rates. In some cases the differences between the sexes in mortality from all malignant tumors are not very marked, but an increase in mortality is seen in older groups and becomes striking after 45 years of age (Annex III).

The trend of rising mortality from malignant neoplasms in the Region is a reason for special concern—even more so considering that the most prevalent are causally associated with environmental factors or certain lifestyles and therefore are, for the most part, potentially preventable. The evidence examined by Doll and Peto[11] suggests that at least 30% of cancers are associated with tobacco use, that another 35% are associated with diet and additives, and that around 10% each are associated with sexual behavior and with occupation. Thus, it is not surprising that malignant neoplasms of the stomach, lungs, breast, and uterine cervix, which have been associated with the factors mentioned above, are those that contribute most to mortality. With rare exceptions, the proportion of deaths attributable to each of these four kinds of malignant neoplasms increased between 1975 and 1985.

The marked difference between the high death rates from malignant neoplasms of the lung (between 12.6 and 20.8 per 100,000 inhabitants) in a small group of countries (Argentina, Canada, Cuba, the United States, and Uruguay) and the rates in the rest of the countries (all under 7.0 per 100,000 inhabitants) is noteworthy. There is also a marked difference between the sexes, with rates in males being clearly higher. Even on the basis of the short period under observation, the changes in mortality from malignant neoplasms of the lung warrant special attention. Mortality from this cause increased between 1975 and 1985 in all the countries except six (Argentina, Barbados, Guatemala, Honduras, Peru, and Uruguay), in which rates fell slightly (see also Annex III of this volume).

The increase in per capita consumption of cigarettes in numerous countries (Table 33), along with an aging population, makes it likely that the incidence of malignant neoplasms of the lung and airway, and that of other tumors associated with tobacco consumption, will continue to rise.

Age-adjusted mortality rates for malignant neoplasms of the stomach are unusually high in a small number of countries (Barbados, Chile, Costa Rica, Ecuador, and Venezuela) in both sexes. The highest rates of death from cervical cancer are found in certain English-speaking Caribbean countries, where the increase in mortality is most striking at early ages, starting at 35 years. It is possible that deficiencies in registration in other developing countries in different subregions have led to underestimation of mortality from this cause (see Annex III).

TABLE 33

Annual per capita consumption of cigarettes among persons 15 years old and older, and percentage change, by country, 1970 and 1985.

Subregion/country	Per capita consumption (units)		Change (%)
	1970	1985	
Andean Area			
Bolivia	300	330	+10
Colombia	1,670	1,920	+15
Ecuador	700	880	+26
Peru	390	350	−10
Venezuela	1,980	1,890	−5
Southern Cone			
Argentina	1,730	1,780	+3
Chile	1,080	1,000	−7
Paraguay	960	1,000	+4
Uruguay	1,540	1,760	+14
Brazil	1,310	1,700	+30
Central American Isthmus			
Costa Rica	1,680	1,340	−20
El Salvador	950	750	−21
Guatemala	740	550	−26
Honduras	940	1,010	+7
Nicaragua	1,250	1,380	+10
Panama	1,180	850	−28
Mexico	1,790	1,190	−34
Latin Caribbean			
Cuba	4,000	3,920	−2
Dominican Republic	1,100	980	−11
Haiti	540	240	−56
Non-Latin Caribbean			
Barbados	1,150	1,380	+20
Guadeloupe	1,090	1,080	−1
Guyana	1,350	1,000	−26
Jamaica	1,270	820	−35
Suriname	1,040	1,660	+60
Trinidad and Tobago	1,900	1,600	−16
North America			
Canada	3,340	3,180	−5
United States of America	3,650	3,270	−10

Source: WHO, Document EB77/1986/22, Add. 2.

[11] *The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today* (New York: Oxford University Press, 1981).

For death attributable to malignant neoplasms of the breast, the group of countries composed of Argentina, Barbados, Canada, the United States, and Uruguay has markedly higher rates than the remaining countries. An increase in mortality with age, which is most evident after 35 years, is also seen (see Annex III).

With respect to malignant tumors of the lips, oral cavity, and larynx, age-adjusted death rates are relatively low with the exception of those in some Caribbean countries (Bahamas, Barbados, Martinique, and Puerto Rico) and Uruguay (see Annex III).

Even though data on morbidity caused by noncommunicable chronic diseases suffer from serious limitations, information about the incidence of malignant neoplasms is available from cancer registries. Age-adjusted average annual incidence rates per 100,000 inhabitants have been obtained from 11 registries in the Americas for the four most frequent malignant neoplasms (Table 34). This information confirms that both stomach and lung tumors affect males predominantly. It also emphasizes the marked differences among countries. For example, the incidence of stomach tumors is higher in Latin America than in North America or the Caribbean. The opposite is true of lung tumors, whose incidence, except as recorded in the Pôrto Alegre (Brazil) registry, is higher in North America than in Latin America. A similar contrast can be seen for malignant neoplasms of the breast and cervix: in general, the former have a higher incidence in North America, and the latter in Latin America.

It is important to stress once again that the most prevalent malignant neoplasms are associated with environmental factors and lifestyles, and that they can therefore potentially be prevented. To do so requires better knowledge of the problems' determinants, on the one hand, and initiation of interventions aimed at primary and secondary prevention of these conditions, on the other.

Malignant neoplasms of the lung are susceptible to primary prevention through reduction in tobacco use. Still, the decreases in that use achieved in Canada and the United States have not yet translated into a lower incidence of or mortality from malignant lung neoplasms. The incidence and mortality even appear to be increasing in both sexes.

Malignant neoplasms of the cervix and breast are susceptible to secondary prevention through early detection and efficacious management, but significant reduction, in both incidence and mortality, has only been achieved for cervical cancer, as documented in Canada and Puerto Rico (Figures 14 and 15).[12]

[12]More detailed information on cervical and breast cancer, as well as on control programs, is presented in the section "Health of Women."

TABLE 34

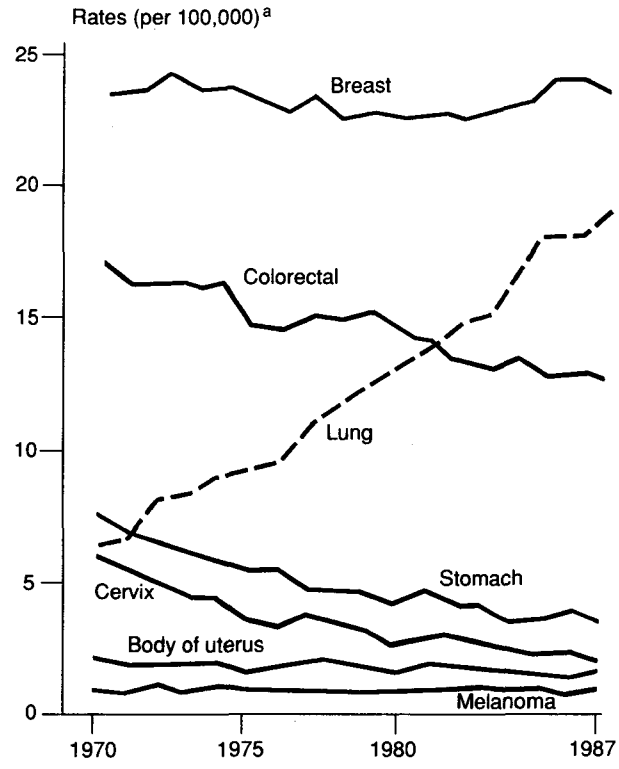
Age-adjusted average annual incidence rates per 100,000 population for malignant neoplasms of certain sites, in some cities, states, and countries of the Region, 1977–1982.

Registry	Year	Stomach		Lung		Female breast	Uterine cervix
		M	F	M	F		
Fortaleza	1978–1982	44.6	16.7	22.3	4.7	50.0	46.5
Recife	1980	29.9	8.6	22.2	5.6	48.2	83.2
Pôrto Alegre	1979–1982	30.7	12.4	67.9	11.9	60.6	23.7
São Paulo (Brazil)	1978	53.6	25.1	36.5	7.9	65.5	35.1
Cali (Colombia)	1977–1981	49.6	26.3	25.4	9.7	34.8	48.2
Costa Rica	1978–1982	58.8	25.2	17.8	6.8	30.7	36.9
Netherlands Antilles (excludes Aruba)	1978–1982	19.1	7.1	35.5	4.3	35.2	18.0
Puerto Rico	1978–1982	17.6	8.6	18.1	6.5	35.1	15.6
Canada	1978–1982	13.2	5.9	61.3	16.9	66.4	10.5
Alameda County, California (whites)		10.7	4.2	68.5	33.3	78.4	7.6
Alameda County, California (blacks)		16.7	7.1	102.2	31.4	68.4	14.1
Connecticut (whites)		10.8	4.3	64.3	25.3	77.8	6.8
Connecticut (blacks)		19.4	9.1	89.8	21.9	61.3	14.7
(United States of America)	1978–1982						

Note: Rates adjusted to age distribution of world population.
Source: Cancer Incidence in Five Continents, Vol. V. (IARC/WHO, Lyons, France, 1987).

FIGURE 14

Age-standardized mortality rates due to cancer of selected sites among women, Canada, 1970 - 1987.

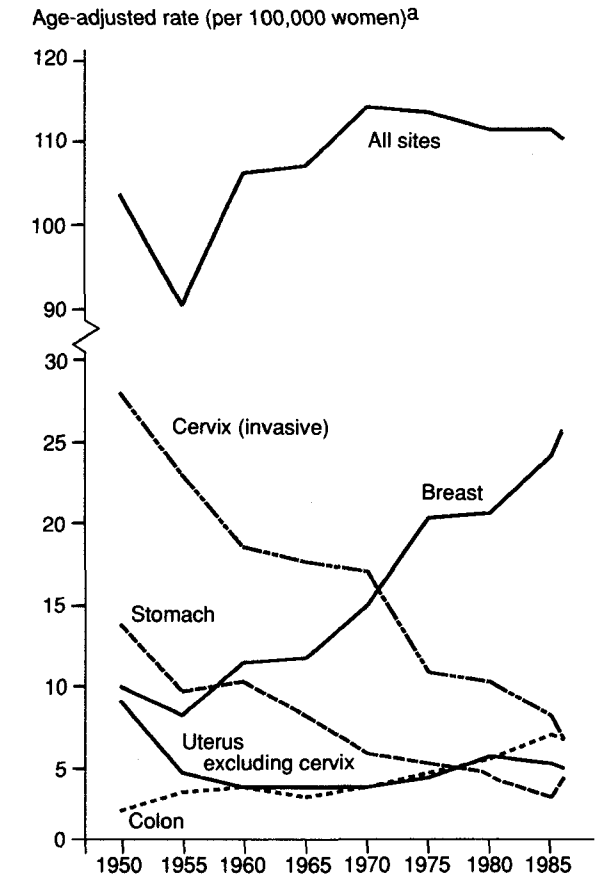


[a]Rates are adjusted to the age distribution of the world population.

Source: Vital Statistics and Disease Registries Section, Health Division, Statistics Canada, 1989.

FIGURE 15

Incidence rates for the most frequent sites of cancer in women, Puerto Rico, 1950 - 1986.



[a]Rates adjusted to the population of Puerto Rico according to the 1950 census.

Source: Annual Report, Puerto Rico Cancer Registry, 1986.

Other Chronic Conditions

Among these conditions is **diabetes mellitus**, which is becoming a significant cause of morbidity and mortality, especially in certain countries of the Caribbean and Central America. In the 45- to 64-year age group, diabetes mellitus is the second most frequent cause of death in Trinidad and Tobago and is among the five most important causes in ten other countries (Bahamas, Cuba, Guyana, Panama, Paraguay, Puerto Rico, Saint Lucia, St. Vincent and the Grenadines, Suriname, and Venezuela).

Hepatic cirrhosis has also become significant as a cause of death. Among persons 45 to 64 years of age it is the third most frequent cause of death in three countries (Chile, Mexico, and Puerto Rico) and among the first five causes of death in nine other countries.

Chronic obstructive bronchial diseases (especially chronic bronchitis and emphysema) are also becoming more important as causes of morbidity owing to both increased exposure to environmental pollutants and, especially, smoking. This increase is not yet reflected proportionally in the mortality attributable to these conditions.

The etiology of **renal diseases and chronic renal insufficiency** differs between the child and adult populations. In children, congenital malformations of the kidney or urinary tract are responsible for two-thirds of the cases of renal insufficiency, and the rest are attributable to glomerulonephritis. In adults, the causes are, in order of frequency, arterial hypertension, glomerulonephritis, nephrotic syndrome, diabetes, disseminated lupus erythematosus, and congenital conditions; mortality rates vary among the countries from 2.7 to 16.4 per 100,000. In 1983, 17 countries in Latin America recorded close to

30,000 deaths from nephritis and nephrosis. In 1987, around 24,000 patients were being maintained on continuous dialysis in those countries, and a total of 10,972 patients had received kidney transplants (from familial donors or cadavers).

The First Consensus Conference on Chronic Renal Insufficiency, Dialysis, and Transplant (Caracas, 1988), organized by PAHO, identified certain aspects critical to the management of this health problem. Its conclusions stressed the need for better information about conditions leading to terminal chronic renal insufficiency, as well as the need to increase the effectiveness of early diagnosis, dialysis, and transplant technologies. In addition, the advisability of increasing access to specialized services and of searching for indicators that would allow comparison of the efficiency of different centers was recognized.

Risk Factors

The occurrence of most noncommunicable chronic diseases, which are the most frequent causes of morbidity and mortality in the Region, is preceded by risk factors—some of which are common—that can be measured in the general population.

The causal association between risk factors such as smoking, inadequate nutrition, sedentary lifestyle, arterial hypertension, and others and the most prevalent noncommunicable diseases (ischemic heart disease, cerebrovascular disease, malignant neoplasms, diabetes, etc.) has been profusely documented in the literature. Three lines of evidence are especially noteworthy:

- Evidence from prospective analytical studies of the 1950s and 1960s demonstrated that the association between noncommunicable chronic diseases and the risk factors noted fulfills all the accepted epidemiological criteria for establishing causality.
- Evidence from experimental studies and community interventions in the 1970s and 1980s demonstrated that these risk factors can be modified and that such modification is both well accepted and beneficial.
- National statistics from countries in the Americas and other regions have shown that prevention and control programs can produce reductions in mortality rates from some noncommunicable chronic diseases.

Surveys of the risk factors for noncommunicable chronic diseases or other isolated measurements of their prevalence have been carried out in some of the Region's countries. However, the diversity of the methods used and the time periods involved hinders comparison. In general, information is scarce about such risk factors for all the Region's countries.

In 1986, PAHO promoted and supported a study of individual and populational risk factors using a common methodology in limited areas of some Latin American cities: Caracas (Venezuela), Ciudad Acuña and Piedras Negras (Mexico), Havana (Cuba), Pôrto Alegre and São Paulo (Brazil), and Santiago (Chile). Preliminary findings from this study show great variability among the different population centers. The percentage of adults (15 years and older) who report hypertension, smoking, sedentary lifestyle, or daily ingestion of alcohol is summarized in Table 35 for each of the participating urban areas. Even though the percentages vary over a considerable range, they reveal that, in general, the prevalence of risk factors is higher than that indicated by figures that have been published in the literature. In addition, smoking and daily alcohol ingestion are more prevalent in men, but higher prevalences of hypertension and sedentary lifestyle are found among women.

The results from this study emphasize the urgent need for comparable information regarding the countries of Latin America and the Caribbean. They also show that such information is essential to guide interventions aimed at promoting health, favoring lifestyle changes, and preventing both the risk factors themselves and the most prevalent noncommunicable diseases.

TABLE 35

Prevalence of risk factors in adults by sex, in six Latin American cities, 1987.

City and country	Hypertension (%)		Smoking (%)		Sedentary lifestyle (%)		Consumption of alcohol (%)	
	M	F	M	F	M	F	M	F
Pôrto Alegre (Brazil)	19	26	65	42	69	82	17	2
São Paulo (Brazil)	14	19	69	51	57	80	15	2
Santiago (Chile)	7	18	68	56	58	76	7	3
Havana (Cuba)	12	20	49	30	62	78	3	0
Ciudad Acuña and Piedras Negras (Mexico)	9	20	54	21	49	72	4	0
Caracas (Venezuela)	10	31	61	47	41	65	5	3

Source: PAHO Risk Factors for Chronic Disease Study, Preliminary Data, 1987. Noninstitutionalized adult population 15 years old and older (in São Paulo, 15 to 59 years).

Accidental Injuries

Injuries and poisonings have a special place on the world scene: they are the principal cause of deaths in children, adolescents, and young adults in all the developed countries and in an ever-increasing number of developing countries; they cause considerable demand for medical care—much of it costly—and constitute a major source of prolonged or permanent disability; and they cause significant human suffering and great economic loss to society. Yet, despite this importance, they are barely mentioned in medical teaching and allied disciplines, are almost ignored in research plans, and are the object of quite limited and often inappropriate prevention and control programs.

These characteristics and the scant availability of reliable and complete statistics make determining the true extent of the problem difficult. It could be said that no country in the Region knows how many disabilities result from unintentional injuries, since only partial data are available. For example, an analysis was carried out in Colombia in 1987 by the Department of Physical Medicine and Rehabilitation of the San Vicente de Paúl University Hospital in Medellín, the Research Center of the School of Public Health of the University of Antioquia, and the Antioquia Sectional Health Service. It showed that the types of causes leading to consultations in the Department's rehabilitation services had the following proportional distribution: 36% degenerative, 28% violent, 23% other diagnosed types, 8% congenital and perinatal, and 5% infectious. As for age, 26% of the patients were 0 to 9 years old, 42% were 10 to 39 years old, 22% were 40 to 59 years old, and 10% were 60 years old or older. Males accounted for 62.5% and females for 37.5% of the caseload.

One of the population groups most affected by injuries and poisonings is children and youths, who are poorly equipped to deal with risky situations: their physiological limitations dictated by motor and sensory development, their limited reaction capability, and their inexperience make them particularly susceptible to such events. Moreover, the tendency of children to explore and experiment and the risk-taking behavior of adolescents increase this vulnerability, as does neglect by adults responsible for caring for them (parents, day-care center workers, teachers, drivers, and others). These factors explain why in many countries accidents are the leading cause of death in the age group 1 to 14 years (see Annex III in this volume) and also are responsible for many maiming injuries and disabilities. In the United States of America, accidents caused 41.7% of the deaths in children aged 1 to 4 years and 49.5% in children aged 5 to 14 years in 1986. Tables 36 and 37 give data on this subject for Brazil in 1985. The situation appears even more alarming when a more selective indicator, years of potential life lost (YPLL), is used instead of mortality rates. Thus, in the United States in 1986, there were more than 2,385,000 YPLL before 65 years of age among persons who died from accidental causes between ages 1 and 64 years. While domestic accidents are the most numerous, traffic accidents cause a greater number of deaths (approximately half).

Mortality, of course, is only the tip of the iceberg. For every accidental death there are several hundred injuries, some serious, which may leave permanent effects.

Despite its alarming dimensions, it appears that no organized effort is being made to deal with the problem in most of the countries of the Region. The true magnitude of traumatic injuries and their socioeconomic costs are often underestimated, and accidents are not considered a priority health problem. Training is not provided to physicians (including specialists in public health), nurses, or other health workers on the epidemiology of accidents and their determinants—psychosocial and environmental—for the purpose of developing effective prevention models. Even when their importance is recognized, control programs are rare and are largely oriented toward therapy, including first aid. Prevention efforts are very poorly developed and often feature components that have a limited chance of success: behavior change through persuasion, focal campaigns on special holidays, and so on. In addition, preventive activities and programs generally receive little or no evaluation.

As with many of today's health problems, accident research should include a broad range of disciplines and, therefore, sectors. It also requires the collaboration of physicians, engineers, epidemiologists, psychologists, sociologists, medical forensics experts, and specialists in the behavioral and communications sciences, among others. But this variety can lead to a multiplicity of initiatives and overlapping responsibilities and obscures the basic need to establish consistent research policies and programs.

A few specific cases are presented to illustrate the injury and poisoning situation in the Region:

• Uruguay is relatively small in size (176,215 km^2) and has a stable population estimated at 3,012,000 (16 inhabitants/km^2). Half that population lives in the capital, where the density is 2,355 inhabitants/km^2. Only 17% of the country is considered rural. Twenty-five percent of the population is under 15 years old; 54% is between 15 and 54 years, and 21% is 55 years or older. The country has a 9,709-km network of highways. In 1987, 250,000 motor vehicles (60% of the country's total) were registered in Montevideo, or one vehicle for every five residents. Many of these vehicles are more than 15 years old.

Up to mid-1988, agencies that dealt with traffic did

TABLE 36

Mortality from accidents and violence, by age group, Brazil, 1985.

Age groups (years)	Deaths from all causes (001–E999)	No. of deaths from accidents and violence (E800–E999)	% of deaths from accidents and violence[a]	Rates per 100,000
Under 1	130,707	992	1.2	24.5
1–4	25,555	2,881	3.4	19.5
5–9	8,661	3,052	3.6	18.6
10–14	7,590	3,258	3.8	21.8
Subtotal under 15	172,513	10,183	11.9	20.3
Rest of ages	615,718	75,662	88.1	88.0
Total	788,231	85,845	100.0	63.3

[a]In relation to deaths for all ages by this group of causes.
Source: PAHO, Technical Information System.

TABLE 37

Mortality from accidents and violence in children 0–4, 5–9, and 10–14 years, by cause, Brazil, 1985.

Causes (ICD–9)	0–4		5–9		10–14		Total 0–14	
	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]
Accidents and violence (E800–E999)	3,873	21.4	3,052	18.6	3,258	21.8	10,183	20.6
Motor vehicle (E810–E819)	959	5.3	1,388	8.5	1,161	7.8	3,508	7.1
Other accidents	2,333	12.9	1,277	7.8	1,433	9.6	5,043	10.2
Drownings (E910)	666	3.7	526	3.2	759	5.1	1,951	3.9
Fire (E890–E899)	378	2.1	108	0.7	49	0.3	535	1.1
Falls (E880–E888)	72	0.4	55	0.3	49	0.3	176	0.4
Poisonings (E850–E869)	73	0.4	9	0.0	5	0.0	87	0.2
Inhalation and ingestion of food (E911)	233	1.3	4	0.0	3	0.0	240	0.5
Inhalation and ingestion of object (E912)	95	0.5	13	0.1	9	0.1	117	0.2
Mechanical suffocation (E913)	137	0.8	51	0.3	45	0.3	233	0.5
Other accidents (Remainder of E800–E949)	679	3.8	511	3.1	514	3.4	1,704	3.4
Suicides (E950–E959)	...	...	3	0.0	73	0.5	76	0.2
Homicides (E960–E969)	108	0.6	66	0.4	217	1.5	391	0.8
Other violent causes (E970–E999)	473	2.6	318	1.9	374	2.5	1,165	2.4

[a]Per 100,000 population in each age group.
Source: Ministry of Health. *Estatísticas de mortalidade. Brasil, 1985.* Brasília, 1988.

not have a formal linkage and coordination mechanism that enabled them to share details of their activities in an adequate and timely fashion, nor were they able to act jointly except to carry out special operations. Only 50% of the vehicles are insured by the State Insurance Bank, the only authorized insurance company in the country. The Bank estimates that its disbursements for material damage to insured vehicles amount to about $US120,000 daily. The mortality registries in the country include all ages and causes, provide almost total coverage, and have

high reliability; for only 7% of deaths is the cause unknown. The number of traffic accident deaths rose from 170 to 317 between 1974 and 1986, an increase of 86%. Between 1974 and 1985 the accident death rate increased from 6.0 to 8.8 per 100,000 inhabitants for all ages, while it went from 5.3 to 11.5 per 100,000 persons in the 15- to 24-year age group. The average annual number of traffic deaths in Montevideo during the five-year period 1982–1986 was 151. In 1987, 177 such deaths were recorded, a 17% increase.

Recommendations of the first seminar on traffic accidents, held in Montevideo in mid–1988 under PAHO sponsorship, led to the creation of a National Interinstitutional Traffic Accident Prevention and Control Commission headed by the Ministry of Public Health. A decree was at once approved requiring persons riding in the front seats of vehicles to use seat belts.

• In Argentina, according to information tabulated by the Accident Prevention Department of the Ministry of Health and Social Action, 4,880,120 vehicle accidents occurred in 1983, when the country had 29,627,000 inhabitants and a ratio of six persons per vehicle. The main causes of death in the entire population that year were cardiovascular diseases (365.1 per 100,000), neoplasms (141.3), and accidents from all causes (41.1). Traffic accidents resulted in 3,534 deaths, a rate of 11.9 per 100,000 population.

It was estimated that each motor vehicle death in a person aged 1 to 64 years caused an average of 30 years of potential life lost, compared to 10 YPLL for neoplasms and 7 for cardiovascular diseases.

In 1984 (when the population was 30,097,000), traffic accidents took 3,443 lives (11.4 per 100,000 population). Mortality rates per 100,000 persons in the respective age groups were as follows: 0–4 years, 5.5; 5–34 years, 8.9; 35–54 years, 14.5; and 55 years or more, 23.9. In contrast, the percentages represented by these rates were 5.6%, 38.7%, 38.5%, and 17.0%, respectively, showing clearly that the weight of traffic accident mortality falls between the ages of 5 and 54 years. Persistently, the male-to-female ratio for traffic accident deaths has been three to one.

• In Venezuela, according to the Department of Accident and Violence Prevention of the Ministry of Health and Social Welfare, 4,157 traffic accident deaths were recorded in 1984, for a rate of 24.6 per 100,000 inhabitants; the rate had been 36.3 in 1980. In the group aged 5 to 14 years, 738 deaths from accidents of all kinds (369 from motor vehicle accidents) were recorded. The second-ranking cause of death in this group was cancer (172) and the third was pneumonias (85).

In the group aged 15 to 24 years, accidents of all kinds were also the leading cause of death, resulting in 1,958 deaths (1,138 from motor vehicle accidents). The next most common causes were suicides and homicides (887 deaths) and cancer (212 deaths).

In the group aged 25 to 44 years, accidents remained the main cause of death, with 2,413 deaths (1,465 from motor vehicle accidents), followed by suicides and homicides (1,087 deaths) and cancer (945 deaths).

In 1985, 60,686 injuries and 4,195 deaths from traffic accidents were recorded. Pedestrians hit by cars accounted for the largest proportion of deaths (36.5%), followed by deaths in collisions (27.6%), overturned vehicles (19.4%), single-car crashes (10.7%), and from other causes (5.8%). The distribution of deaths according to the person's status in the accident was as follows: 35.7% were pedestrians, 24.0% were car drivers, 23.4% were car passengers, 8.0% were motorcyclists, and the remainder (8.9%) were motorcycle passengers and bicyclists. These statistics clearly show that in Venezuela the most likely person to die in a traffic accident is a pedestrian struck on a roadway, followed by a car driver or passenger involved in a collision or rollover. Of these deaths, 52.6% occurred at the scene of the accident and 39.0% took place within 48 hours of the accident.

Traffic accidents caused 4,337 deaths in Venezuela in 1986, for a rate of 24.4 per 100,000 inhabitants, and were in fifth place as a general cause of death and in first place in the 1- to 44-year age group. The country does not have an organization to deal with trauma cases that ensures coordination of the basic components of emergency care: access to prehospital and hospital care and rehabilitation. The Ministry of Health and Social Welfare and PAHO organized a Workshop-Seminar on the Participation of Medicine in the Prevention of Traffic Accidents, held in Caracas in July 1987, at which guidelines were produced for concrete activities by the health sector in four specific areas: medical evaluation to determine driving ability, training of workers to provide trauma care, medical care for the injured, and their rehabilitation.

• In the United States of America, according to the Trauma Research Committee and the Institute of Medicine,[13] 140,000 people die every year from accidental injuries, and one out of three people in the population suffers a nonfatal injury. Accidents kill more persons 1 to 34 years old than all the principal diseases combined and are the leading cause of death in the 1- to 44-year age group. In general, accidents cause almost half of the deaths in children aged 1 to 4 years, more than half in children aged 5 to 14 years, and almost 75% of the deaths in young people aged 15 to 24 years.

The Committee reckoned that accidental injuries cause

[13] *Injury in America* (Washington, D.C.: National Academy Press, 1985).

the loss of more years of working life (more than 4 million) than all forms of heart disease (2.1 million years) and cancer (1.7 million years), and that one of every eight hospital beds is occupied by a trauma patient. The Committee also noted that each year more than 80,000 persons who have suffered injuries join the ranks of those permanently disabled by cerebral and spinal cord injuries.

Each year, accidents in the United States cost between $US75 billion and $US100 billion directly and indirectly. Motor vehicle accidents are the leading cause of accidental death in the 1- to 34-year age group. They are also the main cause of hospitalization in persons younger than 45 years.

In response to the Committee's recommendations, the Congress of the United States created the Accidental Injuries Epidemiology and Control Program at the Centers for Disease Control, in Atlanta, Georgia, in 1985, with an annual budget of $US10 million. The new program's basic mission is to plan, finance, and evaluate coordinated research on accidents and to develop mechanisms for controlling accidental injuries.

Recognizing that one of the greatest difficulties in establishing accident prevention and control programs for children is the paucity of epidemiological information about circumstances surrounding accidents, PAHO and the authorities in Brazil, Chile, Cuba, and Venezuela conducted a collaborative study at the end of 1985 of accidents in which the victim was under 20 years old. The protocol, which was created by PAHO, was applied in selected hospitals and in the communities those institutions served (Table 38) in order to collect the most information possible.

"Accidents" were defined as the causes corresponding to ICD–9 categories E800-E999. Associated factors and risk factors for household accidents, traffic accidents, and falls were examined by logistic regression, and epidemiological surveillance models for each country were produced. Table 39 summarizes the characteristics of both the institutional and household surveys and presents an estimate of annual incidence of accidents among persons younger than 20 years, based on the two surveys. Table 40 reports the results of the institutional and household surveys by type of accident. Table 41 presents the percentage distribution by age and sex of the cases analyzed in the institutional survey, and Table 42 shows the main kinds of injuries they involved. Table 43 summarizes the findings from both surveys with regard to the accidents' place of occurrence. In general, the typical victim of an accident in the countries taking part in the survey is a young boy (1 to 9 years old) who falls at home, injuring an extremity, and who does not receive medical or nursing care at the accident site or on the way to the hospital.

Recognizing that the results from the survey apply only to the time period when it was carried out, PAHO is sponsoring the establishment of a permanent epidemiol-

TABLE 38

Hospitals participating in institutional survey of accidents, by country.

Country	Area	Name of institution
Brazil	São Paulo	Paulista Medical School Hospital
Chile	Santiago, Eastern Metropolitan	Luis Calvo Mackenna Hospital
		El Salvador Hospital
	Valparaíso-San Antonio	Deformes Hospital
		Van Buren Hospital
Cuba	Havana	Pedro Borrás Children's Teaching Hospital (0–14 years)
		Comandante Manuel Fajardo Surgical Hospital
	Pinar del Río	Pepe Portilla Children's Teaching Hospital (0–14 years)
		Provincial Clinical Surgical Hospital
	Villa Clara	José Luis Miranda Pediatric Teaching Hospital (0–14 years)
		Provincial Clinical Surgical Hospital
Venezuela	Caracas subregion (6 sanitary districts)	1. Dr. Jesús Yerena General Hospital, Lídice
		2. Dr. José Gregorio Hernández Western General Hospital, Los Magallanes de Catia
		3. Dr. Miguel Pérez Carreno Hospital
		4. Emergency Medical-Surgical Hospital, Coche
		5. Pérez de León Hospital, Petare
		6. Dr. José María Vargas Hospital

TABLE 39

Characteristics of the institutional and household accident surveys.

Indicator	Brazil (São Paulo)	Chile (Santiago, Valparaíso)	Cuba (Havana, Pinar del Río, Villa Clara)	Venezuela (Caracas)
Population under 20 years old in selected areas	[a]	401,127	170,022	1,489,438
Duration of institutional survey (weeks)	[a]	[a]	8	3.5
Number of cases in institutional survey	201	1,024	4,429	600
Estimated incidence rate, per year per 1,000 (x)	. . .	. . .	169.3	6.0
Duration of household survey (weeks)	8	. . .	2–3	2.5
Number of families surveyed	[b]	620	1,083	340
Number of children 0–19 years	[b]	1,301	1,274	546
Number of cases in household survey	614	394	76	120
Estimated incidence rate, per year per 1,000 (y)	. . .	302.8	59.7	219.8

[a]Information not provided.
[b]Being processed.
(x) = (1000)(52)(c)/(b)(a)
(y) = (1000)(h)/(g)

TABLE 40

Comparison of country results: frequency of accident types by survey and country.

Type of accident	Institutional survey				Household survey[a]		
	Brazil	Chile	Cuba	Venezuela	Chile	Cuba	Venezuela
Traffic accident	49	55	255	68	8	2	16
Fall	80	499	2,292	283	246	41	52
Hit by object/person/animal	15	216	1,200	65	53	25	13
Burn	23	47	321	34	27	2	7
Electrocution	0	2	8	0	1	0	1
Bite	7	44	56	27	11	1	9
Explosion	0	0	1	1	0	0	0
Foreign body	0	26	120	49	3	2	7
Drowning	2	0	0	0	1	0	0
Asphyxiation	1	1	0	1	1	0	0
Intoxication	13	22	88	16	6	0	4
Other	11	107	79	33	28	2	2
Unknown/omitted	0	5	9	23	9	1	9
Total	201	1,024	4,429	600	394	76	120

[a]Data for Brazil being processed.

TABLE 41

Percentage distribution by age and sex of accident victims included in the institutional survey, by country.

Sex	Age group (years)	Brazil (n=201)	Chile (n=1,024)	Cuba (n=4,346)	Venezuela (n=598)
Males					
	<1	5	1	3	0
	1–4	17	16	17	15
	5–9	20	16	16	14
	10–14	14	18	21	17
	15–19	2	9	13	20
Females					
	<1	2	2	2	0
	1–4	11	10	11	11
	5–9	23	8	7	7
	10–14	5	11	8	4
	15–19	1	8	4	11

TABLE 42

Principal types of injuries among accident victims included in the institutional survey, by country.

Brazil (n=201)		Chile (n=1,024)		Cuba (n=4,429)		Venezuela (n=600)	
Injury	%	Injury	%	Injury	%	Injury	%
Fracture	30	Other	31	Other	23	Cut	20
Contusion	16	Cut	19	Cut	22	Contusion	19
Cut	12	Torn ligaments and/or muscles	15	Contusion	12	Other	15
Burn	11	Fracture	11	Hematoma	10	Fracture	14

TABLE 43

Percentage distribution of accidents by place of occurrence, institutional and household surveys, by country.

Place of occurrence	Institutional survey				Household survey[a]		
	Brazil (n=201)	Chile (n=1,024)	Cuba (n=4,429)	Venezuela (n=600)	Chile (n=394)	Cuba (n=76)	Venezuela (n=120)
Home	57	37	44	43	52	49	54
Institution	3	31	24	7	16	22	10
Public place	37	28	30	31	28	28	35
Other	4	4	3	20	4	1	1

[a]Data for Brazil being processed.

ogical surveillance system to provide information on behaviors, trends, and abrupt changes, so that appropriate intervention measures can be implemented.

A Seminar on Accidents in Childhood, organized by PAHO as a preliminary activity to the VIII Latin American and XV Pan American Congress of Pediatrics (1987), led the presidents of the pediatrics societies of a large number of countries in the Region to sign the Declaration of Caracas. It promotes greater attention to the problem by health, social security, education, transportation, and other agencies in each country, and calls for the prevention of accidents in children and adolescents. Application of the epidemiologic instrument created by PAHO was among the suggestions. In 1988, the pediatrics societies of Argentina and Chile included the topic of accidents in their annual congresses, and Brazil's society, jointly with the Latin American Pediatrics Association, organized the I Latin American Congress on Accidents in Childhood (Pôrto Alegre, October 1988). That meeting produced the Pôrto Alegre Letter, which reaffirmed the interest this subject merits and suggested the application of the survey created by PAHO.

Recent reports indicate that pediatrics societies are rapidly starting to give the subject of accidents in children the same importance as clinical topics, which they have so successfully tackled in the past.

The Department of Pediatrics of the Paulista School of Medicine and the Epidemiology Group of the São Paulo Prefecture in Brazil, with financial and technical support from PAHO, applied the Organization's research protocol to an investigation of the causes and characteristics of accidents in children and youth (0 to 24 years of age). The epidemiological instrument was applied to all cases admitted due to violent causes to all hospitals in the São Paulo Prefecture between 12 and 27 September 1988. During this time, 6,557 accidents (95.0% unintentional, 4.2% intentional, and 0.8% unknown) were recorded. The age distribution of victims of the unintentional accidents was as follows: 0–4 years, 21.7%; 5–9 years, 22.5%; 10–14 years, 23.2%; 15–19 years, 20.3%; and 20–24 years, 12.3%. Males accounted for 60.2% of the accident victims and females for 39.8%. Of the total, 23.4% occurred in the morning, 55.8% in the afternoon, and 20.8% at night. Falls were responsible for 53.3% of the cases, blows for 12.7%, traffic accidents for 7.6%, animal bites for 5.4%, burns for 2.7%, foreign objects for 1.8%, and other causes for 16.5%; 50.8% occurred at home, 33.2% in public places, 15% in institutions, and 1% in unknown sites. Thirty-three percent of the injuries were to the upper extremities, 30.6% to the lower extremities, 12.3% to the cranium, 7.7% to the face, 3.3% to the chest, 2.1% to the mouth, and 11.0% to other sites. Nine of the hospitalized patients died: one from suffocation, two from traffic accidents, and six from unknown causes.

During the same period, the Institute of Forensic Medicine recorded 113 violent deaths—81.4% in males and 18.6% in females. Age-group distribution was as follows: 0–4 years, 7.9%; 5–9 years, 6.1%; 10–14 years, 11.5%; 15–19 years, 30%; and 20–24 years, 44.2%. The causes were homicides and attacks (44.2%), traffic accidents (30.0%), drownings (7.0%), burns (6.1%), suicides (5.3%), poisonings (2.6%), falls (1.7%), asphyxiation (0.8%), and unknown causes (1.7%).

Mental Illness

Although they have low visibility in the Region's health policies, mental health problems are not only of considerable magnitude but are growing, and they constitute a true challenge to the goal of health for all by the year 2000. On reviewing the epidemiological bases of these conclusions, which are set out below, it should be borne in mind that the adverse events of recent years related to the economic and social effects of the foreign debt crisis, together with demographic and social processes (changes in the population structure and unplanned urbanization), may have led to increased rates of psychiatric disorders and made people more vulnerable to mental health disturbances in general.

Estimates of the occurrence of mental illnesses are based on psychiatric mortality and morbidity rates. Thus, various causes of death—for example, suicides, homicides, accidents, hepatic cirrhosis, and cerebrovascular diseases—may be used as indicators of underlying psychiatric and psychosocial disorders. From 1982 to 1985, the percentage of total years of potential life lost in both sexes in selected countries in the Region (Brazil, Costa Rica, Cuba, Mexico, Trinidad and Tobago, Uruguay, and Venezuela) due to these causes ranged from 35% to 47%. Furthermore, it is estimated that between 1985 and the year 2000 crude death rates for the above causes will increase by 11%.

The percentage of years of potential life lost from violent causes among the first ten causes of death in four (Brazil, El Salvador, Mexico, and Trinidad and Tobago) of six countries (the others being the Dominican Republic and Paraguay) in the Region was greater than the percentages due to malignant tumors or intestinal infections.

In addition, the prevalence rates found for specific psychiatric disorders in various community studies in Latin American countries show that these conditions represent a significant burden for the societies. Table 44 reports information obtained in these studies about the prevalence of a heterogeneous group of disorders. It is estimated that by the year 2000 these rates will increase by almost 48%, based on the growth and relative aging of

TABLE 44

Prevalence (median and range) of selected neuropsychiatric disorders obtained from several epidemiological studies in Latin America (in %).

Problem	Countries	Median	Range
Alcohol dependence syndrome[a]	Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru, Puerto Rico	10.0	4.4–24.4
Alcohol abuse	Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Puerto Rico	17.0	7.0–28.3
Mental retardation	Argentina, Brazil, Chile, Colombia, Peru	1.3	0.8–3.4
Epilepsy	Argentina, Brazil, Chile, Costa Rica, Peru	1.2	0.9–2.3
Organic brain syndrome	Argentina, Brazil, Chile, Costa Rica	1.1	0.5–1.5
Cognitive disorders	Peru, Puerto Rico	3.0	2.9–3.0
Functional psychosis	Argentina, Brazil, Chile, Colombia, Costa Rica, Peru, Puerto Rico	1.1	0.2–8.6
Neurosis	Argentina, Brazil, Chile, Costa Rica, Peru, Puerto Rico	14.5	5.5–40.2
Personality changes	Costa Rica, Peru	4.7	3.4–10.7
Cannabis dependence	Colombia, Costa Rica, Mexico, Peru	1.2	1.1–7.7

[a]Men only.

Source: Levav, I., B. Lima, M. Somosa-Lenon, M. Kramer, and R. González. Salud mental para todos en América Latina y el Caribe. Bases epidemiológicas para la acción. *Boletín de la Oficina Sanitaria Panamericana* 107(3):196–219, 1989.

the population, with a consequent increase in groups at greater risk of suffering psychiatric disorders.

Noteworthy among the community studies mentioned is the one recently conducted in Puerto Rico in a population aged 17 to 64 years, which investigated the prevalence of psychiatric disorders over six months according to rigorous methodological criteria. This investigation revealed the existence of anxiety problems in 7.5% of the population studied, alcohol abuse or dependence in 4.9%, cognitive deficit in 3.0%, affective disorders in 2.9%, and schizophrenic disorders in 1.7%.

The health services' response to the care needs of the mentally ill is generally provided by psychiatric hospitals, institutions that are usually custodial and have little therapeutic value to patients. Primary prevention of mental disorders and rehabilitation of patients have almost never been included in health programs, nor have, with a few exceptions, mental health promotion activities.

Despite this general situation, it should be noted that several of the Region's countries have adopted national mental health plans that have resulted in the programming of activities through primary care. With that objective, efforts have been made to train specialized and nonspecialized workers, to produce teaching instruments, and to evaluate the instruction. Lately, initiatives have been taken to incorporate mental health programs into the framework of local health systems, and prospects are favorable for this course of action. These new programmatic lines will offer community alternatives to care traditionally provided by mental hospitals.

The development of human resources in mental health has paralleled the clinical orientation of the programs. A recent survey of the emphasis of undergraduate programs in 128 psychology faculties in 17 countries showed that an absolute majority had a clinical orientation, only 11 had a community orientation, and none of them had a general health orientation. A similar situation exists in postgraduate psychiatric residency programs, although no such specific information exists. As a partial response to this situation, which hinders the implementation of the new, community-based programming promoted by PAHO, the Inter-American Network for the Development of Psychology in Community Health has been established, in collaboration with various organizations.

PAHO has also been encouraging the establishment of mental health action groups in the subregions. So far,

groups have been organized in the Central American Isthmus, the Andean Area, and the Plata River Basin. These groups promote joint activities and the exchange of technical materials, and are an invaluable tool for making the most effective use of available resources in the Region.

Alcohol and Drug Abuse

The use of alcohol and other psychoactive substances is an alarming public health problem in the Region, and its magnitude has grown significantly in the past decade.

The most commonly used indicator of the alcohol use problem is per capita consumption, calculated as equivalent absolute alcohol values. The estimates of consumption in most of the countries are based on information on the production, importation and exportation, and sales of alcoholic beverages. Thus, the figures presented are a measure of the availability of beverages legally on the market, rather than a measure of consumption per se. Clandestine production, importation, and sales are not included in these calculations and may be triple the amount of legal production in some places.

According to available data (Table 45), per capita consumption of absolute alcohol changed significantly between 1970 and 1980. Of the 28 countries for which data are available, 25 experienced some degree of increase in annual per capita consumption between 1970 and 1977. Information from some countries for the period 1977–1985 shows a marked trend toward a rise in consumption.

Another indicator of problems related to alcohol is the mortality rate from hepatic cirrhosis. In 1975 the age-adjusted death rates ranged between 1.4 per 100,000 in Argentina and 22.7 per 100,000 in Mexico. In 1985 the highest value in the hepatic cirrhosis death rate was again found in Mexico, at 24.2 per 100,000, and the lowest was in Barbados, with 2.5 per 100,000.

The absence of a clear relationship between per capita consumption and mortality from cirrhosis is partly explained by lack of uniformity in the way consumption is calculated and variations in diagnosis criteria among the countries.

A third indicator of alcohol problems is traffic accidents. For example, in 1983, 35% of the deaths from accidents in Peru were related to alcohol, as were 16% in Mexico.

In Argentina, Canada, Chile, Costa Rica, Mexico, and the United States of America, sufficiently high priority has been given to alcohol-related problems to spark the creation of specialized centers or research institutes for their study.

All of the countries in the Region have laws that control the production and sale of alcoholic beverages, especially regarding retail sites, sales hours, and minimum age for beverage purchases. Provisions also exist in most countries' codes that establish sanctions against driving a vehicle while inebriated. However, in very few countries is blood alcohol routinely measured, and only a few have fixed values above which a person is considered legally intoxicated.

All the countries tax the production, importation, and sale of alcoholic beverages. However, since tax increases have not kept pace with inflation, in constant money the tax is now less than it was two decades ago.

The problem of the illicit use of psychoactive substances is growing in the Region, causing great concern among national authorities and international agencies.

Aerial photographic studies suggest that approximately 60,000 hectares in the Andean Area are devoted to the cultivation of coca bushes, and the annual production of coca leaves is estimated at approximately 118,000 metric tons. Most of this cultivation is illegal, but its eradication poses many difficult economic, geographic, and social problems.

Coca leaves are processed in clandestine laboratories and the alkaloid is distributed through a complex international network that is very hard to control. The intermediate product of the processing is a substance rich in cocaine sulfate known as *basuco*; its use has become extensive in the cities of the producing countries.

TABLE 45

Per capita alcohol consumption (average liters/person/year), by country, 1970 and 1980.

Country	1970	1980
Argentina	13.28	12.59
Barbados	4.98	7.44
Brazil	1.82	2.55
Chile	6.11	6.72
Colombia	2.19	2.62
Costa Rica	2.23	3.03
Cuba	1.59	2.26
El Salvador	0.89	1.31
Guadeloupe	7.00	10.51
Martinique	10.72	11.61
Mexico	2.01	5.25
Nicaragua	2.78	2.30
Trinidad and Tobago	3.06	5.25
Uruguay	5.71	4.15
Venezuela	4.02	4.37

Most of the processed final product, cocaine chlorhydrate, is exported to the Region's industrialized countries and Europe where it is self-administered by users in various ways. The pure alkaloid can be separated out through simple procedures, and when inhaled, it causes acute intoxications and an increased probability of addiction.

In the industrialized countries of the Region, the lifetime prevalence of cocaine use among secondary school students is between 4.0% and 16.8%, according to several investigators. Similar studies in Latin America indicate prevalences of 1.4% to 6.7% in the population aged 12 to 45 years. Although these figures are not very similar, they nevertheless show that the distinction between "producing" and "consuming" countries in terms of dependency problems is becoming less marked and that the use of psychoactive substances is increasing in the population exposed to the production, processing, and shipment of these substances.

Marijuana is used throughout the Region. According to some studies, the percentage of individuals that have used marijuana at least once in a lifetime ranges between 21.2% and 38.8% in the industrialized countries and between 6.0% and 11.0% in the developing countries studied.

Inhalable substances, including industrial solvents, amyl nitrate, and various glues, are used by juveniles in the marginal districts of cities in developing countries, as well as by certain groups in the developed countries. For example, it has been estimated that 4.4% of middle-school students in Mexico consume inhalants, as do 3.0% in Chile.

Consumption of psychotropic drugs for nontherapeutic purposes is widespread in the Region. Estimates of the prevalence of these substances' consumption are on the order of 2.1% to 3.3% in the developed countries. Levels between 4.4% and 9.3% have been found in the developing countries.

Other substances such as opiates and their synthetic derivatives, amphetamines, methaqualone, barbiturates, and hallucinogens are used commonly in the Region, although usually on a lesser scale. The exceptions are found in the more developed countries, where heroin abuse constitutes a serious problem that generally affects certain groups of adults older than 30 years.

The response of the countries to these problems has included adoption of legal measures, promotion of research, provision of treatment services, and initiation of preventive activities, all in widely varying degrees, depending on the country.

Although the volume and quality of information about drug-related problems have increased, the data base is not yet sufficient to determine with certainty the size, nature, and distribution of the substances' production and consumption. National resources have been assigned to research, and a high-level consortium has been formed to exchange information among the countries.

Some countries have organized high-level national commissions responsible for directing efforts to control the trafficking and abuse of psychoactive substances. Among their functions are advising the government on legislation, suggesting policies and directives, allotting resources to combat the illegal traffic and to eradicate crops, and establishing enforcement measures and prevention and treatment standards.

The ministries of health in most of the countries have committees or working groups that direct treatment and prevention programs. In general, departments of mental health are in charge of the programs, but sometimes such responsibility is assigned to a specialized institute or center. In some countries the ministry of justice or the interior has formed a working group to coordinate prevention activities and campaigns to obtain the public's support for national programs. Ministries of education usually participate in the national groups or commissions, and in some countries they have started prevention programs in the school system through integrating drug abuse education into the curriculum and promoting extracurricular activities.

Development of an infrastructure of services is perhaps the area where the fewest advances have been made. In fact, few specialized programs exist in the public sector. Treatment services are generally provided by psychiatric centers. Rehabilitation centers and detoxification units have been created in some countries. Such services are usually oriented toward meeting the needs of the most affected population, and they are difficult to maintain. There are also a few programs that aim at early intervention and promote mutual support groups.

The training of personnel is an activity of great importance in the Region's developed countries. In contrast, in the developing countries this activity is limited to sporadic courses and seminars. The training programs offered by the National Commission on Drug Abuse in Argentina and the National School of Public Health of Colombia in Medellín are noteworthy for their quality and the cooperation they provide to other countries.

Some governments have signed bilateral cooperation treaties in this field and others receive assistance from the United Nations Fund for Drug Abuse Control. Many have received PAHO cooperation in evaluating the situation, drawing up plans and programs, and conducting epidemiological studies.

A network of collaborating centers in the field of drug dependencies has been organized. PAHO is working closely with five of these centers and is promoting technical cooperation among the countries, especially in the areas of personnel training, epidemiological research, and dissemination of technical information.

Disabilities

Owing to the scant epidemiological and statistical documentation in the field of rehabilitation and the fragmentary nature of the information available, the Region's programs in this area respond to political and circumstantial pressures and not to real demand.

It is estimated that close to 10% of the population in any country suffers from some form of physical or mental disability. The prevalences are highest for physical deficiencies, chronic illnesses, sequelae to accidents and violence, mental retardation, and sensory deficits.

Causes and prevalences vary among the countries, since disability and handicaps are closely linked to sociological, economic, and cultural influences. Nevertheless, estimates indicate that the number of disabled persons will rise as a result of such factors as increased survival owing to better medical technology, increased life expectancy, deterioration in food distribution, and worsening of the economic crisis. Further, the trends toward democratization and community participation will increase the demand for services as a basic human right.

Although no epidemiological studies exist in Latin America and the Caribbean on the prevalence of disability, data collected for other purposes in some countries allow an approximate estimate.

In Venezuela, the Directorate of Special Education registered 1.7% of the population between 1 and 14 years of age in 1985 as having various learning disabilities. Studies conducted in Cuba in 1987 and 1988 at the Julio Díaz Rehabilitation Hospital and the Santiago de las Vegas Polyclinic showed a marked predominance in disability in adults and, among them, in persons over 65 years old (37.9%). Of the total number of adults with disabilities, 51.6% were physically compromised; hemiplegia, hemiparesis, monoparesis, and amputations accounted for 67% of the physical disabilities.

The Faculty of Education of the University of Guyana carried out a survey in a village in 1986, visiting 815 homes containing 4,500 persons (85% of the village's total population). The survey found that 2% of the child population suffered from some (moderate to severe) disability, and that none of these children were receiving rehabilitation assistance.

In Argentina, of a total of 1,240 disabled persons evaluated in 1986 for the purpose of applying a social law, 27.2% were 1 to 14 years old and 27.8% were 15 to 60 years old. Their main causes of deficiency and disability, in order of frequency, were diseases of the nervous system and sensory organs, 31.0%; congenital anomalies, 20.5%; mental disorders, 14.3%; perinatal conditions, 7.4%; diseases of the circulatory system, 5.8%; and osteomuscular and connective tissue diseases, 3.3%. Only a third of the disabled population examined was judged to have severe conditions.

In the United States of America the *Disability Statistics Bulletin,* Number 1, Spring 1988, reported: "Of the total population, 14.1% . . . are limited in activity due to a chronic health condition. Of the total population, 3.8% are unable to perform their major activity, 5.9% are limited in the amount or kind of major activity they can perform, and 4.4% are limited in nonmajor activity."

In most of the countries, the prevalence of major disabling syndromes is calculated at between 4% and 7%. However, if varying degrees of disability were taken into account, this prevalence would surely be much higher. Most of the available data do not differentiate a deficiency (the expression of an injury or disease at the organ or system level) from a disability (the functional result of the deficiency) or a handicap (limitations imposed on the individual by a nonadaptive environment and not by the person).

Examination of the various factors that produce a disability reveals the need to generate multisectoral approaches, to intensify prevention measures, and to integrate rehabilitation activities into the entire health plan. There is an urgent need for studies and investigations that will shed more light on the epidemiologic factors involved in disability in order that plans may be based on the real situation.

In Latin America and the Caribbean, services for disabled persons generally adhere to a vertical rather than an integrated model. Almost without exception, intersectoral cooperation in planning, resource mobilization, and provision of services is inadequate or nonexistent. As a consequence, although a disability may be dealt with, deficiency goes undetected, and because there is no coordination with other sectors, the disabled person is not integrated into society. This situation not only hurts the individual but makes care systems more expensive.

It is increasingly recognized that services for the disabled should be comprehensive, offer a variety of opportunities, and ensure continuity. Hospital services still are not organized along these lines, however, and conduct few rehabilitation activities. Table 46 shows the proportion of hospitals that provided rehabilitation care in different countries in the Region. The sector responsible for those rehabilitation services is shown in Table 47.

The advantages of integrating rehabilitation activities into overall planning, which from the social viewpoint is one of the strategies for achieving balanced opportunities and equity, have still not been sufficiently evaluated. Each country's objectives should be to develop a national policy that focuses on all aspects related to deficiency, disability, and handicaps in the general population and to create an institutional framework for disability programs.

TABLE 46

Number of hospitals and percentage with rehabilitation services in some countries of the Region, 1985.

Country	Total hospitals	Percentage with rehabilitation services
Argentina	3,180	4.2
Chile	181	14.4
Colombia	910	14.5
Ecuador	380	6.8
Mexico	806	11.3
Peru	353	12.7
Venezuela	457	10.3

Source: Workshop on Prevention, Rehabilitation, and Integration of Disabled Persons, Washington, D.C., PAHO, 1985.

TABLE 47

Rehabilitation services in some countries of the Region, according to affiliation of institution, 1985.

Country	Total	Official	Social security	Private	Other
Argentina	133	60	7	60	6
Chile	26	17	—	9	—
Colombia	132	82	27	14	9
Ecuador	26	16	8	—	2
Mexico	91	28	53	—	10
Peru	45	10	3	28	4
Venezuela	47	27	11	4	5

Source: Workshop on Prevention, Rehabilitation, and Integration of Disabled Persons, Washington, D.C., PAHO, 1985.

Health of Women

This chapter analyzes women's health and its causal relationship with the prevailing social environment. The concept of "women," which rests at the core of this discussion, is viewed not only as an empirical biological condition of one of the sexes, but also as a social construct that is based on the biological difference between the sexes and that, as such, embraces a set of guidelines on the conduct and behavior that is acceptable to and expected by each sex. This set of prescriptions, which recent literature refers to as "gender," is a historical product that changes over time and space and affects the opportunities—such as health and survival—of men and women in different social groups. The consideration of gender as one of the social variables in an epidemiological analysis is the frame of reference for this presentation.

This section has been subdivided into three headings: differences in mortality levels and structure by sex, women's morbidity and mortality and gender determinants, and fertility control and reproductive rights. The fact that more emphasis is placed on mortality and fertility reflects the greater availability and reliability of data on these topics. It should be stressed, however, that mortality only illustrates the ultimate deterioration of health, and does not deal with the significant changes in the health conditions of the surviving population.

Differences in Mortality Levels and Structure by Sex

The following paragraphs summarize the main differences by sex in the Region's mortality. These differences will be examined on the basis of mortality levels and of the leading causes of death for the overall population and for some age groups.

Before examining mortality figures, it should be remembered that, as was indicated in the section on population in Part I, death registrations (on which mortality figures are usually based) are seriously limited by underreporting of deaths, by a high percentage of deaths attributed to ill-defined causes, and by the many records that have no information on the cause of death. While these data should be interpreted with extreme care when comparing rates worldwide, less caution is required when comparing sex differences in mortality or morbidity in different countries. Table 5 in the above-mentioned chapter presents the estimated percentages of underregistration of deaths in several Latin American countries, and indicates that Argentina, Chile, Costa Rica, Cuba, Guatemala, Mexico, Uruguay, and Venezuela are the countries with the most reliable records (underregistration below or about 10%).

Throughout the world, given proper sanitary and nutritional conditions and peace, mortality rates tend to be higher for males than for females at any age, with women showing greater longevity than men. The far greater proportion of males who die in early infancy—as well as in the womb—is generally attributed to biological factors, an explanation that is not closely associated with systematic changes in the environment. Although in adults it is more difficult to separate biological from environmental influences, there is also proof of the presence of a biological factor in higher male mortality. Predictions that women's life expectancy would approach that of men when women took up activities and lifestyles similar to men's—thus exposing themselves to the same risks—have not come true. In fact, the gap between the sexes has

widened as life expectancy at birth has increased. However, the geographic and social changes observed over time in this widening gap between the sexes cannot be explained simply in terms of biological factors. These variations also are a result of different behavioral patterns socially attributed to men or women that place each in different risk categories, and to different priorities in resource allocation derived from the different value that society attaches to the functions performed by one or the other sex.

As can be seen in Table 20 in the section on mortality in Part I, women's life expectancy at birth always exceeds that of males throughout the Region of the Americas. The magnitude of this difference, however, varies from country to country, and is positively associated with the degree of longevity prevailing among the respective populations. Thus, the difference in years of life between the sexes is twice as great in countries with higher longevity (Canada and the United States) than the average difference in countries with lower longevity (Haiti and Bolivia)—7 versus 3.5—for the period 1985–1990. Intermediate longevity levels show average differences between 4 and 6. It should be noted that male life expectancy at birth in Costa Rica and Cuba has reached levels similar to those in North America (72–73 years), while female life expectancy levels are still 2 to 3 years below those of industrialized countries (79–80 years).

The presence of some exogenous social factors that determine the magnitude of the difference in mortality rates between men and women is evident when the structure by age and causes of death is analyzed by sex.

The corresponding table in Annex III of this volume presents specific mortality rates by age and sex, as they are officially reported to PAHO by Member Countries.

Table 48 of this section shows the ratio between male and female mortality rates by age for several countries listed according to the descending order of their populations' longevity.

In analyzing country variations in the magnitude of the sex difference in mortality for each age group, it must be borne in mind that the "natural," or at least the statistical, tendency is toward higher mortality rates for males than for females throughout the entire life cycle—including in the fetal stage—and for most causes. This implies that a reduction in the mortality rate difference between men and women and, even more, a complete reversal of the ratio, should be viewed with alarm, because they might be clues to the existence of physical and sociocultural environmental factors that are reducing or eliminating the usual advantage of female survival or that are negative and disproportionately affect women. Within this context of geographic variations in the differences of mortality rates by sex, two age groups command special attention: 1–4 year olds and 15–44 year olds.

Children 1–4 Years Old

Using the mortality ratio of countries with the highest longevity (Canada and the United States) as a reference and comparing it with the ratios obtained for the same age group in all other countries, it is observed that the group of females with the greatest relative disadvantage is the 1–4-year-old age group. In all countries, mortality ratios for this age group fall below the reference level; four countries show values lower than one, which indicates higher mortality rates for females than for males. These countries are Guatemala, Peru, Trinidad and Tobago, and Uruguay (Table 48).

The sign reversal in the mortality difference by sex is not a statistical artifice; rather, it reflects a real situation whose incidence in other countries of the Americas has been corroborated by additional sources of information. This phenomenon of excess female mortality during childhood already had been identified during the 1960–1980 period in official country reports to PAHO that the Organization published[14] in 1985. During that period, excess female mortality in the 1–4-year-old age group was seen not only in the above-mentioned four countries, but also appeared periodically in 20 of the 38 countries that submitted the respective information: 13 in Latin America and 7 in the Caribbean. Furthermore, in 1987, in its quarterly statistical report on world health, WHO[15] also documented an excess female mortality during childhood in Latin America, based on an analysis of information from vital statistics and the World Fertility Survey. In Chile's case in 1961–1966, Taucher[16] ruled out possible explanations for this phenomenon associated with errors or biases in vital statistics.

An independent and highly reliable source of information for vital statistics is the Demographic and Health Survey Program, which was implemented in 1985–1989 in 60 developing countries, 10 of them in the Region of the Americas, in coordination with the Institute for Resource Development/Westinghouse/Macro Systems and with the assistance of the Population Council. Mortality data in children under 5 years old, based on retrospective methods from a representative sample of women of childbearing age, further support the statement that excess female mortality during childhood is neither a statistical artifice nor an isolated or temporary event in the Region. Figures consistent with this statement were found in five of the eight countries that published information broken

[14]Pan American Health Organization, *Health of Women in the Americas,* Scientific Publication No. 488 (Washington, D.C., 1985), p. 106.

[15]World Health Organization, "Women and Health," *World Health Stat Q* 40(3), 1987.

[16]E. Taucher, "La mortalidad infantil en Chile," *Notas de Población* (CELADE) VII (20), 1979.

TABLE 48

Ratio between male and female mortality rates in selected countries, most recent year.

Country (year)	Age groups									
	0–1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75 +
Argentina (1985)	1.27	1.09	1.95	2.04	1.52	1.59	2.04	2.09	1.86	1.21
Canada (1986)	1.25	1.18	1.47	2.92	2.51	1.80	1.72	1.98	1.91	1.39
Chile (1987)	1.21	1.43	1.57	2.37	2.55	1.85	1.66	1.69	1.64	1.25
Colombia (1981)	1.26	1.07	1.39		2.09[a]		1.38[b]		1.31[c]	
Costa Rica (1988)	1.38	1.45	1.43	2.32	1.92	1.59	1.62	1.47	1.53	1.45
Cuba (1987)	1.33	1.25	1.61	1.33	1.47	1.37	1.25	1.38	1.33	1.11
Dominican Republic (1985)	1.10	1.03	1.13	1.48	1.53	1.33	1.20	1.40	1.39	1.13
Ecuador (1987)	1.21	1.01	1.25	1.63	1.94	1.55	1.49	1.46	1.44	1.07
El Salvador (1984)	1.16	1.07	1.27	4.16	3.24	2.17	1.76	1.65	1.45	1.37
Guatemala (1984)	1.14	0.91	1.06	1.52	1.75	1.27	1.46	1.28	1.23	1.09
Honduras (1981)	1.23	1.06	1.18	1.62	1.93	1.58	1.45	1.27	1.29	1.28
Mexico (1986)	—	1.05	1.48	2.55	2.62	2.17	1.73	1.50	1.39	1.13
Panama (1987)	1.27	1.15	0.99	2.72	2.20	1.72	1.67	1.42	1.39	1.06
Paraguay (1986)	1.05	1.01	1.12	1.25	1.43	1.21	1.25	1.72	1.54	1.08
Peru (1983)	1.11	0.98	1.12	1.26	1.19	1.11	1.36	1.42	1.40	1.08
Trinidad and Tobago (1983)	1.29	0.96	1.31	2.45	2.11	2.05	1.59	1.53	1.30	1.03
United States of America (1987)	1.25	1.27	1.68	2.82	2.61	2.10	1.79	1.80	1.75	1.34
Uruguay (1986)	1.25	0.99	1.47	2.13	1.56	1.45	1.98	2.23	1.87	1.21
Venezuela (1983)	1.27	1.02	1.48	2.84	2.44	1.73	1.57	1.55	1.46	1.11

[a]14–44 years old.
[b]45–59 years old.
[c]60 years old and older.
Source: PAHO. Technical Information System.

down by sex: Brazil, Colombia, Ecuador, Guatemala, and Mexico (Table 49).

According to WHO, "when excess female mortality during childhood is observed, this must be viewed with alarm, as a possible sign of a significant social problem—sex discrimination" (see footnote 15).

The preliminary analysis of causes of death by sex in this age group provides the basis for formulating hypotheses about the origin of excess female mortality among children. Tables in Annex III show, for those countries that submit official information to PAHO, mortality rates by sex for each of the five leading causes of death, as well as the relative weight of each one vis-à-vis the total number of deaths from defined causes.

The main patterns regarding sex differences deduced from these figures are the following:

• Accidents are among the five leading causes of death for most reporting countries. Although their relative weight tends to be greater in countries of higher socioeconomic development, their incidence is as high or higher than in the other countries. From the first year of life until death, accidents show the greatest sex difference in mortality among all causes of death, with males always at a disadvantage. This reflects the "effectiveness" of the different socialization processes by gender, which begin during infancy and trigger clearly different forms of behavior for men and women in terms of active, risk-related behavior.

• The causes most responsible for the excess female mortality in the age group 1–4 years old in the Region are all preventable. In descending order, based on the percentage of national occurrences in which they are associated with a higher mortality for females than for males (within the total number of cases for which they are cited as leading causes), these causes, according to the International Classification of Diseases (ICD, 9th Revision), are the following: nutritional deficiencies (260–269),

TABLE 49

Mortality rates in children 1 to 5 years old in selected countries, most recent period (rates per 1,000).

Country	Period	Males	Females
Brazil	1971–1975	27.0	22.0
	1976–1980	21.0	14.0
	1981–1986	8.0[a]	14.0[a]
Colombia	1971–1975	27.0[a]	30.7[a]
	1976–1980	14.0[a]	20.6[a]
	1981–1986	12.8	6.1
Ecuador	1972–1976	46.0	42.1
	1977–1981	26.3[a]	27.9[a]
	1982–1986	24.6[a]	25.8[a]
Guatemala	1977–1987	43.6[a]	47.0[a]
Mexico	1977–1987	14.5[a]	16.5[a]

[a]Female mortality rates are higher than male mortality rates.
Source: Demographic and health surveys conducted by the respective countries with the Institute for Resource Development/Westinghouse, 1986–1987.

72%; influenza and pneumonia (480–487), 64%; bronchitis, emphysema, and asthma (490–493), 56%; measles (055), 50%; whooping cough (033), 50%; intestinal infections from specified organisms and ill-defined causes (007–009), 36%.

Within this group of causes, nutritional deficiencies deserve special attention, not only because this cause is more often directly associated with female mortality, but also because it is a key contributing factor to other causal instances of higher female mortality. In this context, the 1973 PAHO study on mortality in childhood[17] found that more than 50% of all deaths examined in Latin America had malnutrition as the underlying or related cause.

More recent official figures on mortality from malnutrition, which appear in Annex III, show that of the 11 Latin American countries in which nutritional deficiencies are listed among the five leading causes of death, the condition is actually linked to excess female mortality in 8: Panama (1987), Uruguay (1986), Argentina (1985), Paraguay (1986), Ecuador (1987), El Salvador (1984), Guatemala (1984), and Peru (1983). Two other countries, Venezuela (1983) and Honduras (1981), in which nutritional deficiencies are not listed among the five leading causes of death, also show excess female mortality from this cause. The negligible number of deaths from malnutrition in Cuba (1987) and Costa Rica (1988) are not statistically significant. It should be noted, however, that not only do these deaths affect women exclusively, but also that past official figures showed Cuba (1978) to be among those countries with overall excess female mortality and mortality from nutritional deficiencies among the 1–4-year-old age group.

In conclusion, it could be said that evidence from more recent official statistics indicates that in nearly 50% of the Region's countries malnutrition disproportionately affects the female population 1–4 years old, rendering this cause the most important (direct and indirect) component of excess female mortality among children recorded for those countries.

Sex differences in the incidence of malnutrition during childhood also have been documented by other information sources. The above-mentioned Demographic and Health Surveys studied the nutritional status of children between the ages of 3 and 36 months in five countries of the Region: Brazil, Colombia, Guatemala, the Dominican Republic, and Trinidad and Tobago. No significant differences by sex were found in Brazil and the Dominican Republic; in Guatemala, the higher incidence of malnutrition among girls becomes evident only at extreme levels; and in Colombia and Trinidad and Tobago, based on any of the criteria of measurement used (global, chronic, or acute), a higher frequency of malnutrition among girls than among boys becomes systematically evident (Tables 50 and 51).

The reasons for this disparity must be sought in the distribution of food within the family, particularly when resources are scarce. Studies conducted in Brazil prior to 1980 showed that, both in urban and rural environments, women and young girls are the last to eat and they eat less and poorer quality food than boys and men.[18] Cul-

[17]R. R. Puffer and C. Serrano, *Patterns of Mortality in Childhood,* Scientific Publication No. 262 (Washington, D.C.: PAHO, 1973).

[18]C. Barroso and T. Amado, "Impact of the Crisis on the Health of Poor Women: The Case of Brazil," in UNICEF, *The Invisible Adjustment* (Santiago: Alfabeta Impresores, 1987).

TABLE 50

Percentage distribution of children 3 to 36 months of age by standard deviation of the NCHS/CDC/WHO international pattern of weight for age, height for age, and weight for height, Colombia, 1986.

Type of pattern and sex	Standard deviation					Total	No. of children
	−2.00 or more	−1.00 to −1.99	−0.99 to +0.99	+1.00 to +1.99	+2 or more		
Height for age							
Males	24.3	27.4	46.1	1.5	0.7	100.0	648
Females	21.0	31.8	44.5	2.1	0.7	100.0	649
Weight for age							
Males	10.9	25.8	56.9	5.8	0.5	100.0	672
Females	13.0	26.7	52.7	5.8	1.9	100.0	652
Weight for height							
Males	0.8	9.5	73.7	13.5	2.4	100.0	672
Females	1.2	12.4	69.3	12.8	2.4	100.0	652

Source: Corporation for The Regional Center for Population, Colombia Ministry of Health, Institute for Resource Development/Westinghouse. Demographic and health survey, 1986. Bogotá, 1988.

TABLE 51

Percentage distribution of children 3 to 36 months of age by percentage of the NCHS/CDC/WHO international pattern of weight for age, height for age, and weight for height, by sex, Trinidad and Tobago, 1987.

Type of pattern and sex	Percentage of the NCHS/CDC/WHO international pattern			Total	No. of children
	90	90–110	110		
Height for age					
Males	0.2	98.8	1.0	100.0	407
Females	2.1	97.2	0.7	100.0	435
Weight for age	80	80–120	120		
Males	7.6	87.0	5.4	100.0	407
Females	9.4	85.5	5.1	100.0	435
Weight for height					
Males	1.7	95.6	2.7	100.0	407
Females	2.3	95.2	2.5	100.0	435

Source: Family Planning Association of Trinidad and Tobago, Institute for Resource Development/Westinghouse. Demographic and health survey, 1987. IRD/Westinghouse, Columbia, Maryland, 1988.

tural patterns in Mexico render the female child the last priority in terms of food, as reflected in the proverb: "Cuando la comida es poca, a la niña no le toca" (When food is scarce, young girls get none).[19] Similar patterns also have been observed in other Latin American and Caribbean countries.

This phenomenon calls for urgent research and treatment, because inequities in nutrition or health care during childhood may result in serious problems for women later in life. In fact, a diet with insufficient proteins, calcium, and vitamin D slows growth and alters the calcification process, ultimately affecting the bones, particularly in the pelvic region. When pelvic bones are smaller or exhibit deformations, they often cause complications during childbirth that are associated with maternal mortality.

Given the eminently preventable nature of mortality causes that seem to affect each sex differently and assuming that immunization campaigns, environmental sanitation measures, nutrition programs, early diagnosis measures, and possibilities of avoiding deaths from accidents

[19]Elu de Leñero, quoted by L. Sennott-Miller, "The Health and Socioeconomic Situation of Midlife and Older Women in Latin America and the Caribbean," in *Midlife and Older Women in Latin America and the Caribbean* (Washington, D.C.: PAHO, 1990).

or violence are universal in scope, it could be said that the existence of sex differences in mortality among children suggests the presence of cultural patterns that cause families to give to or to seek different treatment for boys and girls.[20]

Age Group 15–44 Years Old

The age group that shows the greatest difference in mortality by sex in all countries is the group 15–44 years old, and especially the group 15–34 years old, which includes women of childbearing age and represents an important portion of the reproductive years of both sexes. The male/female mortality ratio in this group (Table 48) also shows the highest absolute and proportional variations among the countries, fluctuating between 2.92 for the 15–24-year-old age group in Canada and 1.06 in Guatemala.

It is important to note that a high male/female mortality ratio above 2 may be the result of a broad numerator or of a reduced denominator. In other words, a large mortality difference by sex for the 15–44-year-old age group may be due to excess male mortality, caused by such situations as armed conflict, or due to a low female mortality rate associated with a high standard of living and good health services coverage. On the other hand, a low male/female mortality ratio in this group often corresponds to greater risks of morbidity and mortality associated with maternity in unfavorable physical and social conditions. Thus, except for situations of war, female mortality rates exhibit a greater range of fluctuation among countries than male mortality rates. For example, a comparison of the variation of male and female mortality rates between two countries such as Guatemala and Canada shows that for the 15–24-year-old age group, Guatemalan women have a 312% higher mortality rate than Canadian women, while the corresponding rate for men is 114%.

If causes of death are included in the analysis, the following significant mortality differences by sex show up:

- In all Latin American and Caribbean countries, complications during pregnancy, childbirth, and the puerperium feature among the five leading causes of death for women in all or some subgroups of the 15–44-year-old age group (see Annex III).

These figures should be used cautiously, given the differences in underregistration in the various countries, which tend to be higher precisely in those countries where the maternal mortality problem is most serious. In terms of maternal mortality specifically, a topic that will be dealt with in greater detail in the following section, underregistration exceeding 50% has been estimated for the countries of the Region. And yet, even disregarding the underregistration factor, it is still a matter of great concern that such a high percentage (22% in Paraguay or 13% in Ecuador) of the total number of deaths in women aged 15–44 in Latin America, is associated with complications of maternity. It should be noted that in Paraguay this percentage is 111 times higher than in Canada and 8 times higher than in Cuba. The Latin American and Caribbean countries that show the lowest rates of mortality from complications during pregnancy, childbirth, and the puerperium and that also have the most reliable registration systems are Costa Rica, Cuba, and Uruguay.

- This is the age group for which deaths caused by external "unnatural" causes (accidents; suicides; and homicides, legal interventions, and operations of war) yield the greatest difference between men and women in all countries of the Region. Of these three cause groups, the most significant difference by sex is found in the category "homicides, legal interventions, and operations of war," while the least significant corresponds to "suicide."

A significant element in the etiology of motor vehicle accidents is alcohol consumption, which increases the probabilities of risky behavior; as will be seen further on, alcohol abuse also is more prevalent among men than among women. Most deaths from traffic accidents in youths have been linked to alcohol consumption by the victims: 50% to 60% in developed countries and slightly lower proportions in developing countries.[21]

In general, it can be said that the marked differences by sex observed in mortality from accidents and violence, which begin during the first year of life, are a serious quantitative expression of qualitative differences of socialization, which, from infancy on, begin to coerce the individual into assuming and developing certain forms of behavior considered more appropriate for his/her gender. Thus, boys are socialized to adopt aggressive, independent, competitive, and risky behaviors that are reinforced in play through representations of those elements that, in adult life and in childhood, are characteristic of male mortality: automobiles, weapons, violent confrontations, dangerous situations, and extreme physical effort. On the other hand, the forms of behavior that are inculcated and reinforced in girls are characteristically soft, sensitive, dependent, collaborative, and passive. These behaviors become familiar through peaceful games and toys appropriate for the functions of mother and housewife, and serve to insulate girls from risks that lie outside the domestic sphere.

[20]ECLAC, "Las mujeres y el cambio demográfico: estadísticas e indicadores" (document presented at Fourth Regional Conference on Integration of Women into Economic and Social Development in Latin America and the Caribbean, Guatemala, 1988).

[21]World Health Organization, *The Health of Youth—Facts for Action* (Geneva, 1989).

• Malignant tumors, beginning at age 25 and more important after age 35 (see Annex III), constitute the first or second leading cause of death among women in the Region, and are in the process of becoming the leading cause of death in 75% of the reporting countries. In all countries, cancer in the 25–44-year-old age group is associated, both in absolute and relative numbers, with higher female mortality—a difference that tends to be more marked in the relatively less developed countries.

The root of the excess female mortality from cancer during childbearing age and of the differences in magnitude among countries must be sought not only in the differences in the incidence of certain types of cancer with varying degrees of fatality, but also in social risk factors, such as the different availability of and access to medical technologies that could lead to early detection and treatment of cancers that are common among women.

• Regarding cerebrovascular diseases in the 25–44-year-old age group, 64% of Latin American countries that list them as one of the five leading causes of death also associate them with excess female mortality. These eight countries, which are at different stages of development, are listed in descending order according to the longevity of their populations: Costa Rica, Chile, Argentina, Uruguay, Venezuela, the Dominican Republic, Colombia, and Honduras. Heart diseases, on the other hand, are listed among the five leading causes of death by all reporting countries and are generally associated with higher male mortality. In four countries (20%) (Guatemala, Peru, Panama, and the Dominican Republic), however, the mortality rate associated with this cause is higher for women.

• Anemias are the fourth and fifth leading causes of female mortality among the age groups 15–24 years old and 25–44 years old, respectively, only in Honduras. In line with trends observed from infancy, in both age groups the death rate and number associated with this cause are higher among women than among men. Again, in only one country, Guatemala, nutritional deficiencies are listed among the leading causes of death for the 15–44-year-old age group; they are also the third leading cause of female mortality for the 15–24-year-old age group, with rates for women being 1.6 times higher than for men.

Female Morbidity and Mortality and Gender Determinants

The criteria for selecting problems, diseases, or health conditions to be included under female morbidity and mortality were the following: that they affect women exclusively or that they be more prevalent among women; that they have different consequences for women; that they imply different risk factors for men and women; and that they be associated with different interventions for men and women.

The list of health problems dealt with here is not exhaustive and clearly needs expanding to include, for example, aspects relating to infections of the genital tract, endemic goiter, oral health during pregnancy, and occupational health, among others.

Mortality and Morbidity Associated with Maternity

A maternal death should cause the greatest concern. After all, given the fact that such deaths can generally be avoided, they are an expression of how important sectors of the Region's female population are at a relative disadvantage in achieving their basic rights. "In today's world, maternal death is as anachronistic and illogical as death from exposure" (see footnote 15).

For purposes of international comparison, WHO has defined maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes."[22]

Magnitude, Levels, and Trends of Maternal Mortality. A true understanding of the incidence of maternal mortality is hindered by underregistration in vital statistics and by the inaccuracy or absence of cause-of-death information in death registrations. Regarding maternal mortality, in particular, pregnancy often is omitted as a cause of death in the death certificate. These omissions are seen even in hospital environments and are not limited to developing countries—recent studies conducted in the United States revealed a 27% underregistration of maternal mortality. The problem is aggravated by the fact that underregistration is most serious in those areas where maternal mortality is highest, a situation exemplified by Jamaica and Peru, where maternal mortality rates were found to be twice as high as the official rates.

Information problems are compounded by the definition itself, which limits the determination of maternal death to only 42 days following delivery. Studies conducted in the United States showed that 16% of deaths associated with pregnancy, delivery, and the puerperium occur between 42 days and one year afterwards.[23] In addition, it should be noted that deaths associated with contraceptive use are not included in maternal mortality.

[22]WHO, *International Classification of Diseases,* Vol. 1, Ninth Revision (Geneva, 1975), p. 764.

[23]In October 1989, WHO (ICD, 10th Revision) approved the extension of the period following pregnancy from 42 days to one year. However, this reclassification will not go into effect until 1993. Current information is affected and will continue to be affected by this underestimation.

Among the health indicators used by WHO, the greatest disparity between developed and developing countries, even greater than that for infant mortality, relates to maternal mortality. Thus, while mortality rates of nursing infants are, on the average, ten times higher in developing than in developed countries, for women in the developing countries the risk of dying during pregnancy, delivery, and the puerperium is, on the average, between 50 and 100 times greater than for women in North America or northern Europe.[24] In Paraguay, for example (even without considering underregistration), in the total number of women of childbearing age, the proportion who die as a result of this cause is 110 times higher than in Canada. Given the enormous importance of maternal mortality for society and the family, as well as its impact on regions of various development levels, the measurement of this phenomenon should be considered as an indicator of the quality of health and life in different societies.

The most commonly used maternal mortality indicator is the one that relates maternal deaths to live births (per 10,000 or per 100,000). Available figures show that in the Region of the Americas considerable variations can be seen, such as that between Canada and Bolivia, where the mortality rate in the latter is 120 times higher than in the former. Even in those countries with the lowest maternal mortality rates (Costa Rica and Cuba), figures are six times higher than in Canada. In terms of trends, figures for 1960–1984 generally indicate an overall decrease in maternal mortality. In 1960, 50% of the countries in Latin America and the Caribbean reported maternal death rates of about 20 per 10,000 or more. In 1984, this situation was seen only in three countries: Bolivia, Haiti, and Paraguay. If population growth and the combined effect of current mortality and fertility rates in Latin America and the Caribbean were maintained, approximately one million maternal deaths would be expected between 1980 and the year 2000. If, on the other hand, maternal mortality levels similar to those currently prevailing in Costa Rica or Cuba were achieved and maintained, the number of deaths would drop to 60,000.

Leading Causes of Maternal Mortality. The causes of maternal mortality should be viewed in two ways: in terms of clinical etiology and in terms of the social determinants that place certain groups of women in high-risk situations. According to the clinical point of view, most deaths in the Region are grouped under the heading "direct obstetrical causes." These deaths result from complications during pregnancy (including pregnancy, delivery, and the puerperium) or from interventions or omissions related to this state, such as induced abortion or cesarean section. Although these complications require different levels of preventive care and treatment, it should be stressed that deaths from such causes are essentially avoidable. "Indirect obstetrical causes" refer to medical factors that do not arise from the state of pregnancy per se, but that are aggravated by its physiological effects.

Table 52 presents official statistics on the percentage distribution of maternal deaths according to different groups of causes. Among defined causes, abortion is the first or second leading cause of maternal mortality in most countries of the Region, followed, in descending order of importance, by toxemia, hemorrhage, and complications of the puerperium.

Abortions performed with nonsterilized instruments and without rigorous hygiene by untrained individuals often lead to complications such as hemorrhage and sepsis, which, if untreated or not treated in a timely fashion, result in death. This cause is responsible for 54% of all maternal deaths in Trinidad and Tobago, more than 35% in Argentina and Chile, and 25% in Uruguay and Venezuela.

Toxemia is responsible for 32% of maternal deaths in Brazil and for more than 20% of such deaths in many other countries. Both the relative weight of toxemia as a cause of maternal death and the corresponding death rate have decreased in several countries. In Cuba, for example, maternal mortality from toxemia dropped from 35 to 3.6 per 100,000 live births between 1960 and 1984.

Mortality from **hemorrhage** has been reduced in some countries as a result of hospital coverage and availability of blood. In Chile, Cuba, Trinidad and Tobago, and Uruguay, maternal deaths from causes that trigger hemorrhage have been reduced below 8%.

Complications of the puerperium, including pulmonary embolism, puerperal infection, and venous complications, are usually preventable through timely diagnosis and medical and surgical treatment, yet they have declined less than other direct and indirect obstetrical causes. In the United States, complications of the puerperium represent 27.2% of all maternal deaths from direct causes, while in Cuba and Chile the figures are 15.1% and 17.6%, respectively.

In the last three decades there has been a marked trend worldwide to increase the number of **cesarean sections.** According to data from the Latin American Center for Perinatology and Human Development (CLAP),[25] cesarean sections currently account for one out of every three or four births in countries of Latin America, while in 1960, they accounted for one of every twenty to fifty

[24]Ann Starrs, "La prevención de la tragedia de las muertes maternas" (report on the World Bank/WHO/UNFPA International Conference on Motherhood without Risk, Nairobi, Kenya), 1987.

[25]Latin American Center for Perinatology and Human Development, "El nacimiento por cesárea hoy," *Salud Perinatal* 3(9), 1989.

TABLE 52

Percentage distribution of maternal deaths by type of cause in selected countries, most recent years.

Country (years)	Direct causes (ICD–9 code)						Indirect causes (647–648)
	Abortion (630–639)	Toxemia (642.4–642.9, 643)	Hemorrhage of pregnancy and delivery (640, 641, 666)	Complications of the puerperium (670–676)	All other direct causes	All direct obstetric causes	
Argentina (1980–1985)	37.0	15.3	14.9	13.0	16.9	97.1	2.9
Brazil[a] (1980–1984)	13.3	30.8	19.1	16.1	18.1	97.4	2.6
Canada (1980–1986)	8.6	12.0	19.0	30.2	19.8	89.6	10.4
Costa Rica (1980–1986)	17.6	18.2	15.7	22.6	24.5	98.6	1.4
Cuba (1980–1986)	19.3	7.8	4.4	15.1	28.9	75.5	24.5
Chile (1980–1986)	35.4	14.7	7.6	17.8	17.0	92.5	7.5
Dominican Republic (1980–1985)	18.5	25.6	20.1	4.1	24.4	92.7	7.3
Ecuador (1980–1982–1984–1986)	8.8	25.3	21.4	9.8	33.3	98.6	1.4
Guatemala (1980–1981–1984)	11.2	4.4	2.4	8.9	72.1	99.0	1.0
Honduras (1980–1983)	5.7	0.7	2.2	1.2	72.3	92.1	17.9
Mexico (1981–1983)	8.4	17.8	19.9	9.1	38.7	93.9	6.1
Panama (1980–1986)	16.4	16.0	16.4	6.0	43.4	98.0	2.0
Paraguay[a] (1980–1985)	14.4	16.3	25.5	17.3	22.4	95.9	4.1
Peru (1980–1983)	10.2	8.3	30.8	14.5	35.6	99.4	0.6
Puerto Rico (1980–1986)	18.5	29.7	25.9	18.5	7.4	100.0	0.0
Suriname (1980–1985)	18.0	20.0	36.0	10.0	16.0	100.0	0.0
Trinidad and Tobago (1980–1983)	54.3	15.7	2.8	11.4	31.8	100.0	0.0
United States (1980–1986)	17.8	16.5	12.8	27.2	21.4	95.7	4.3
Uruguay (1980–1986)	24.7	15.3	4.4	8.8	45.5	98.7	1.3
Venezuela (1980–1983)	24.6	19.0	15.6	17.5	16.5	93.2	6.8

[a]Information area.
Source: Official mortality reports submitted to PAHO by the countries.

births. Since 1970, in particular, cesarean sections have frequently been used as an easy way to solve small problems.

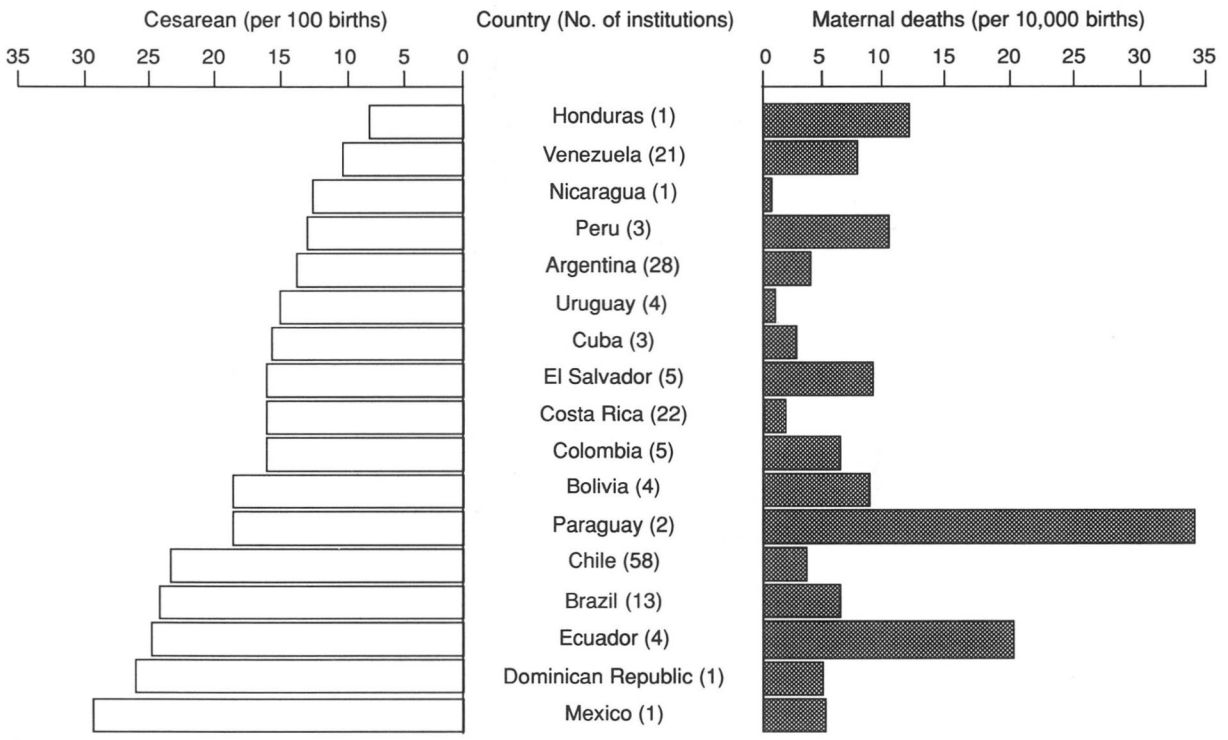
Although cesarean sections historically have been justified as a way to reduce perinatal and maternal mortality, today there is no evidence that confirms that effect. Japan and the Netherlands, for example, report low frequencies of cesarean sections and low perinatal and maternal death rates. Findings from an epidemiological study of cesarean sections, developed by CLAP/PAHO since 1985 in 17 countries of the Region and in Spain, indicated that the variations in the frequency of cesarean sections explain only 5% of the variations in perinatal mortality, and that there is no statistical correlation between cesarean sections and a reduction in maternal mortality (Figure 16). Moreover, in comparison to vaginal delivery, cesarean sections have been associated with higher mortality (up to 12 times) and morbidity (from 7 to 20 times), hospital stays that are twice as long, a greater probability of asphyxiation during birth, neonatal respiratory disorders, and iatrogenic prematurity.

It should be stressed that complications of pregnancy, delivery, and the puerperium seriously affect women's health, not only in terms of mortality but also, and in even greater proportions, of disabling morbidity. In developing countries, for every woman who dies during delivery, 10 to 15 women are left disabled (see footnote 24). The most frequent forms of morbidity are incontinence, uterine prolapse, sterility, and, to a lesser degree, fistulae.

In terms of the point of view that deals with the social etiology of maternal morbidity and mortality, the Call for Action, accepted by consensus at the International Conference on Maternity without Risk (Nairobi, 1987), recognized that high maternal death rates reflect underlying disadvantages for and discrimination against

FIGURE 16

Frequency of cesarean deliveries and of institutional deaths from maternal causes in selected countries of Latin America, 1981 - 1985.



Source: CLAP (1988).

women, particularly in regard to legal status and access to education, adequate nutrition, dignified employment, financial resources, and satisfactory health care, including family planning services.

Some groups of women are particularly vulnerable to the life-threatening or disabling consequences of complications associated with pregnancy, delivery, or the puerperium, namely, adolescents under 15 years old, women who have had five or more pregnancies, women over 34, and women who become pregnant less than two years after their last pregnancy—in other words, women whose pregnancies are "too early, too late, too numerous, or too close." Other factors that increase the propensity for complications in pregnancy are short stature, which is associated with a greater probability of obstructed delivery, and malnutrition and anemia, which reduce women's ability to have healthy children and to survive delivery. Considering biological and social variables and their connection to maternal mortality or morbidity, it has been concluded that women from lower social classes, with less education, at either extreme of their reproductive life, with a high pregnancy rate, and with a history of previous pathologies are high-risk groups.

Given that most maternal deaths stem from obstetrical complications that are preventable through timely medical interventions, an important determinant of the magnitude of this problem is the population's access to essential health services that can prevent and treat the risks associated with maternity. Experiences in countries of the Region and elsewhere have shown that reductions in maternal mortality do not parallel economic development. Maternal mortality can be reduced through well-provided and well-organized maternal care systems, even under those conditions where it is impossible to improve the overall living conditions of women of childbearing age. The association between the level of maternal mortality and institutional coverage of childbirth is clear: countries with the widest institutional coverage of childbirth are also those that tend to have lower maternal mortality. Although it is assumed that a connection exists between the level of institutional coverage of childbirth and coverage of prenatal care, this is not always the case.

It also should be noted that, notwithstanding the priority that governments and international organizations have given to strengthening maternal and child health programs, the percentage of women who have no access to

professional health care services during pregnancy and delivery remains very high in many countries of the Region. For example, in Bolivia, Ecuador, El Salvador, and Peru, approximately 40% or more of pregnancies and deliveries, and in Guatemala 71% of deliveries, in the five years prior to the 1985–1989 period did not receive professional care (Institute for Resource Development/ Westinghouse/Macro Systems, Demographic and Health Surveys).

Information on **abortion** is plagued by even greater underregistration than that of other causes of maternal mortality because abortion is illegal throughout most of the Region. Induced abortion is legal only in Cuba, the United States, and Canada; the remaining countries consider it a crime punishable by law.

Regarding the ratio of deaths from abortion to live births, the highest rates of mortality from abortion (22 to 34 per 100,000) for the group of countries having submitted this information are in Argentina, Colombia, Paraguay, and Trinidad and Tobago, while the lowest, based on reliable registrations, are in Costa Rica, Cuba, and the United States (1.6 to 6.6 per 100,000).

In terms of the incidence of abortion in the female population of childbearing age, it has been estimated that the rate of abortions worldwide by the end of this decade ranges between 37 and 55 abortions per year per every 1,000 women between 15 and 44 years old. It has been estimated that the rate around 1975 in Latin American countries, where abortion is illegal, hovered around 65 abortions per every 1,000 women of childbearing age, and that the figure was higher in urban areas.[26] In the three countries of the Americas where abortion has been legalized—the United States, Canada, and Cuba—abortion rates have been estimated at 25, 12, and 47 for every 1,000 women of childbearing age, respectively.

Variations observed among those countries with more reliable registrations suggest that mortality rates from abortion are associated with the legality of this intervention in the respective countries, and also with the availability of modern contraceptives and with the overall level of health services. Given the fact that a significant number of unwanted pregnancies end in illegal and complicated abortions, birth control programs clearly have a preventive role to play, provided that their quality and coverage are sufficient and that they function within comprehensive care services for all women, not only mothers.

The problem of legal or illegal abortions and its solutions should be analyzed within a broad context that considers the social and economic conditions of women and their real possibilities of choice. Rather than being an option itself, abortion reflects a lack of options. Excluding extreme cases of lack of choice, such as forced pregnancies from abuse and violence (incest, rape), abortion is a response to poverty, unemployment, social ostracism, inaccessibility (be it geographic, economic, or social) of family planning services, inadequate contraceptive technology, a lack of support from the partner, and a lack of social means that facilitate child care.

Anemia and Malnutrition

Beyond the consequences it has for both men and women, poor nutrition harms women more because of their specific physiological needs. From the onset of menstruation until menopause, women regularly lose iron. WHO studies show that women of childbearing age require a daily iron intake almost triple that of adult men. This requirement may increase if women use an intrauterine device, which tends to intensify menstrual blood flow; it also increases significantly during pregnancy and lactation, thus worsening already existing dietary deficiencies. For poor women, iron requirements usually exceed the quantities contained in their daily diet.

Malnutrition is "an enormous health liability in the Americas, especially among disadvantaged groups, and one that shows a considerable predilection for women. . ."; it is "perhaps the most important health problem affecting women in developing countries."[27] Studies conducted in six Latin American cities revealed that almost one-fourth of nonpregnant women and one-half of pregnant women from low socioeconomic strata suffered from hypoferric anemia. These cases of anemia, although rarely fatal, when coupled with other types of malnutrition, render women prone to chronic fatigue, decrease their productivity, lower their quality of life, increase their vulnerability to infections, and greatly increase morbidity and mortality during delivery.

Biological factors are often compounded by cultural factors within the family, where, as has already been pointed out, women have a lower priority when it comes to distribution of food.

Gynecological Cancer

Cancer of the Cervix. This type of cancer is a public health problem in most Latin American and Caribbean countries, in developing countries of other continents, and in marginal populations of several developed countries. Based on available information on mortality and on the incidence records kept by some countries, the magnitude of this problem in the Region of the Americas is

[26]Latin American Demography Center (CELADE), "La fecundidad: niveles, tendencias y determinantes próximos" (basic document prepared for this publication, 1989).

[27]Pan American Health Organization, *Women in Health and Development,* Scientific Publication No. 448 (Washington, D.C., 1983), pp. 7, 8.

judged to be considerable. In countries with no reliable information on mortality and incidence, such as Guatemala, Honduras, and the Dominican Republic, the magnitude of the problem has been estimated on the basis of hospital discharge data and of the percentage distribution of cases seen in cancer treatment centers. In Guatemala, for example, the Tumor Registry of the National Cancer Institute indicated that in 1986, 56% of all cancers diagnosed in women turned out to be invasive cancer of the cervix. Regarding incidence, the most reliable sources are cancer registries, particularly those that report to the WHO International Agency for Research on Cancer (IARC) in Lyons, France. Based on selected registries, Table 53 illustrates incidence trends (1967–1983) and excess risk of women in Latin America and the English-speaking Caribbean in relation to Canada. The risk factors that have been accepted so far are female and male sexual promiscuity, initiation of sexual relations at an early age, and number of deliveries to term.

Since the exact web of causation for this type of cancer is still unknown, secondary prevention programs need to be organized on the basis of early detection of true pre-invasive forms, followed by diagnosis and timely and effective treatment.

Breast Cancer. This type of cancer is one of the most common causes of death among women in the Western Hemisphere. Mortality and morbidity statistics indicate an increase in its frequency, both in developed and developing countries. According to WHO, in the 1960s and 1970s, age-adjusted incidence rates in the incidence registries of various continents increased by a factor of 10. An increased risk also has been documented for women migrating from low-risk to high-risk areas. In the United States, the American Cancer Society has indicated that 1 of every 11 women will probably develop breast cancer during her lifetime. In the Latin American and the Caribbean countries as well, a progressive rise in the number of deaths from breast cancer has been observed. However, mortality from this cause is less than in developed countries, with the exception of Uruguay, which has rates comparable to those of Canada and the United States, followed by Argentina and Cuba, in order of importance.

Breast cancer is relatively rare before age 35, but increases rapidly thereafter, with high rates of incidence and mortality well into old age. Its risk appears to be positively related to years of ovulation, first pregnancy after age 30, and heredity, especially during premenopause. Factors related to fat consumption also have been

TABLE 53

Changes in the incidence rates of cancer of the cervix per 100,000 women, adjusted to the standard world population by age distribution, in selected countries and localities, 1967–1983 period.

Registries	Rate	(Years)	Rate	(Years)	Rate	(Years)	Risk ratio[a]
Brazil, Recife[b]	58.1	(1968–1971)	83.1	(1972–1976)	83.2	(1977–1981)	7.8
Bolivia, La Paz[c]	—		57.8	(1976)	—		5.5
Colombia, Cali[c]	62.8	(1967–1971)	52.9	(1972–1976)	48.2	(1977–1981)	5.0
Brazil, Fortaleza[c]	—		37.5	(1978–1980)	46.5	(1981–1983)	5.0
Panama[d]	—		39.2	(1976)	—		3.7
Brazil, São Paulo[c]	27.5	(1968)	39.5	(1973)	35.1	(1978)	3.6
Paraguay, Asunción[d]	—		36.5	(1976)	—		3.5
Peru, Lima[d]	—		33.6	(1976)	—		3.2
Costa Rica[d]	—		32.9	(1976)	36.9	(1982)	3.1
Jamaica, Kingston[c]	40.4	(1968–1972)	29.8	(1973–1977)	—		2.7
Argentina, La Plata[c]	—		19.7		—		1.9
Puerto Rico[d]	25.6	(1968–1972)	18.4	(1973–1977)	15.6	(1978–1982)	1.8
Cuba[c]	19.5	(1968–1972)	17.1	(1973–1977)	—		1.6
Canada, British Columbia[c]	18.4[e]	(1969–1972)	12.2[e]	(1973–1977)	9.0	(1978–1982)	1.0

[a]The risk ratio was computed by using the British Columbia, Canada, rate.
[b]Registries based exclusively on pathology.
[c]Good quality registries included in *Cancer Incidence in Five Continents.*
[d]Average quality registries.
[e]Includes cancer *in situ,* 1969–1972 and 1973–1977 periods.
Sources: Muñoz, N. Epidemiological aspects of cervical cancer. Meeting on Prevention and Control of Cancer of the Cervix Uteri, CAN/CDC/85 14 Working Paper 4.1. Sepúlveda, C. Situación de los programas de detección y control de cáncer de cuello uterino en América Latina y el Caribe. PAHO, 1989.

singled out as being responsible for the geographic differences observed worldwide.

Programs for the prevention and control of breast cancer are difficult to implement, given the complexity of its causality and the controversy and expense of early detection methods. Mammography, in countries where it is available, should be used according to individual risk criteria such as age, heredity, fertility history, and obesity. PAHO recommends that Member Governments use registries to better document trend changes in this type of cancer, and that they inform and educate groups of women on the importance of breast self-examination and of annual clinical examinations by a trained physician, beginning at age 35.

Cerebrovascular Diseases

A risk factor of cerebrovascular disorders that has been found to be particularly associated with women is hypertension, which is basically linked to two variables: postmenopausal hormonal changes and weight gain after age 40, and use of oral contraceptives during reproductive years.

Various epidemiological studies have documented the association between obesity, on the one hand, and diabetes, hypertension, and hypercholesterolemia, on the other, conditions which, in turn, constitute three of the leading risk factors for coronary disease. Given this multifactoral interrelationship, women are one of the most vulnerable population groups because they suffer from obesity, diabetes, and hypertension more frequently than men.

Another important association that has been pointed out by studies conducted in different countries, is between use of oral contraceptives and cardiovascular disorders, especially hypertension. This risk deserves special consideration, given that the "pill" is the second most popular method of contraception (after sterilization) in the Region of the Americas and that in many countries oral contraceptives are accessible to everyone without restrictions from individual risk evaluations.

Mental Health

Affective Disorders. Epidemiological, family, and clinical studies on the incidence by sex of one of the most widely seen affective disorders, "severe depression," have consistently confirmed that its rates are approximately twice as high among women as among men. These results also have shown that these differences are real and not a statistical artifice resulting from the differences in the statements and request for care between the sexes.

Although no conclusive psychosocial explanations have emerged for the predominance of severe depression in women, proposed hypotheses point to women's disadvantageous conditions as a contributing factor. Given this, the discrimination against women, reinforced by socialization patterns and social expectations that counteract women's independence and self-assertion, could lead to feelings of impotence, dependency, low self-esteem, low aspirations, and, ultimately, depression.

Additional important associations have been found between depression, demographic cohorts, and some stages in a woman's life cycle. Contrary to common belief, the high incidence of depression during mid-life has less to do with hormonal changes during menopause than it has with the range of cultural options available to women during that stage.

In Latin America and the Caribbean, mental health information broken down by sex, although limited, points toward a significantly higher incidence of depression among women than among men. The highest incidence of this disorder has been identified mainly, although not exclusively, among mid-life women.

Substance Use and Abuse: Alcohol and Tobacco. The use of alcohol, tobacco, and drugs is closely linked with attempts to alleviate emotional problems. Although information limitations have made it difficult to evaluate the gender determinants at work in this type of consumption, some general trends can be outlined.

Traditionally, **alcohol** abuse and alcoholism have been considered male problems. Statistics from throughout the Region of the Americas show this condition's clear predominance among men, with the difference by sex being greater in developing countries. It is also clear, however, that alcohol use and abuse has increased among women, particularly in North America, and that, as recent studies show, alcohol more seriously affects—socially and biologically—women and their offspring. It has been confirmed, for example, that at a constant bodyweight, identical quantities of alcohol are more intoxicating in women than in men, and that the chronic effects of alcoholism are more severe, disabling, and lethal for the female sex.[28] Furthermore, in pregnant women, alcohol consumption has been associated with adverse effects on the fetus, such as fetal alcohol syndrome, which severely affects a child's physical, emotional, and mental development.

Although **tobacco** consumption has traditionally been greater among men than among women, in the last 20 years smoking has stabilized or decreased among men in developed countries, while it has increased in developing countries, particularly among women. In Canada, for example, between 1966 and 1981, the absolute number of

[28]U.S. Department of Health and Human Services, *Women's Health. Report of the Public Health Service Task Force on Women's Health Issues, Vol. II* (Washington, D.C., 1985).

smokers decreased 9% among men and increased 29% among women.[29] Variations in the prevalence of smoking in different Latin American countries are significant. The general trend, however, has been toward an increase in tobacco consumption among women, particularly young women.

In the United States, for example, the trend toward increased smoking among women has placed lung cancer ahead of breast cancer as the leading cause of death from cancer among women.[30] In Latin America as well, statistics of female mortality from lung cancer have revealed drastic increases over a period of two or three decades.

Although smoking harms both sexes, it causes additional damage in women. Not only does the risk of cardiovascular accidents increase by a factor of ten among women who smoke and use oral contraceptives, but, in addition, smoking during pregnancy is associated with low birthweight, perinatal mortality, spontaneous abortion, sudden infant death syndrome, and premature births (see footnote 28).

Family Violence

Family violence, to which women are particularly vulnerable, is a public health problem that not only results in physical trauma but also seriously affects the victim's mental health.

A factor that significantly contributes to women's victimization may be that they have been socialized into being more helpless, passive, resigned, and submissive than men. In order to explain this phenomenon's origin and magnitude, it is necessary to examine the cultural and psychosocial factors that predispose the assailant to resort to violence and also the way society tolerates and even encourages this behavior. Most of this violence is tolerated in silence, validated in laws and customs, and justified as "cultural tradition." Its most endemic form is wife-battering, which occurs in all racial, cultural, and socioeconomic groups. The real prevalence of women's abuse is not known; abuse is still rarely reported because women are ashamed of it, accept it, fear reprisals from their companion or their family, or find no support in the judicial system. Based on a mass survey conducted in the United States in 1980, it was estimated that in this country 1,800,000 women are beaten by their husbands every year (see footnote 28). It has also been observed that in most cases police tend to ignore women's accusations of abuse by their husbands or companions.

[29]S. C. Robles, "Mujer y tabaco" (San José: Ministry of Public Health, and Department of Medicine, University of Costa Rica, 1989).

[30]American Cancer Society, 1985.

Occupational Health and the Double Workday

Although both men and women face health problems associated with the work environment, women are more susceptible because of their biology and because they must work two shifts: on the job and at home.

The exposure to certain types of occupational risks varies depending on the type of work that men and women predominantly do in different countries.[31] In general, however, the occupational risks that most impinge on women are those related to their reproductive function, the most obvious one being exposure to chemical substances or physical pollutants (vibration, noise, and various types of radiation), which can induce abortion or harm the health of the fetus or maternal milk. Another type of risk pertains to strenuous physical work, which aggravates women's malnutrition during pregnancy and affects the weight of newborns. A third category deals with a lack of legal instruments in certain countries and in certain types of work, which prevents women from getting the necessary rest before and after delivery. A fourth risk category that is common to all women in the work force, but that affects working-class women with small children much more seriously, is the double workday. Poor rural and urban women must care for their small children or aging parents, procure water and fuel, cook, and perform all other household duties, and also must engage in productive activities to support their families every day. Studies conducted in several countries indicate that the average workday for working women is three to four hours longer than for men.

Risks Associated with Lack of Drinking Water

Although the lack of drinking water involves risks for both sexes, available information suggests that women are affected in specific ways and suffer more serious health consequences than men. Given the sexual division of labor, domestic duties such as carrying water, washing clothes in rivers or wells, cleaning utensils, and preparing food are normally performed by women. As a result, women come in contact with polluted water more frequently, and therefore are at a higher risk of infection than men. In addition, carrying heavy loads such as water containers aggravates uterine prolapse and acute malnutrition. Under normal circumstances, daily energy consumption for carrying water is 12%, and in dry and mountainous regions, this figure may rise to 25%, with

[31]For a detailed discussion of the risks associated with "female" occupations, see F. L. Paltiel, "Occupational Health of Midlife and Older Women in Latin America and the Caribbean," in *Midlife and Older Women in Latin America and the Caribbean,* pp. 150–168 (Washington, D.C.: PAHO, 1990).

particularly serious consequences during pregnancy and lactation.

The risks of infection that specifically affect women include the following: malaria, which carries greater probability of spontaneous abortion and death of the fetus; ancylostomiasis, which contributes to anemia in women; and infectious hepatitis, which is normally fatal during pregnancy.

Menopause and Aging

At the end of their reproductive years, women experience a substantial change in the concentration of sexual hormones in circulation. A matter of utmost importance regarding health care during this period is whether or not to use a hormone substitution treatment. Although this treatment eliminates the most troublesome symptoms of menopause and provides protection against osteoporosis, it also appears to be linked to an increase in the incidence of some forms of cancer. Thus, there is a clear need to study this treatment, whose effects (or those of its omission) are significant and affect the health of all women.

As was pointed out in the section on mental health, women's attitudes concerning menopause—and the emotional changes that go along with this transition—are influenced by the role that society promotes and reinforces in women throughout their lives. In addition to the limitations that all women experience in terms of their participation in nondomestic arenas, mid-life and older women also face greater obstacles than men regarding forming part of a couple. The many more widows than widowers observed in North America, Latin America, and the Caribbean are not only a result of men dying at an earlier age than women, but also are due to the fact that widowers tend to remarry more frequently than widows, and generally do so to younger women. In the United States, data from 1979 indicate that the rate of marriage for the population 65 years old and older was almost six times higher for men than for women (see footnote 28).

As was highlighted in the section on demographic characteristics in Part I, the Latin American and the Caribbean populations are aging. Given women's greater longevity, they are overrepresented in the age group 65 years old and over; this overrepresentation increases with age, which has led to the use of the term "feminization of old age."

It should be noted that, although older women tend to die of the same diseases as men, they more frequently fall prey to chronic conditions that severely limit their quality of life, such as diabetes, hypertension, arthritis, and osteoporosis. In addition, and to a degree because of their greater longevity, older women also are more often affected by mental disorders. Regarding almost all health aspects and in terms of the ability to care for themselves, elderly women seem to be less healthy and in worse physical condition than men.

The interaction between biological and sociocultural factors linked to the condition of women makes proper health care more difficult for women to achieve than for men. The problem of women's greater need for health care is compounded by the facts that they tend to have less access to the health services and fewer financial resources. These disadvantages arise from lower employment rates for women, particularly in the formal sector of the economy; intermittent participation in the labor market because of maternity; and lower remuneration for women than for men. All these circumstances conspire to place women at a disadvantage as compared to men in terms of anything that has to do with health services, social security, and pension plans. Most women do not have direct access to social security, and when they are entitled to receive a widow's pension, the benefits are generally lower than a retirement pension. As shown by studies carried out in the United States, Latin America, and the Caribbean, the income of older women is substantially lower than that of men of the same age, and women represent the majority among the elderly population living in a state of poverty.

As a result, as was pointed out during the United Nations Decade for Women, older women are among the most vulnerable segments in society, and their lives are characterized by solitude, poverty, disease, and lack of benefits.

Fertility Control and Reproductive Rights

Experience worldwide has shown that uncontrolled fertility affects the health not only of women but of their children as well. Frequent and closely spaced pregnancies, and pregnancies at the extreme ages of the reproductive cycle, pose health risks for both mother and child and are a cause of high maternal and infant mortality. Uncontrolled fertility's ill effects worsen and become more obvious in lower socioeconomic strata, where health risks are compounded by a lack of adequate services and by nutritional deficiencies of both mothers and children.

One of the most significant phenomena in the Region over the last 30 years has been the change in the population's reproductive behavior, reflected by a decrease in fertility.

The subregional trends of this decline were already described in the section on population in Part I. Table 11 of that section, which may be used as a frame of

reference, shows the evolution of total fertility rates[32] and the 1950–2000 projections prepared by CELADE for the three major subregions and the respective countries. Table 54 of this section presents the percentage decline of total fertility over the last 30 years, while Figure 17 illustrates differences in recent levels of fertility in the countries of the Region. The figures in the two above-mentioned tables indicate that in Latin America fertility has decreased from the average level of 6 children per woman recorded for 1950–1955 to 3.6 for 1985–1990. The respective averages for the Caribbean are 5.2 and 2.9, and for North America, 3.5 and 1.8, respectively.

The fertility rates by country shown in the above-mentioned tables are averages, and, as such, obscure significant variations within these countries that are associated with an uneven incorporation of individuals and social groups into society. Table 55 illustrates, for nine of the ten countries that participated in the Demographic and Health Survey Program (IRD/ Westinghouse/Macro Systems) during the 1980s, the differences in total fertility rates by rural or urban residence and by level of education of women.

Socioeconomic Differences in Fertility Levels and Trends. Fertility rates by place of residence indicate that, in general, urban women have fewer children than their rural counterparts. Trinidad and Tobago is an exception, with virtually no urban-rural differences in fertility having been observed recently. Regarding women's level of education, cumulative empirical evidence invariably has shown an inverse relationship between fertility and education, indicating equal or greater differences than those observed for place of residence. Thus, while women in rural areas have between 0.1 and 3 more children than

[32]Average theoretical number of children that a cohort of women would have at the end of their reproductive life, estimated on the basis of specific rates by age during a given period.

TABLE 54

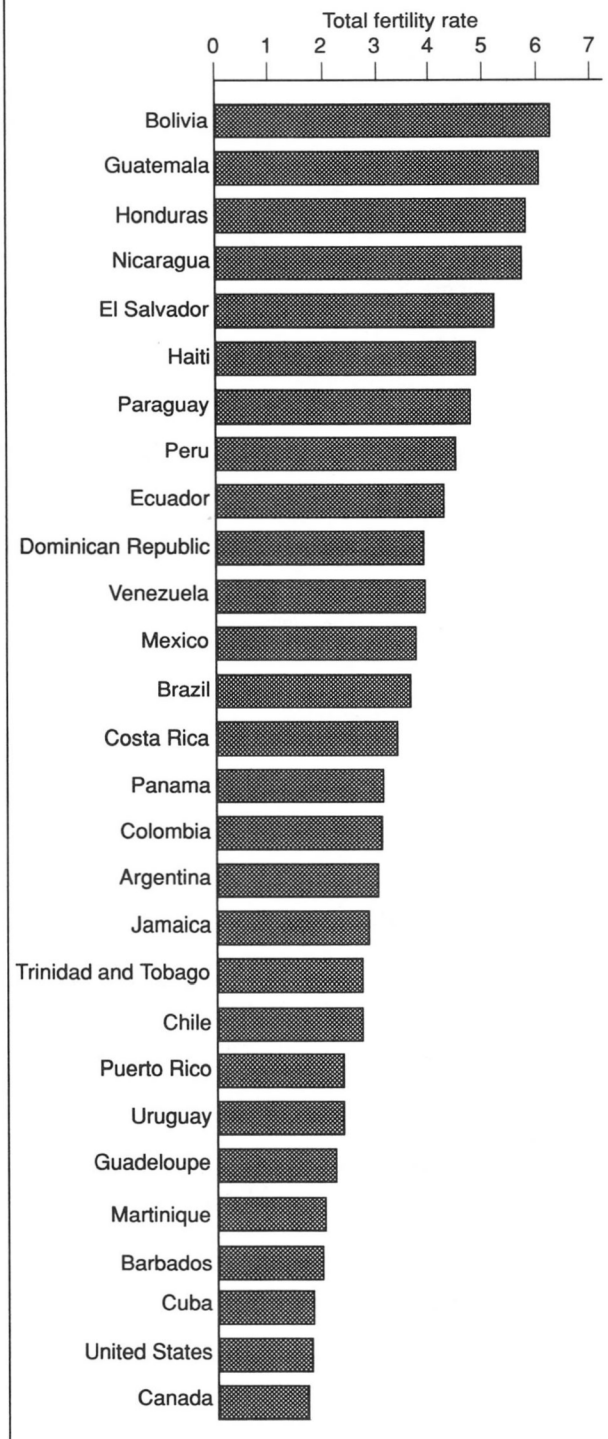
Percentage decrease in total fertility rates in the Americas between 1950–1955 and 1985–1990, according to recent fertility level.

Recent fertility level	Country[a]	Total fertility rate		
		1950–1955	1985–1990	% decrease
Low (3 or less)	Canada	3.7	1.7	54
	United States of America	3.5	1.8	48
	Cuba	4.1	1.8	56
	Barbados	4.7	2.0	57
	Martinique	5.7	2.1	63
	Guadeloupe	5.6	2.2	60
	Uruguay	2.7	2.4	11
	Puerto Rico	5.0	2.4	52
	Chile	5.1	2.7	47
	Trinidad and Tobago	5.3	2.7	49
	Jamaica	4.2	2.9	30
	Argentina	3.2	3.0	6
Medium low (3.1–4.4)	Colombia	6.8	3.1	54
	Panama	5.7	3.1	46
	Costa Rica	6.7	3.3	51
	Brazil	6.2	3.5	43
	Mexico	6.8	3.6	47
	Venezuela	6.5	3.8	41
	Dominican Republic	7.4	3.8	49
	Ecuador	6.9	4.3	38
Medium high (4.5–5.4)	Peru	6.9	4.5	35
	Paraguay	6.8	4.6	32
	Haiti	6.2	4.7	24
	El Salvador	6.5	4.9	25
High (5.5 +)	Nicaragua	7.3	5.5	25
	Honduras	7.1	5.6	21
	Guatemala	7.1	5.8	18
	Bolivia	6.8	6.1	10

[a]In ascending order by recent total fertility rate (1985–1989).
Source: CELADE, 1990, and United Nations, 1989.

FIGURE 17

Total fertility rates, by country, 1985 - 1990.



Sources: CELADE (1990) and United Nations (1989).

women in urban areas, women with no formal education have between 1.3 and 4.7 more children than those with a higher education.

The previous findings regarding differences in fertility based on women's place of residence and educational level confirm the paradox that a greater need for services usually goes hand in hand with a lower availability of those services. Given the uneven distribution of resources in the interior of the countries, the greatest concentration of material resources and health personnel is most frequently in the metropolitan areas and in the most affluent sectors of society, which, in terms of maternal morbidity and mortality, are the ones at lowest risk. An analysis based on results of the World Fertility Survey found that in rural areas the proportion of women with access to prenatal care is lower, and that the percentage of women who receive no medical care during delivery is higher. These same differences are observed when women are classified according to their level of education and according to the occupational level of the head of household (see footnote 26).

Reproductive Dynamics and Changes in the Prevalence of Maternal Morbidity and Mortality Risks

As has been said already, complications during pregnancy, delivery, and the puerperium are closely associated with the age of the mother and with the frequency and spacing of pregnancies. As a result, and disregarding the impact of other socioeconomic and health care factors, the prevalence of such complications will be affected by changes in fertility that involve modifications in the age at which pregnancy occurs and in the number and spacing of pregnancies.

Age at Which Pregnancy Occurs. The relationship between a woman's age and the risk of maternal mortality is represented by a 'J'-shaped curve. Risk is high during adolescence, minimal in the early twenties, and highest after age 35. This association between maternal mortality and age has been observed for all leading causes of these deaths—including sepsis, toxemia, and hemorrhage—and in all countries, regardless of the prevailing maternal mortality level.

The significant decline in fertility registered in the Region during recent years has had important consequences for the health of women and children, bringing with it not only a reduction in the average number of children per woman, but also a shift of fertility from extreme ages to mid-range ages in the reproductive cycle. This phenomenon is illustrated in Table 12 of the section on population in Part I, which presents the total number of births and the proportion of births according to three age groups of women for the Latin American countries:

TABLE 55

Total fertility rate by place of residence and educational level in selected countries, most recent period.

Geographic and socioeconomic variables	Brazil	Colombia		Ecuador	El Salvador	Guatemala	Mexico	Peru	Dominican Republic		Trinidad and Tobago	
	1983–1986	1981–1983	1984–1986	1987	1985	1983–1987	1984–1986	1986	1980–1982	1983–1985	1981–1983	1984–1987
Total	3.5	3.7	3.2	4.3	4.4	5.6	3.8	4.1	4.3	3.7	3.3	3.1
Place of residence												
Urban	3.0	3.1	2.6	3.5	3.3[a]; 3.8[b]	4.1	3.0[a]	3.1	3.5	3.1	3.0	3.0
Rural	5.0	5.1	4.8	5.5	5.9	6.5	5.9	6.3	5.9	4.8	3.6	3.1
(Difference)[c]	(2.0)	(2.0)	(2.2)	(2.0)	(2.6)	(2.4)	(2.9)	(3.2)	(2.4)	(1.7)	(0.6)	(0.1)
Educational level												
No education	6.5	5.6	5.1	6.4	6.0	7.0	6.1	6.6	6.5	5.3	...	...
Primary	...	4.5	3.9	5.2	...	5.6	5.7	5.0	5.1	4.3	4.2[d]	3.6[d]
1–3	...	...	...	...	−5.2	...	...	...	...	...	...	...
4–6	5.1[d]	...	...	...	3.9	...	...	...	...	...	3.9[e]	3.5[e]
7–9	3.1[e]	...	...	...	3.5	...	...	...	...	...	2.9[f]	3.2[f]
Secondary	2.5[g]	2.7	2.5	3.1	2.5[h]	3.9	3.7	3.1	2.8	2.9	2.3[i]	2.3[i]
Advanced	...	1.6	1.4	2.3	...	2.7	2.5	1.9	2.2	2.1	...	...
(Difference)[c]	(4.0)	(4.0)	(3.7)	(4.1)	(3.5)	(4.3)	(4.1)	(4.7)	(4.3)	(3.2)	(1.9)	(1.3)

[a]Refers to the metropolitan area.
[b]Refers to the rest of the urban areas.
[c]Corresponds to the difference between the highest and lowest rates for the variable.
[d]Corresponds to incomplete primary education.
[e]Corresponds to complete primary education.
[f]Corresponds to secondary education I.
[g]Corresponds to complete primary education and more.
[h]Refers to intermediate and advanced levels.
[i]Corresponds to secondary education II.
Source: Demographic and health surveys conducted by the respective countries with IRD/Westinghouse/Macro Systems, 1985–1988.

adolescents, between 15 and 19 years old; women between 20 and 34 years old, who represent the mid-range ages of fertility; and women over age 34.

The figures indicate that, despite the growing concentration of fertility (more than 70% of births) in the mid-range ages of 20 and 34, a relatively high proportion of births (between 25% and 30%) still occurs among women who are at high risk: those under the age of 20 or older than 34. A comparison between the contribution to total fertility of women aged 35 and older and that of women under the age of 20 indicates that, while during 1950–1955 the contribution of older women was mostly greater than that of younger women, in 1985–1990 this ratio has been inverted. Thus, over the last 30 years, the proportional contribution of adolescents to total fertility has increased in 13 of the 20 countries studied, while the contribution of older women has decreased in *all* countries.

In general, it can thus be said that the concentration of fertility in mid-range ages, with its potential risk reduction, has been brought on by the behavior of older women, who conclude their reproductive cycle earlier, rather than by a postponement of maternity by younger women. The following paragraphs examine the behavior of each of these two high-risk groups.

Fertility in Adolescent Women. Fertility in women under the age of 20 is of special interest, not only because of its negative effect on the health of mothers and children, but also because of its social consequences for women. An adolescent pregnancy interrupts and, in many cases, ends a woman's educational prospects, further reducing her already limited opportunities in the job market.

According to CELADE population projections for Latin America in 1989 (see footnote 26), variations in the fertility rates of this age group in 1985–1990, range from 61 per 1,000 in Uruguay to 133 per 1,000 in Guatemala. Barring a few exceptions, adolescent fertility rates in high-fertility countries tend to be higher than those in low-fertility countries. Considerable variation is observed in countries with intermediate fertility levels. Regarding the evolution of rates between 1950–1955 and 1985–1990, information indicates that adolescent fertility rates in most countries have decreased between the two five-year periods, with declines ranging from 10% in El Salvador to 52% in the Dominican Republic. There are exceptions that should be pointed out, however, such as Argentina, Cuba, and Uruguay, where increases have been observed in the specific fertility rate for the 15–19-year-old age group.

With regard to the number of annual births corre-

sponding to this age group, it should be noted that, notwithstanding the projection of a general decrease in fertility rates, these have increased in absolute numbers in all countries. For the most part, this increase is due to the fact that the population of young women between 15 and 19 years old in Latin America has increased from 7.9 million in 1950 to 20.7 million in 1985, and is estimated to reach 25.7 million by the year 2000 (see footnote 26).

Given that these estimates are projections, they do not accurately reflect the magnitude of adolescent fertility, nor do they make it possible to precisely identify the direction of the most recent trends, which clearly shows the need for research at the national level. Among the few known studies on Latin American countries, those in Brazil, Panama, Peru, and the Dominican Republic deserve mention; these countries seem to have recorded increases in adolescent fertility in recent years.

Late Fertility. According to CELADE projections, this group's fertility rates declined considerably between 1950–1955 and 1985–1990 in all countries of the Region, regardless of their fertility level. Also in all countries, this decline has been greater than those observed for the youngest groups and for total fertility. During 1985–1990, the variation in fertility rates ranged from 0% in Cuba to more than 30% in Bolivia and Haiti. Rate reduction percentages between the two five-year periods range from 33% in Bolivia, El Salvador, and Paraguay, to more than 80% in Brazil, Chile, Costa Rica, and Cuba. In 16 of the countries listed, reductions exceed 50%; figures for Cuba indicate that the reproductive cycle virtually ends before age 35.

Multiparity. High multiparity is associated with increases in the risk of maternal mortality from toxemia, hemorrhage, and sepsis. Evidence also links high multiparity with gynecological problems such as prolapse, rupture of the uterus, cervicitis, and cervical erosion, as well as with anemia, diabetes, and rheumatic diseases.[33]

The decline in fertility has led to a considerable reduction in the risk of maternal morbidity and mortality associated with multiparity, whose overall rank, based on total fertility rates, by countries, is presented in Table 54. It should be pointed out, however, that even in 1985–1990, 50% of Latin American countries had higher fertility levels than the generally accepted critical level of four children per woman, and that in the interior of all countries—even in those with relatively low fertility—there are sectors of the population in which women's average number of pregnancies exceeds the above-mentioned biological risk limit.

Spacing of Pregnancies. Existing evidence shows an association between short intervals between pregnancies and problems in subsequent pregnancies, infant mortality, and malnutrition. Closely spaced pregnancies undermine the mother's health; a woman requires two to three years between pregnancies to completely recover and prepare herself for the next one, and to be able to adequately breast-feed the newborn (see footnote 33).

The reduction in the average number of live births per woman observed in the Region does not necessarily mean that the intervals between pregnancies have increased overall. For vast segments of the population, this decline in fertility simply reflects shorter individual reproductive cycles, masking the incidence of stillbirths and abortion (spontaneous or induced), which occur in significant numbers in the Region.

Reproductive Rights and Gender Differences in Fertility Control

Risk factors of maternal morbidity and mortality associated with uncontrolled fertility fully justify the actions by governments to provide fertility control services. In fact, family planning is currently viewed as a preventive element within primary health care. In addition to this fundamental health rationale, there are other considerations that deal with the broader issue of women's social condition. As WHO points out, "the fact that women are able to control their own fertility is probably one of the most important events in the history of women,"[34] and, as has been reaffirmed by the Nairobi strategies, "the possibility that women may control their own fertility is an important basis for the exercise of other rights" (see footnote 24).

Historically, poor women without access to family planning programs spend most of their productive years either pregnant or breast-feeding, a situation that not only deprives their bodies of sufficient time to recover vital nutrients, but drastically limits their potential participation in nondomestic spheres. By separating procreation from sexual relations, the freedom of human beings, particularly of women, is increased, as a whole new series of personal development options in education, work, and social involvement are opened up.

According to WHO, family planning is a matter of human rights, the right of women and men to choose the number of children they wish to have (see footnote 34). This right was recognized by the Global Plan of Action for Population and was endorsed by the International Conference on Population (1984) and the Nairobi World Conference on Women (1985): ". . .all couples and individuals have the basic human right to make

[33]A. R. Omran, *Fertility and Health. The Latin American Experience* (PAHO: Washington, D.C., 1985).

[34]World Health Organization, "Health and the Condition of Women" (Document FHE/80.1) (Geneva, 1980), p. 13.

a free and informed decision regarding the number and spacing of their children" (see footnote 24).

Prevalence of Contraceptive Use. Urbanization, the expansion of education, changes in women's status, and efforts of family planning programs, among other factors, have contributed to a wider dissemination of contraceptive information throughout the countries of the Americas. Recent data indicate that in Latin America and the Caribbean the greatest contraceptive use is in Costa Rica and Puerto Rico (70% of women of childbearing age), which coincides with levels observed in the North American countries (usage levels among married women of childbearing age range from 68% in the United States to 73% in Canada). Brazil and Colombia (65%–66%), and Mexico, Panama, the Dominican Republic, Venezuela, Jamaica, Martinique, and Trinidad and Tobago (48%–59%), show somewhat lower usage levels. Among the countries with the least extensive use are Bolivia, Guatemala, and Nicaragua (23%–27%), with the lowest being Haiti (7%). Although this type of information is not available for Argentina, Chile, and Uruguay, it is assumed, based on their low fertility levels, that usage is extensive.

Socioeconomic and Gender Differences in the Use of Contraceptives. According to data from the Demographic and Health Surveys (1985–1989), contraceptive use by women varies substantially by urban or rural residence and, even more so, by educational level. In Guatemala, for example, the proportion of contraceptive users is three times higher in the city than in the countryside and six times higher among those with a secondary education than among those with no education. In Ecuador the respective figures are 1.6 and 3.0; in Bolivia, 2 and 4.6; and in Mexico, 2 and 3. In Trinidad and Tobago, differences by place of residence are minimal, although there are differences by educational level.

Adolescents also suffer from significant cultural and material limitations regarding access to contraceptives. Information from the Demographic and Health Surveys indicates that the percentage of women between 15 and 19 years old who use contraceptives is up to 15 times lower than that of the broad age group 15 to 49 years old, and that this reduced prevalence among adolescents is seen not only among women in consensual unions but in all women of childbearing age.

The pattern of use for different contraceptive methods also seems to depend on the level of regional development, the incorporation of the couple into the socioeconomic structure, prevailing policies on population and health, and predominant sociocultural values regarding sexuality and the gender behavior expectations.

Tables 56, 57, and 58 illustrate some of these differences. The first two tables are derived from statistics and projections prepared by the United Nations on the basis of various sources, and the third table is based on information obtained from the Demographic and Health Surveys. This source, although it includes fewer countries, offers more updated data and a more detailed breakdown of the contraceptive techniques most frequently used in Latin America and the Caribbean.

Based on this information, the main differences regarding frequency of use of the different methods can be grouped into two large categories: socioeconomic development level and gender-related behavior.

Socioeconomic Development Level. According to Table 57, the contraceptive method most frequently used in Latin America and the Caribbean is female sterilization. In this subregion 36% of women in consensual unions who in 1983 were controlling their fertility had resorted to sterilization. By contrast, the corresponding figure in industrialized countries was 10%. In terms of the total population of women in consensual unions, the percentage of those sterilized was 7% for the more industrialized countries worldwide and 19% for both Latin America and the Caribbean. Variations in the subregion are considerable, however, and do not appear to be clearly linked to the level of social and economic development of the countries. Thus, the percentage of sterilized women reaches levels of 40% in Puerto Rico (17% for the United States) and more than 25% in Brazil, Canada, the Dominican Republic, El Salvador, and Panama. The lowest registered levels (equal to or lower than the 7% average observed in the group of industrialized countries) are in Bolivia, Grenada, Haiti, Nicaragua, and Peru (Tables 56 and 58).

On the other hand, **male sterilization,** although significantly less frequent than female sterilization in all countries, is more prevalent in the industrialized world than in Latin America and the Caribbean. While in industrialized nations the percentage of male sterilization is 4%—reaching levels of 13% in Canada and 10% in the United States—according to the most recent data, in Latin America and the Caribbean this option consistently hovers somewhere below 1%, with the exception of Puerto Rico, with 4%.

The use of **condoms** is much more prevalent in the industrialized countries—particularly in Europe—than in Latin America and the Caribbean. Thus, while 13% of the women in consensual unions reportedly use condoms in industrialized countries, only 2% opt for this choice in Latin America and the Caribbean.

Vast segments of the female population in Latin America and the Caribbean, as well as in industrialized countries, use **oral contraceptives**: in the first category of countries, the percentage of use among women in consensual unions is 17%, and in industrialized countries, 13%.

The information in Tables 56, 57, and 58 suggests

TABLE 56

Levels and trends of current use of contraceptive methods among women in consensual unions, most recent year.

Country	Year	Age group	Levels (%) Total	Sterilization Women	Sterilization Men	Pill	IUD	Condom	Barrier	Others[a]	Trends Period	Trends Annual percentage increase
Antigua	1981	15–44	39	—9—		16	5	2	6	2	...	...
Barbados	1980/81	15–49	46	14	0.2	17	4	5	5	2	...	...
Bolivia	1983	15–44	26	3	—	3	4	—	2	15	...	...
Brazil	1986[b]	15–44	65	27	1	25	1	2	0.5	9	...	...
Canada	1984	18–49	73	31	13	11	6	8	2	4	...	...
Colombia	1986[b]	15–49	66	17	0.4	16	10	2	5	12	1976–1986	2.0
Costa Rica	1986[b]	15–44	70	—17—		19	7	12	—12—		1976–1986	0.2
Dominica	1981	15–44	49	—15—		16	2	4	10	2	...	...
Dominican Republic	1986[b]	15–49	50	33	0.1	9	3	1	1	3	1975–1986	1.6
Ecuador	1987[b]	15–49	44	15	—	8	10	1	2	8	1979–1987	1.4
El Salvador	1985[b]	15–49	47	32	...[c]	7	3	1	—4—		1975–1985	2.6
Grenada	1985	15–44	31	2	—	8	3	8	7	3	...	...
Guadeloupe	1976	15–44	44	12	...[c]	10	4	6	...	12	...	...
Guatemala	1983	15–44	25	10	1	5	3	1	1	4	1978–1983	1.2
Guyana	1975	15–49	31	8	0.1	9	6	3	2	3	...	...
Haiti	1983	15–49	7	1	0.1	2	0.2	0.5	0.2	3	1977–1983	−1.4
Honduras	1984[b]	15–44	35	—12—		13	4	1	—5—		1981–1984	2.5
Jamaica	1983	15–49	51	11	—	19	3	8	8	3	1975–1983	1.8
Martinique	1976	15–44	51	13	...[c]	17	3	4	2	12	...	...
Mexico	1982	15–49	48	13	0.3	14	7	1	6	6	1976–1982	3.0
Montserrat	1984	15–44	53	—2—		31	11	3	6	0.3	...	...
Nicaragua	1981	15–49	27	7	0.1	10	2	1	2	4	...	...
Panama	1984	15–44	59	33	0.4	12	6	2	2	4	1976–1984	1.3
Paraguay	1979	15–49	36	2	0.1	12	5	2	3	13	1977–1979	2.0
Peru	1986[b]	15–49	46	6	—	6	7	1	2	23	1977–1986	1.6
Puerto Rico	1982	15–44	70	40	4	9	4	5	—8—		1968–1982	0.3
St. Kitts and Nevis	1984	15–44	41	—3—		20	4	6	5	4	...	...
Saint Lucia	1981	15–44	43	—11—		21	1	4	3	3	...	...
St. Vincent and the Grenadines	1981	15–44	42	—12—		13	2	8	4	2	...	...
Trinidad and Tobago	1977	15–49	52	4	0.2	18	2	15	6	6	1970–1977	1.6
United States of America	1982	15–44	68	17	10	14	5	10	6	6	1973–1982	−0.2
Venezuela	1977	15–44	49	8	0.1	15	9	5	1	12	...	...

[a]Includes rhythm, withdrawal, douche, folk methods, and other methods not separately reported.
[b]Preliminary or provisional information.
[c]Included in "others" category.
Source: United Nations. *World Contraceptive Use*, 1987, and later updates.

TABLE 57

Percentage of women in consensual unions who use contraceptives, by type of method, in industrialized countries and in Latin America and the Caribbean, 1983.

Method	Industrialized countries		Latin America and the Caribbean	
	Percentage	Percentage distribution of users	Percentage	Percentage distribution of users
Female sterilization	7	10.0	19	35.5
Male sterilization	4	5.7	0.5	0.9
Oral contraceptives	13	18.5	17	31.8
Intrauterine devices	6	8.6	4	7.5
Condom	13	18.6	2	3.7
Other hormonal and barrier methods	2	2.9	2	3.7
Other methods (rhythm, withdrawal, douche, folk)	25	35.7	9	16.8
Total	70	100.0	53.5	100.0

Source: United Nations. *World Contraceptive Use*, 1987.

TABLE 58

Percentage of women in consensual unions who use contraceptives, by type of method, and percentage distribution of users by method used, in selected countries, 1985–1989.

Country (year)		All methods	Pill	IUD	Injectables	Vaginal	Condom	Sterilization		Rhythm	Withdrawal	Other
								Female	Male			
Bolivia (1989)	P[a]	30.3	1.9	4.8	0.7	0.1	0.3	4.4	0.0	16.1	1.0	0.9
	D[b]	100.0	6.3	15.9	2.3	0.3	1.0	14.6	0	53.2	3.3	3.0
Brazil (1986)	P	65.8	25.2	—	—	—	1.7	26.9	0.8	4.3	5.0	2.0
	D	100.0	38.2				2.6	40.9	1.2	6.5	7.6	3.0
Colombia (1986)	P	64.8	16.4	11.0	2.4	2.3	1.7	18.4	0.4	5.7	5.7	0.9
	D	100.0	25.3	16.9	3.7	3.5	2.6	28.4	0.6	8.8	8.8	1.4
Dominican Republic (1986)	P	50.0	8.8	3.0	0.1	0.2	1.4	32.9	0.1	1.4	1.5	0.6
	D	100.0	17.6	6.0	2.0	4.0	2.8	65.8	0.2	2.8	3.0	1.2
Ecuador (1987)	P	44.3	8.5	9.8	0.7	1.2	0.6	15.0	0.0	6.1	2.0	0.3
	D	100.0	19.2	22.2	1.6	2.7	1.3	33.9	0	13.8	4.5	0.7
El Salvador (1985)	P	47.3	6.6	3.3	0.7	0.2	1.2	31.8	0.7	1.9	0.8	0.1
	D	100.0	13.9	7.0	1.5	0.4	2.5	67.2	1.5	4.0	1.7	0.2
Guatemala (1987)	P	23.2	3.9	1.8	0.5	0.4	1.2	10.4	0.9	2.8	1.2	0.1
	D	100.0	16.8	7.8	2.1	1.7	5.2	44.8	3.9	12.1	5.2	0.4
Mexico (1987)	P	52.7	9.7	10.2	2.8	0.6	1.9	18.6	0.8	—	—	8.1
	D	100.0	18.4	19.3	5.3	1.1	3.6	35.5	1.5			15.4
Peru (1986)	P	45.8	6.5	7.4	1.3	1.0	0.7	6.1	0.0	17.7	3.6	1.5
	D	100.0	14.2	16.1	2.8	2.2	1.5	13.3	0	38.6	7.9	3.3
Trinidad and Tobago (1987)	P	52.7	14.0	4.4	0.8	5.0	11.8	8.2	0.2	2.6	5.3	0.3
	D	100.0	26.6	8.4	1.5	9.5	22.4	15.6	0.4	4.9	10.1	0.6

[a]Percentage that uses the method within the total number of women in consensual unions.
[b]Percentage that uses the method within the total number of women in consensual unions who practice contraception.
Source: Population and health surveys conducted by the respective countries with IRD/Westinghouse/Macro Systems.

that, although there are some overall differences between the industrialized world and the developing countries regarding preference for certain contraceptive methods, in the Region of the Americas the relationship among these variables is not consistent. The worldwide dissemination of information on various modern contraceptive methods has broken down technological barriers that might have limited the availability of certain methods in some countries, thus opening a vast range of contraceptive options to areas of less relative development, which sometimes exceeds the opportunities available in some highly industrialized countries. As a result, differences have less to do with technological progress than with the population and health policies adopted by the different countries and the culturally determined behavior and values associated with gender.

Gender-related Behavior. The most profound and widespread inequity between the sexes concerning contraceptive use patterns deals with assuming responsibilities and risks associated with fertility control. An unmistakable illustration of this inequity is the percentage distribution of methods used by sexually active couples in the countries of Latin America and the Caribbean (Table 57). These data indicate that in slightly more than 80% of the cases, the responsibility and risks of contraceptive use basically rest with the woman.

When these figures are compared with those in more industrialized countries, it becomes clear that, although women in these countries also bear the brunt of responsibility for contraception, the distribution by sex of this responsibility is significantly more egalitarian than in Latin America. Thus, within the group of contraceptive methods, those utilized by males—sterilization and condoms—have usage rates (1983) of approximately 25% in the developed countries of Europe and North America versus 5% in Latin America and the Caribbean. The greatest inequity by sex regarding the distribution of contraceptive responsibilities and risks, in geographic terms, is in Latin America, with the Caribbean occupying an intermediate position between Latin America and the developed countries. It should be emphasized, as will be seen later, that medical technology to date has not produced a contraceptive method that is completely effective, harmless, and reversible, leading to a situation in which sexually active women invariably have to assume one of two health risks: the risk of pregnancy or the risk of side effects from the use of contraceptives or from abortion.

Within this context of inequity between the sexes regarding fertility control, the most dramatic difference is observed in terms of the use of **sterilization**: of the total number of couples who control their fertility in Latin America and the Caribbean, 36% of women and 0.9% of men have been sterilized. At the country level, the respective percentages are 67% and 1.5% in El Salvador, 66% and 0.2% in the Dominican Republic, 41% and 1% in Brazil, and 35.5% and 1.5% in Mexico (Table 58). The difference in North America is not as stark, particularly in the United States, where the figures are 25% and 15%.

The preponderance of female sterilization for fertility control in Latin America, the many women who resort to this method at an early age, and the frequency with which women express their dissatisfaction with this option, are all factors that call for a careful study of the socioeconomic context in which women make that decision and of the implications of this alternative, both in terms of the demographic consequences for society as a whole and of the social and psychological effects on women's lives.

Contraceptive Health Benefits and Risks for Women. The risk/benefit ratio of contraceptive use varies depending on the method and the individual circumstances of the user. In terms of mortality risks, studies conducted in the United States point out that, in this particular country, women who do not control their fertility, run an average risk of death that is higher than those who use oral contraceptives or barrier methods, or who have legal abortions during the first 16 weeks of pregnancy. However, still higher than the risk of death from pregnancy and delivery complications is the risk inherent in illegal abortion, late legal abortion, hysterectomy, and contraceptive use among smokers older than age 29.[35] The risk of death associated with the interaction of smoking and oral contraceptive use is lower than that of pregnancy and delivery prior to age 24; it is comparable between ages 25 and 29, and higher thereafter, almost tripling after age 40.[36]

As mentioned earlier, these data refer to the United States, where maternal death rates are considerably lower than in Latin American and Caribbean countries, but the information still is indirectly relevant. The situation pertaining to risks of death from pregnancy and contraception within a given population framework is, of course, quite different in countries such as Bolivia, Haiti, and Paraguay, where maternal mortality rates are more than 20 times that of the United States and where prevalence of contraceptive use is substantially lower. Nevertheless, it is important to consider that, along with decreases in maternal mortality as a result of contraceptive use, the percentage of the population exposed to the risks of morbidity and mortality associated with contraceptive use increases proportionally. On the other hand, different

[35]R. A. Hatcher, et al. *Contraceptive Technology,* 1988.

[36]D. Maine, *Family Planning: Its Impact on the Health of Women and Children* (New York: Center for Population and Family Health, Columbia University, 1981).

conditions pertaining to educational level and access to health services and health education (including warnings and alarm signs) faced by women of different socioeconomic strata raise questions about the homogeneity of risks.

In terms of the effectiveness of contraceptive techniques, existing information shows that the most effective methods are not necessarily those that carry the fewest health risks (see footnote 35). The methods that combine the greatest effectiveness and least harm are those used by males, which are, however, also the ones used least frequently.

The health risks for women associated with contraceptive use are, of course, not limited to death, but also include illnesses with different degrees of severity. The association between the use of some contraceptive methods and the occurrence of specific types of morbidity has been a matter of great controversy. This section deals only with those risks that research has most often associated with the two most commonly used methods after sterilization—oral contraceptives and intrauterine devices (IUDs).[37]

The most serious health problem associated with the use of oral contraceptives is an increased risk of cardiovascular disorders, especially hypertension. Studies conducted mostly in industrialized countries, but also in some developing countries, indicate that users of oral contraceptives run a risk two to five times higher of incidence of myocardial infarction and a risk two to ten times higher of cerebrovascular accidents; these risks are heightened in the presence of such other factors as age, previous hypertension, and smoking.

Among the risks associated with IUDs are an increase in the frequency and volume of bleeding, anemia, partial or total expulsion of the device (which may not be felt by the user, thus decreasing the method's effectiveness), loss of IUD threads, difficulty in extracting the device due to incrustation in the uterine tissue, perforation of the uterine body or the cervix, and pelvic inflammatory disease, which may cause adhesions or complete obstruction of the tubes that could lead to ectopic pregnancies or sterility. The higher risk of pelvic infection in IUD users could have significant consequences for populations where sexually transmitted diseases are common, because the IUD can aggravate undetected or untreated infections (see footnote 35).

This discussion of the risks associated with contraceptive use in no way dismisses the significant improvements that access to contraceptive technologies has brought to the quality of life, particularly for women, nor the critical need to actively pursue the universal exercise of a person's right to control his or her own fertility. Rather, this analysis' intention is to point out that, given the broad variations in the risk/benefit ratio of different fertility control methods, choosing any one of them should be up to individual considerations and should take into account the stage of the life cycle or the social and health condition of the user. The emphasis, then, is on freedom and information as guides to the selection process. The right of an individual or a couple to make free and informed decisions about the number and spacing of their children assumes, first of all, that the real and potential users (men and women) are thoroughly informed about the risks and benefits associated with the different methods; second, that the range of available, medically approved methods is made truly accessible to users; and third, that selection, control, and follow-up methods that have been recommended for the different methods are established and implemented. On the other hand, there is a clear need to research and produce new and better contraceptive methods for men, adolescents, lactating mothers, and women at the end of their reproductive years.

Final Considerations

The concept of equity, which is at the root of the goal of health for all, is based on the notion of need. This means that the distribution of services will address inequities in the specific requirements of certain population groups that for biological, physical, and social reasons have different physiological requirements and face different health risks. Acknowledging this fact has led to programs specifically designed to meet the needs of particular groups without excluding these groups from the general services intended for the entire population. The issues raised here help to identify, within an integral approach that includes but is not limited to biological reproduction, some of the health requirements of women, who, for biological and social reasons, justify specific care and treatment.

Within the context of the conditions and needs analyzed here, the following are most important, due to their prevalence:

- Anemia and malnutrition, because of their disproportionately greater harm to women's survival opportunities during childhood and quality of life throughout their life cycle.
- Maternal morbidity and mortality, because the magnitude of these rates is unacceptable in view of the fact that they can be prevented.
- Cancer of the uterine cervix, because of its high in-

[37]M. Vargas, "El uso de la tecnología en la salud integral de la mujer" (Washington, D.C.: PAHO, Women, Health, and Development Program and Health Policy Program, 1989).

cidence and the fact that most deaths caused by it can be prevented.

- Affective disorders, particularly depression, because of its association with emotional pressures that are tied to society's definitions of gender roles.
- Violence against women by their spouses, not only because of its endemic nature, but also because of the tolerant and, in some cases, encouraging attitude that social institutions have regarding this situation.
- The additional physical and mental waste implied by the double workday to which women who participate in the work force are subjected.
- Disability as a result of chronic diseases during old age and aggravated by a lack of services, which, given women's greater longevity and their greater confinement to the domestic sphere during the productive years, basically have become problems of the female sex.

Health of the Elderly

There is no single definition for "elderly" that can be universally applied or used. The World Assembly on Aging (United Nations, Vienna, 1982) set 60 years old as the beginning of the aging stage. Currently, the world's total population is growing at a rate of 1.7% annually, while the population 60 years old and older is growing at a rate of 2.5% annually. Every month, this age group has a net increase of about 1.4 million people, and more than 80% of this monthly increase occurs in developing countries, where the growth rate for persons 60 years old and older (3.3%) is three times higher than in developed countries.

In Latin America and the Caribbean, the population 60 years old and older was estimated at 23.5 million in 1980; it is projected to be 42.1 million in the year 2000, and 96.6 million in 2025 (6.5%, 7.8%, and 12.7% of total population, respectively). In addition, life expectancy at birth would increase 21.6 years, from 51.2 years in 1950–1955 to 72.8 years in 2020–2025.

The age group 0–14 years old would decrease from 39.2% in 1980 to 32.8% in 2000 and 25.7% in 2025, while the age group 15–59 years old would account for 54.3%, 59.4%, and 61.6%, respectively. The birth rate would decrease from 30.9 per 1,000 population in 1980–1985 to 18.5 in 2020–2025.

Health interventions for the elderly aim at enabling them to enjoy the best possible functioning and quality of life, and to delay death as long as possible. The goal is to "add life to years," by promoting family and social support and integration of the elderly, maintaining and improving their physical and mental capacity, striving to avoid illness, and ensuring care for the sick.

Services for the elderly should form part of the general system of services and should ensure acceptable levels of competence and functioning for the elderly population. In order for these services to be efficient and effective, they must be highly accessible and flexible, so as to rapidly and adequately respond to continuously changing needs and situations. In addition, they should coordinate with other social service systems, such as housing, social security, nutrition, transportation, and recreation to ensure that the elderly's needs are satisfied in an integrated manner.

The organization of services for the elderly should be based on the basic principle called "continuity of service." Specific services should reflect differences in needs, and are classified as follows: services for the relatively healthy elderly, alternatives to long-term hospitalization, and long-term or permanent care in institutions. A gerontological approach, which effectively combines social and health services, should be implemented. There is consensus that institutionalization of the elderly should be postponed as long as possible, and that care within the family and the community should be promoted as a more humane and effective alternative.

The development of services for the elderly generally has been quite limited in Latin America, and policies, programs, and services have been granted a very low priority and minimal support. In response to the changes in the population's age structure, and given that the large number of elderly probably will alter the operation of health and social security systems, administrators in some countries have begun to plan more coherent, effective, and efficient policies and programs.

The current gap between the needs of the elderly and the availability of services essential to satisfy them is, for the most part, the result of historical, ideological, social, economic, and organizational factors that have influenced policy making. The population's age structure tended to highlight younger age groups, and, consequently, resource allocations were repeatedly oriented toward serving these younger groups. Health activities have successfully focused on the mother-child pair and on preventing and controlling communicable diseases. Elderly persons who suffer from chronic diseases or who require long-term care traditionally have been cared for by their families or by institutions, with minimal access to services or treatment by professionals.

The neglect in the elderly's care has been aggravated by sociocultural values that project a negative image of aging and the elderly. In those countries that recognize the importance of the problems of the elderly, attempts to formulate policies have been stymied by a belief that questions the economic rationality of assigning resources to solve the problems of a nonproductive minority. In addition, prejudices and misconceptions about aging and the elderly drain support for research, education, and training efforts in gerontology and geriatrics.

The scarcity and unreliability of available information about the situation of the elderly in the Region have stimulated PAHO, some Member Countries, and several nongovernmental agencies to conduct research projects. Studies have been undertaken on the elderly's needs, morbidity, drug consumption patterns, dementia prevalence, and services, and efforts have been made to train multidisciplinary and multisectoral workers and to disseminate information.

Prevalent Problems

This section analyzes the elderly's leading health problems, those that cause the greatest mortality and morbidity. Data on the first five causes of death, obtained through an analysis of information submitted by 34 countries in the Region of the Americas for the most recent years available (especially 1985 and 1986) for the age group 65 years old and older, were used to analyze mortality (see also Annex III of this volume).

The leading cause of death in 29 countries was heart disease (between 20.0% and 39.8% of the total number of deaths from defined causes in this age group), with low figures of 17.9% and 19.1% in two countries (Peru and Guatemala) and high figures of 40.6% and 42.5% in three (Argentina, Saint Lucia, and the United States of America).

Malignant neoplasms are the second leading cause of death in 18 countries and the third in 14, at 22.0% to 39.8%; in Curaçao they were the first cause (25.9% of the total), and in Guatemala, the fourth (10.0%).

Cerebrovascular diseases were the second leading cause of death in 12 countries and the third in 18; in 27 of these 30 countries they represented between 7.6% and 19.3% of the total, and in three others, between 20.2% and 23.0%. In Martinique, cerebrovascular diseases were the leading cause of death (23.3%) and in Peru and Belize, the fourth (6.5% and 7.1%, respectively).

Diabetes was the fourth leading cause of death in 10 countries and the fifth in 13, representing between 3.0% and 5.9% in 14. Barbados, Mexico, Saint Lucia, and St. Vincent and the Grenadines had percentages between 7.5% and 9.5%, and Trinidad and Tobago, 10.3%. These figures contrast with those of Argentina, Canada, the United States, and Uruguay, with percentages between 1.9% and 2.6%.

Influenza and pneumonia were the first leading cause of death in Peru (18.0%), the second in Guatemala (15.3%), the third in Belize (8.4%), and the fourth or fifth in 25 countries (2.6% to 9.5%).

Accidents represented the fourth leading cause of death in El Salvador, Guatemala, Honduras, and Martinique, with percentages from 3.8% to 7.1%. In Belize, Costa Rica, Cuba, Ecuador, Guyana, and Panama they were the fifth cause (2.9% to 4.6%).

Regarding morbidity in the elderly population, routinely available information about medical visits and hospitalizations unfortunately has been given little technical and policy attention in the countries in the Region, despite its enormous importance. Incidental data (surveys), which could complement routine information, have been little used because of the difficulty in gathering them and their high cost. Examples from Costa Rica, Argentina, Chile, and the United States of America are presented below to illustrate morbidity in the Region's elderly.

In 1985, the Biomedical Information Division of the Costa Rican Social Security Fund (CCSS) conducted a study of morbidity in persons 60 years old and older. Since 86.8% of that age group is entitled to the Fund's services, the study is considered to have had a national scope. The investigation found that although the population 60 years old and older represented only 6% of the total population, it produced more hospital discharges (11.8%, with a ratio of 4.9 consultations annually per inhabitant) and required more medical visits (13.0%, with a ratio of 2.3 discharges per 10 inhabitants) than any other population group, and that the average hospital stay (14.5 days) was longer than the national average.

Men had more discharges than women, but women required more medical consultations. Annual consultations per inhabitant increased with age, and in persons 70 years old or older this ratio was three times greater than that of the total population. Diseases of the circulatory system (23.1%), diseases of the musculoskeletal system and connective tissue (13.8%), and respiratory diseases (10.3%) were the most frequent causes of medical consultations among men. Among women, diseases of the circulatory system (27.9%), diseases of the musculoskeletal system and connective tissue (13.2%), and nutritional, endocrine, and metabolic diseases (10.0%) predominated.

The most frequent causes of hospitalization in men were ischemic heart disease (6.4%), hyperplasia of prostate (5.7%), and airway obstruction (4.3%). In women, diabetes mellitus (8.3%), ischemic heart disease (5.8%), and airway obstruction (5.4%) predominated. Hospitalizations for injuries from falls were more frequent among persons 60 years old and older (average stay: 13.4 days). The elderly covered under the noncontributory plan and those insured by the State produced 38.0% of the discharges and 54.6% of corresponding hospital stays.

Most of the elderly (46.5%) were hospitalized in CCSS's three largest general hospitals, with stays averaging from 10.7 to 11.7 days; only 5.3% of the discharges occurred at the Dr. Blanco Cervantes Acute Geriatric Hospital, with average stays of 22.6 days. The Rehabilitation Center produced less than 1.0% of the discharges

of persons 60 years old and older, but represented 19.3% of the discharges from that institution, with an average stay of 34 days.

The care of persons 60 years old and older as CCSS outpatients cost approximately 325 million colones, while hospitalization costs amounted to about 1.3 billion colones; the cost for an average hospitalization (an average length of stay of 14.5 days) was 35,580 colones.

The case of Argentina will be illustrated with data drawn from the collaborative survey on morbidity sponsored by PAHO, which covered hospital discharges and consultations in Buenos Aires Province, the cities of Rosario and Mar del Plata and the Metropolitan Area, and hospital discharges only in the provinces of Buenos Aires (except for Mar del Plata and its suburbs) and San Luis. Regarding hospital discharges, cardiovascular diseases were the leading cause of hospitalization (20% to 35% of the total) in 1985, followed by diseases of the digestive system (11% to 19%) and respiratory disorders (6% to 15%). Malignant neoplasms, genitourinary ailments (especially in males), and injuries and poisonings also occupy important places.

Case-fatality rates—which may express the seriousness of cases, the poor quality of services, or both—increased with age, but varied greatly among the areas chosen (Tables 59 and 60). Thus, case-fatality rates in the Federal Capital for age groups 60–69, 70–79, and 80 years old and older were 12.5%, 16.7%, and 25.0%, respectively, with a total rate of 18.0%. In the northern and southern suburbs, the total rate was slightly higher (19.7%), especially in the older age groups, in which the rates were 31.4% and 31.0%, respectively. In Rosario, the total case-fatality rate was 17.0% (26.7% in the oldest age group); in contrast, data from the Buenos Aires Medical Federations show total case-fatality rates as low as 6.6% and 6.7% (12.9% and 8.1% in those 80 years old and older). Data from the Medical College of San Luis show proportions of 7.9% for the overall rate and 9.3% for the group 80 years and older, while the rates at the Private Community Hospital of Mar del Plata were 10.1% and 18.8%, respectively. The public sector of Buenos Aires Province had intermediate figures (14.2% and 24.9%, respectively).

In a study on the use of drugs in older persons affiliated with the Argentina National Institute of Social Services for Retirees and Pensioners, which started in 1987 with PAHO sponsorship, it was found that in the first quarter of 1987 and in the third quarter of 1988, the most commonly used drugs by outpatients were cardiovascular agents (21%, costing 31% of the total), psychopharmaceuticals (10%, costing 5% to 6% of the total), gastrointestinal agents (10%, costing 8% to 9%), antiinfectious agents (9% to 11%, costing 8% to 9%), analgesics (9%, costing 10% to 11%), vitamins and nutrients (4% to 6%, costing 4% to 6%), and metabolic modifiers (5%, costing 6% of the total).

In 1984, the United States population aged 65 years old and older was estimated at 28 million (12%), 3.3 million of whom lived below the poverty line. Most persons 65 years old or older had at least one chronic disease; many had multiple chronic diseases. The most frequently occurring were arthritis (50%), hypertension (39%), hearing loss (30%), cardiac diseases (26%), orthopedic lesions (17%), cataracts (15%), sinusitis (15%), visual alterations (10%), and diabetes (9%). These percentages include only the uninstitutionalized.

One-fifth of elderly persons are hospitalized annually (but only 9% of those under 65 years old). Among those hospitalized, the elderly had higher rates of more than one hospital stay than did younger age groups (27% against 17%), and their average stay was longer (10 days versus 7 days). Older people also had more medical consultations than younger persons (8 versus 5).

In 1984, persons 65 years old and older represented 12% of the total population, but the cost of caring for their health was 31%. These expenditures amounted to $US120 billion, with an average of $US4,202 per year per person, more than three times the $US1,300 spent on younger persons. Almost $US1,000—in other words, one-quarter of the average cost—came directly from the elderly themselves. Benefits awarded by the Government (Medicare, $US59 billion; Medicaid, $US15 billion; and other entitlements, an additional $US7 billion) covered 67% of the health expenses of the elderly, compared to 31% of those for persons younger than 65 years old.

Other Problems Affecting the Daily Life of the Elderly

Dementia and depression are the most important mental illnesses. It is thought that of the 28.6 million persons 65 years old and older in the United States in 1985, between 2.5 million and 3 million suffered some kind of dementia and between 1.5 million and 2.5 million had Alzheimer's disease, considered the most devastating of all dementias and for which there is no specific diagnostic method or treatment that can cure the disease, reverse it, or stop its progression.

In order to determine the prevalence of dementia in the noninstitutionalized elderly population, PAHO sponsored a two-stage collaborative study of probability samples in Buenos Aires, Havana, and Santiago. The first stage consisted of a screening to identify subjects with intellectual deficit, and the second stage involved clinical confirmation. The first stage was completed in Havana and Santiago (samples of 1,630 and 468 persons, respectively), and the second is under way.

TABLE 59

Distribution of hospital discharges and hospital mortality in persons 60 years old and older, by age groups and by sex, Argentina, 1985.

Years of age	Federal Capital		Northern suburbs		Southern suburbs		Public sector, Buenos Aires Province		Medical Buenos Aires Federation		Medical Buenos Aires Federation		Comprehensive Medical Care Program		Medical College of San Luis		Private Community Hospital of Mar del Plata	
	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality
Total[a]																		
All ages	800	18.0	801	19.7	801	19.0	800	14.2	796	6.6	799	6.7	800	17.0	800	7.9	799	10.1
60–69	216	12.5	283	11.7	267	12.3	332	9.6	287	3.2	259	5.2	267	9.9	259	5.8	297	5.8
70–79	352	16.7	324	19.7	334	17.0	307	13.7	333	6.2	343	6.9	350	17.4	358	8.8	363	10.4
80 and over	232	25.0	194	31.4	200	31.0	161	24.9	176	12.9	198	8.1	183	26.7	183	9.3	139	18.8
Men																		
All ages	349	17.8	427	19.4	407	21.1	410	16.1	380	7.4	371	5.4	366	17.7	402	10.0	451	11.6
60–69	102	12.8	159	14.5	148	16.2	178	8.8	142	3.7	122	4.8	136	11.3	123	8.9	153	6.6
70–79	165	16.4	184	19.0	183	18.0	167	17.4	164	5.2	160	6.7	157	18.6	172	10.6	222	11.9
80 and over	82	26.9	84	29.8	76	38.1	75	24.7	74	19.4	89	7.5	73	27.4	107	10.3	76	21.0
Women																		
All ages	450	18.2	369	19.8	388	16.5	376	12.2	414	5.9	426	7.6	433	16.5	397	5.9	346	8.2
60–69	113	12.4	123	8.1	116	6.9	148	7.4	144	2.8	135	5.7	130	8.5	135	3.0	144	4.9
70–79	187	17.1	138	20.3	149	16.1	135	8.9	169	7.2	182	8.4	193	16.4	186	7.0	140	8.0
80 and over	150	24.0	108	32.4	123	26.0	93	24.8	101	8.2	109	8.7	110	26.2	76	7.9	62	10.4
Unspecified																		
All ages	1	—	5	40.0	6	33.3	14	14.3	2	—	3	33.3	1	—	1	—	2	—
60–69	1	—	1	—	3	33.3	6	—	1	—	2	—	1	—	1	—	—	—
70–79	—	—	2	50.0	2	—	5	20.0	—	—	1	100.0	—	—	—	—	1	—
80 and over	—	—	2	50.0	1	100.0	3	33.3	1	—	—	—	—	—	—	—	1	—

[a]Discharges in which the condition on discharge was not specified have been excluded.
Source: Survey of morbidity in the elderly in Argentina, 1985, PAHO–National Institute of Social Services for Retirees and Pensioners.

TABLE 60

Distribution of hospital discharges and mortality in persons 60 years old and older, by causes and areas, Argentina, 1985.

Diagnosis	Federal Capital		Northern suburbs		Southern suburbs		Public sector, Buenos Aires Province		• Medical Federation of Buenos Aires		Medical Federation of Buenos Aires		Comprehensive Medical Program		Medical College of San Luis		Private Community Hospital of Mar del Plata	
	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality	Dis-charges	% mor-tality
All causes[a]	800	18.0	801	19.7	801	19.0	800	14.2	796	6.6	799	6.7	800	17.0	800	7.9	799	10.1
Malignant neoplasms	71	22.5	66	25.8	49	24.5	80	20.0	68	1.5	39	10.3	101	18.6	33	15.2	104	9.6
Nutritional and metabolic	59	37.3	57	36.8	34	29.4	34	17.6	18	—	26	7.7	42	21.4	51	7.8	29	3.8
Diabetes	23	26.0	15	33.3	15	13.3	18	16.7	6	—	14	7.1	22	13.6	21	9.5	12	25.0
Nervous system and sensory organs	29	10.3	34	11.8	20	5.0	24	8.3	33	9.1	26	3.8	25	12.0	23	4.3	39	2.6
Cardiovascular	240	21.7	244	27.5	283	25.4	207	19.8	179	11.7	171	8.8	247	18.2	187	12.8	215	13.0
Hypertension	9	—	11	—	23	—	26	3.8	14	—	12	—	27	11.1	25	—	4	—
Ischemic	34	8.8	31	19.4	34	20.6	21	28.6	26	19.2	19	21.1	43	13.9	18	16.7	61	6.6
Pulmonary circulation and others	89	19.1	93	30.1	101	31.7	74	21.6	56	7.1	58	5.2	95	13.7	84	8.3	61	14.8
Cerebrovascular	73	34.2	77	35.1	79	27.8	55	29.1	60	20.0	53	15.1	67	32.8	48	29.2	54	24.1
Other	35	20.0	32	18.8	46	23.9	31	6.5	23	—	29	—	15	6.7	12	—	35	5.7
Respiratory	72	22.2	68	16.2	71	16.9	93	18.3	113	9.7	88	5.7	64	25.0	90	10.0	83	18.1
Digestive	99	9.1	129	13.2	110	8.2	111	6.3	124	4.8	117	6.0	101	10.9	152	6.6	131	9.2
Hernias	27	—	33	3.0	24	4.2	26	—	17	5.9	17	5.9	21	—	21	—	27	3.7
Gallbladder and bile ducts	23	8.7	39	5.1	31	6.5	33	3.0	42	4.6	35	5.7	25	8.0	49	8.2	22	—
Genitourinary	55	3.6	58	5.2	47	8.5	51	3.9	41	2.4	50	2.0	54	11.1	51	2.0	45	4.4
Musculoskeletal	17	17.6	13	—	22	—	22	—	30	3.3	37	—	16	6.3	29	—	19	—
Accidents	83	6.0	62	9.7	63	6.3	59	10.2	51	—	53	3.8	33	18.2	53	—	42	9.5
Ill defined	31	25.6	34	17.6	48	35.4	53	20.8	82	4.9	130	6.2	60	20.0	58	10.3	41	7.3
Remainder	44	18.2	36	16.7	54	20.4	66	9.1	57	5.3	62	4.8	57	14.0	73	4.1	51	2.0

[a]Discharges in which the condition on discharge was not specified have been excluded.
Source: Survey of morbidity in the elderly in Argentina, 1985, PAHO–National Institute of Social Services for Retirees and Pensioners.

With financial support from the Trust Fund for the Aging (United Nations), voluntary donations from 13 governments, and Help Age International, the regional program on the health of the elderly conducted a Survey on the Needs of the Elderly in order to prepare a profile of the elderly population in each participating country. In 1988, results were available from Argentina, Chile, Costa Rica, Guyana, and Trinidad and Tobago; the other participating countries are Barbados, Brazil, Colombia, Cuba, El Salvador, Honduras, Jamaica, and Venezuela. From the available findings a common profile was drawn up whose characteristics are presented below.

Between one-third and one-half of those interviewed in the survey stated that their vision was bad or very bad, with no differences seen between men and women; this condition worsened with age. Fewer than one-half had consulted an eye specialist in the six months before the interview. Ten percent of the elderly under 80 years old reported that their hearing was bad or very bad; among those 80 years old and older the proportion was 20%, and in some groups it was 33%. Approximately 75% of those under 80 years old said that their dental health was average, good, or very good, but that proportion decreased to 50% in those 80 years old and older. From 20% to 33% reported that they were often unable to chew food as a result of tooth loss.

Medication in the elderly poses many problems, and drugs often interact in complex ways. Multiple morbidity in the elderly requires them to consume more drugs than younger people, with an attendant higher risk of adverse reactions. As a result of confusion from the use of several drugs, the elderly often do not adhere to drug regimens, and this problem is complicated by memory lapses, impaired vision, and reduced manual dexterity. Loss of reserve capacity and reduced homeostatic control further increase the elderly's vulnerability to drugs. Many physicians are unaware of the numerous differences in pharmacologic treatment between the elderly and young people, and the coexistence of several diseases makes it difficult for physicians to decide which symptoms should be treated first. Pharmacokinetic and pharmacodynamic alterations also are seen.

The survey found that between 50% and 75% of the elderly (especially women) take drugs prescribed by a physician. In three of the five countries, the proportion of women 80 years old and older who took medication was lower than the proportion in younger groups, which can be attributed to the difference in attitudes and beliefs of the elderly, the difference in attitudes and practice of the physicians, or a combination of the two.

The Survey on the Needs of the Elderly provides a sociomedical characterization of this age group that includes an identification of the neediest groups, so that the profile can serve to establish policies and programs tailored to the needs of each country.

Between 50% and 75% of the population interviewed lived in multigenerational homes. The proportion living alone varied from one country to another, but usually was somewhat higher than 10% and increased with age. In Guyana and Trinidad and Tobago, between 20% and 24% of women 80 years old and older lived alone, but in one of these countries the proportion climbed to 40% among men. In Argentina and Chile the percentages for men in this age group who lived alone ranged from 10% to 16%, and for women, 9% to 21%. The percentages in Costa Rica showed wide differences between men 80 years old and older in urban areas (3%) and those in rural areas (17%); in contrast, the figures for women were 10% and 16%, respectively.

In Guyana and Trinidad and Tobago, the percentages of men who lived only with their spouses varied from 5% to 27%, and those of women, from 0% to 18%. In Argentina and Chile, men 80 years old and older showed figures of 30% to 58%, and women of the same age, 3% to 16%. In Costa Rica the figures were 18% for men and between 4% and 9% for women living in urban areas, and 23% for men and 3% for women living in rural areas. These figures represent a fair approximation of the groups at real or potential high social or medical risk, or both.

Most of the elderly stated that they had someone to help them with household tasks and daily living activities when necessary, although from 10% to 30% said they did not have such help. Close family members, especially daughters, were the main source of support for men 75 years old and older and for women of all ages.

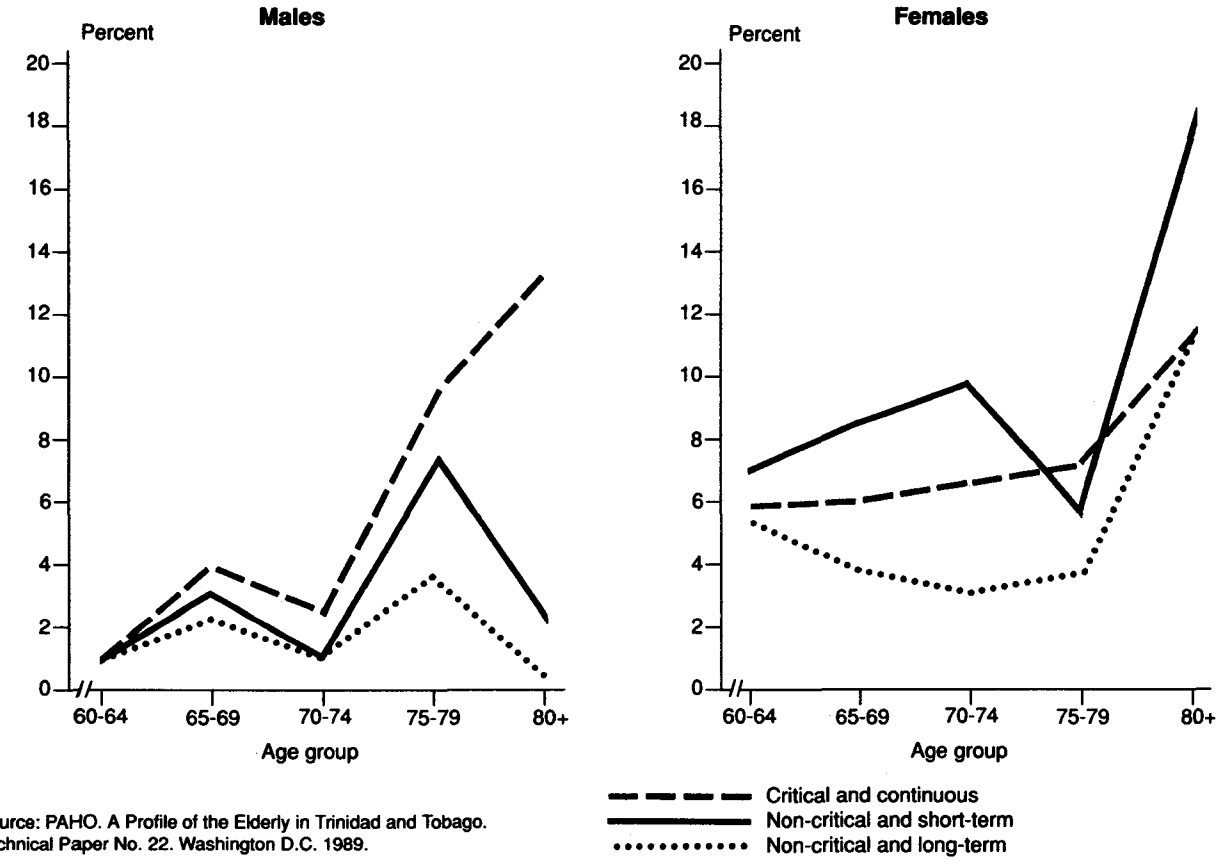
Two criteria were used simultaneously to describe the extent of the elderly's ability to function physically: the interval between episodes in which they needed help and the scope of the service needed in terms of the elderly's continued well-being. Most of the elderly were independent and active. Thus, more than 90% of those younger than 80 years who were interviewed could eat, dress, bathe, fix their hair, and get in and out of bed by themselves; were continent; took their own medicines; and walked on a flat surface unassisted. Figure 18 illustrates the situation of the elderly in Trinidad and Tobago in relation to daily living activities.

The survey elucidated certain patterns that have enormous implications for policy planning and implementation. Above all, the prevalence of disability increases with age, and although the population 80 years old and older has a relatively high prevalence, by and large, it is still able to carry out tasks required in independent living. The most significant finding in the survey was that close to 10% of the population younger than 80 years old requires help in tasks essential for its independence at home, and that this proportion generally doubles (20%–25%) in those 80 years old and older.

Regarding the perception of chief difficulties, economic and health problems dominated the survey's re-

FIGURE 18

Percentage of elderly who needed help with one or more activities of daily living, by category of activity, age group, and sex, Trinidad and Tobago, 1986.



Source: PAHO. A Profile of the Elderly in Trinidad and Tobago. Technical Paper No. 22. Washington D.C. 1989.

sults, with a similar pattern in almost all the countries. The younger elderly (60 to 70 years old) identified their main problems as economic ones, much more so than health problems. At later ages, however, health problems became the more important, especially among women.

In most of the countries, the elderly have a constitutional right of access to social and health services provided by ministries of health and social welfare. Nevertheless, only a few elderly are entitled to benefits from social security institutions, except in some countries (Argentina, Costa Rica, and Cuba, among others), in which the coverage of medical and economic services is universal or very widespread.

Programs that care for the elderly are particularly concerned with the elderly at high risk: those who live under harsh social and/or medical conditions that threaten their life or independence, such as isolation, very advanced age, discrimination against women, severe poverty, chronic illness, physical or mental disability, no home of their own or no close family members, and long-term institutionalization.

OTHER HEALTH PROBLEMS OF IMPORTANCE IN THE REGION

Communicable Diseases

Malaria

The public health problem of malaria in the countries of the Region is influenced by sociocultural factors that are tied to development and to the adverse economic situation affecting most of the countries. In addition, physical proximity and ease of travel between countries contribute to the interaction of geographic and bioecological factors important in the epidemiology of malaria, facilitating rapid transmission and spread of the disease at a rate that is outpacing the capacity of the health services to deal with it. At the same time, the countries are going through a period of transition between the doctrine and strategy of controlling malaria and those of eradi-

cating it. They are aware of the need to shift the emphasis of their programs and adapt their administrative structures toward an epidemiological approach to surveillance, prevention, and control of the disease that takes into account not only local socioeconomic conditions but also the resources of the population. To this end, they are working to incorporate malaria control into the activities of local health systems in order to ensure the continuity and permanence of these actions.

The malaria situation worsened during the 1985–1988 quadrennium, both from the point of view of increased annual parasite incidence[38] and in terms of reduced prevention and control activities in some of the countries, where fewer dwellings were protected by spraying with residual insecticides. Several countries noted with concern an increase in mortality from malaria, particularly in regions where *Plasmodium falciparum* is prevalent.

Malaria has persisted or has gotten worse in those areas where it already existed, and transmission has been reestablished in some areas where it had previously been interrupted. In addition, malaria continues to be prevalent in rural areas where housing and living conditions are precarious, and it affects the population's ability to carry out productive activities such as agriculture, livestock raising, fishing, and mining.

The steady increase in malaria cases has obliged the countries to step up the use of antimalarial drugs. The control programs are aware of the need for easier and decentralized diagnosis to enable more efficient control of the disease through the timely treatment of patients at the local level.

The scarcity of resources in general, and financial and human resources in particular, continues to be a problem in many of the countries and serves to aggravate the situation. However, the countries have intensified their efforts to train existing human resources.

The current status of the disease is determined in part by eradication activities undertaken by the countries in the last two decades, and in part by the disease's transmission dynamics as influenced by social and economic development in the countries. The movement of refugees, displaced persons, and workers engaged in socioeconomic development projects has contributed to increases in the incidence and spread of the disease. Transmission is concentrated in areas where humans come into close contact with the anopheline vectors. In general, malaria mainly affects territories in or adjacent to the Amazon Basin in Brazil and the surrounding countries of Bolivia, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, and Venezuela. These areas share similar geographic and ecological characteristics, as well as risk factors related to socioeconomic development, such as migration and land colonization for the extension of the agricultural frontier; road building; and stock raising, mining, and urban development projects.

The number of cases of malaria reported by the countries increased steadily during the period 1985–1988. The figure of 910,917 recorded cases in 1985 was surpassed by totals of 1,018,864 cases in 1987 and 1,100,330 in 1988. The reported cases correspond to those diagnosed by microscopic examination in the malaria control programs. Even though diagnosis is limited by the failure of many health sector institutions to participate in microscopic diagnosis and the inability of some malaria control programs to offer this service, the annual increase in reported cases confirms that the problem is on the rise.

The population of the Region of the Americas increased from 400.5 million in 1960 to 703.3 million in 1988, and the estimated population at risk of contracting malaria went from 143.6 million (30.0% of the total) in 1960 to 280.7 million (39.0% of the total) in 1988.

Approximately 9.8 million parasitoscopic thick blood film examinations have been carried out in the Region each year since 1985. The percentage of the blood samples containing plasmodia increased from 9.6% in 1985 to 11.4% in 1988. Morbidity in malarious areas rose from 350.9 per 100,000 population in 1965 to 391.9 in 1988.

The predominant parasite species in the Americas is *P. vivax,* which every year is responsible for around 64% of the confirmed infections. *P. falciparum* and *P. vivax* mixed infections account for most of the remaining 36%. *P. malariae,* while producing a very small proportion of cases compared to the other species, increased in frequency from 95 confirmed infections in 1985 to 233 in 1988. In this last year, *P. vivax* predominated in the countries of the Central American Isthmus (95.7% of the cases) and in Mexico (99.9%), while *P. falciparum* was the most frequently diagnosed species in Haiti and the Dominican Republic (nearly 100%), as well as in Guyana, French Guiana, and Suriname (69.4%). In Brazil, *P. falciparum* accounted for a little more than half (51.4%) of the cases reported in 1988 (559,535), and in Colombia and Venezuela it was responsible for about one-third of the cases (32.8% and 30.5%, respectively).

Mortality due to malaria is not recorded in all the countries, nor is the diagnosis always confirmed in the laboratory. Table 61 gives the partial information received from some of the countries in the last six years.

Neighboring countries share certain ecological conditions and history, as well as idiosyncrasies, culture, and customs among their peoples, that influence the transmission of malaria. In addition, territorial contiguity facilitates the exchange of human carriers and anopheline vectors, aggravating the problem in common border

[38]Annual parasite incidence: "Number (per thousand of a population) of microscopically confirmed cases of malaria registered in one year." World Health Organization, *Terminology of Malaria and of Malaria Eradication* (Geneva, 1963).

TABLE 61

Mortality due to malaria, by country, 1983–1988.

Country	1983	1984	1985	1986	1987	1988
Bolivia[a]	...	...	...	...	7	16
Brazil	815	897	940	1,048	...	...
Dominican Republic[a]	2	6	...	...	9	9
Ecuador	67	81	64[b]	...	...	...
El Salvador	103	63	...	...	...	...
Guatemala	681	240	200	303	250	...
Guyana	...	...	2[a]	10[c]	32[d]	35
Haiti	...	...	...	37	22	117
Nicaragua	12	12	21	13	20	21
Panama	—	—	2	—	—	—
Paraguay	—	—	1	—	1	—
Suriname[a]	5	2	1	3	1	1
Venezuela[a]	14	22	12	15	23	...
Total	1,699	1,323	1,243	1,429	365	199

[a]Confirmed cases.
[b]Only 59 confirmed cases.
[c]Only two confirmed cases.
[d]Only 30 confirmed cases.

areas. A summary of the malaria situation in the Americas, by geographic subregion, is given below.

Malaria Situation by Subregions

North America. In this subregion, which includes Canada, the United States of America, and Mexico, malaria is endemic only in Mexico. In Canada, 184 cases of malaria imported from other countries were discovered in 1988, and in the United States (including Puerto Rico and the Virgin Islands) there were 870 cases, also imported. Mexico reported 116,238 cases, of which only 141 were caused by *P. falciparum* and 11 by mixed infections; the remainder were due to *P. vivax*. The incidence in Mexico is 262.9 cases per 100,000 population in the malarious area.

Caribbean. This subregion includes, among other countries, the Bahamas, Barbados, Bermuda, Cayman Islands, Cuba, Dominica, the Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Saint Lucia, and Trinidad and Tobago. Except in Haiti and the Dominican Republic, which share the island of Hispaniola, malaria transmission does not occur in this subregion, either because the countries have managed to interrupt it or because it never existed. In 1988 the epidemiological surveillance services in those countries without transmission reported 854 imported cases: 824 in Cuba, 17 in the Bahamas, 8 in Trinidad and Tobago, 4 in Jamaica, and 1 in Barbados.

In 1988, Haiti and the Dominican Republic together reported 13,378 cases (12,306 in Haiti and 1,072 in the Dominican Republic), representing 1.2% of the cases in the Region. The species involved was almost exclusively *P. falciparum,* although the Dominican Republic reported eight cases of *P. vivax* infection and one of mixed infection. In these two countries the malaria situation has stabilized, and the number of cases has varied between 17,478 in 1985 and 13,378 in 1988.

Central American Isthmus. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama together have 18.9 million inhabitants living in malarious areas, or 6.7% of the entire malarious-area population in the Americas. The 129,181 cases reported in this subregion in 1988 represented 11.7% of the total reported in the Region. The large majority of the cases (89%) occurred, in descending order, in Guatemala, Nicaragua, and Honduras. The predominant species in the subregion is *P. vivax* (95.7%). *P. falciparum* was responsible for 7.6% of the cases in Nicaragua and half this percentage in Guatemala and Belize. Between 1985 and 1987, the disease generally tended to decline in the subregion, but in 1988 it increased by 15.4% over the levels of 1987 as a result of rises in Nicaragua (94.3%), Honduras (55.7%), and Costa Rica (15.0%). The fewest cases have occurred in Panama and Costa Rica, both during the last four years (3,381 in Panama and 3,423 in Costa Rica) and in 1988 (1,000 in Panama and 1,016 in Costa Rica). Epidemic outbreaks were experienced in Costa Rica in 1983 and in Panama in 1986 due to the presence of imported cases in areas where transmission had previously been interrupted. In El Salvador there were almost 96,000 cases in 1980, but the number has steadily declined since then, to only 9,095 cases in 1988.

Andean Area. Bolivia, Colombia, Ecuador, Peru, and Venezuela together have a population of 88.9 million, of which 50.9 million (57.2%) live in areas where malaria was originally endemic. In 1988 these five countries reported 235,191 cases of malaria, representing 21.4% of all the cases in the Americas. Almost half these cases occurred in Colombia (100,850), followed in order by Ecuador (53,607), Peru (32,359), and Bolivia (22,258). As of August 1988 Venezuela had reported 26,117 cases, but it was estimated that the number of cases for the entire year could reach 46,200, which would be triple the number reported in 1985 and 1986. The predominant species in the subregion is *P. vivax* (76.0%), although *P. falciparum* produced nearly one-third of the

infections in Colombia (32.8%) and Venezuela (30.5%), 25.3% of infections in Ecuador, and 6.6% in Bolivia. In Peru there were no reported cases of *P. falciparum* infection, but 148 cases produced by *P. malariae*. Infections associated with this last species were also reported in Colombia (55) and Venezuela (13 as of August 1988). In general, the Andean Area experienced a slight rise in the disease between 1985 (188,465 cases) and 1988 (235,191 cases), owing mainly to increases in Colombia (from 55,791 cases in 1985 to 100,850 in 1988) and Venezuela (from 14,305 cases in 1985 to 26,117 cases as of August 1988). Except in Peru, there is evidence in the subregion of *P. falciparum* infections resistant to antimalarial drugs, and Bolivia and Venezuela have reported mortality attributed to malaria. No reports of malaria deaths have been received from Colombia or Ecuador in the last three years, but presumably they have occurred. Sociopolitical, administrative, and financial problems have afflicted several of the countries to a similar intensity and extent.

Guyana, Suriname, and French Guiana. In previous decades, this group of countries had made progress in interrupting the transmission of malaria in Atlantic coastal lands. However, the disease has remained endemic in the moist tropical jungle of the interior. Human migration in recent years has brought carriers and susceptible individuals together, which has favored the reestablishment or exacerbation of transmission. As a result, there was an eightfold increase in the number of cases in these three countries between 1983 (5,096 cases) and 1988 (41,349 cases). Guyana was the country most affected in 1988, with 35,470 cases, which equals a rate of 4,654.9 per 100,000 population. In Suriname the rate was 909.1 cases per 100,000 inhabitants, and in French Guiana it was 3,664.4 per 100,000. On average, 70% of the cases were due to *P. falciparum* (85.2% in Suriname, 71.6% in French Guiana, and 68.0% in Guyana). Resistance of *P. falciparum* infections to antimalarial drugs was reported, as was mortality attributed to malaria. Guyana has recorded an increasing number of such deaths: 2 in 1985, 10 in 1986, 32 in 1987, and 35 in 1988. Suriname reported five in 1983, two in 1984, one in 1985, three in 1986, and one in 1987 (Table 61). Factors of an administrative, political, and social nature have hampered control efforts. In French Guiana the presence of imported cases has contributed to the rise in transmission.

Brazil. The different epidemiological situations created by Brazil's diverse geographic, ecological, demographic, and socioeconomic characteristics have a bearing on the current malaria situation. The country's vast land area (more than 8.5 million km^2, of which almost 7 million km^2 were originally malarious and 5 million km^2 are in the Amazon Region) gives rise to various geoecological environments. The total population in 1988 was estimated at 146.1 million, of which 65.0 million (44.5%) live in originally malarious areas. Of this latter group, 43.2 million, or 66.5%, live in areas where transmission of the disease has been interrupted; the remaining 21.8 million (33.5%) live in areas where transmission persists.

In 1988 a total of 559,535 cases were reported—that is, slightly more than half (50.8%) of all the cases in the Region among a population representing 23.1% of the entire malarious-area population in the Americas. Only 14,837 of these cases (2.6%) were reported from areas in which transmission has been interrupted (which, as mentioned above, contain two-thirds of the population of originally malarious areas). Most of these 14,837 cases were from the Amazon Region. On the other hand, a total of 544,698 cases (97.4%) were reported from places where transmission continues, which contain only one-third of the population of originally malarious areas. The problem is most intense where humans and mosquitoes come into close and frequent contact due to social, demographic, and cultural factors arising from the country's economic development policy. For example, in the Amazon Region, six municipalities in Rondônia produced 80% of the malaria cases in that state, which by itself has 45% of all the cases in the country. Rondônia, Pará, and Maranhão account for 80% of the cases in Brazil.

P. falciparum and *P. vivax* are equally represented, with a slight predominance of the former (*P. falciparum*, 51.4%; *P. vivax*, 48.6%). *P. falciparum* resistance to antimalarial drugs has been found, and there is mortality attributable to malaria. Information on these deaths has not been received in the last two years, but 1,048 deaths from malaria were reported in 1986. The general trend has been a continuous increase in the disease since 1975, when 88,630 cases were recorded.

Southern Cone. In this subregion, consisting of Argentina, Chile, Paraguay, and Uruguay, malaria is endemic only in Paraguay and in a small area of northern Argentina near the border with Paraguay and Bolivia. Chile and Uruguay reported no cases. In Argentina there were 666 cases, or less than half the number recorded in 1986 (2,000) and 1987 (1,521), indicating that the situation has improved. The figure of 2,884 cases reported in Paraguay in 1988 also represents an improvement, and in that country there has been a steady annual reduction since 1985, when 4,568 cases occurred.

Prevention and Control

The principal malaria prevention and control activities are those related to the diagnosis and treatment of malaria patients and to the control of the anopheline vectors, in

both their adult and their larval stages, through the application of insecticides and other supplementary control measures.

In 1988, the 21 countries with active malaria programs reported that their services had examined 8.8 million blood samples for diagnosis of the disease and had used 77.5 million tablets of various antimalarial drugs, singly or in combination, for the presumptive and radical treatment of patients and for collective or selective medication of the population.

DDT continues to be the most widely used insecticide. In 1988 a total of 4,476,822 household sprayings were performed, giving protection to 18,394,629 inhabitants. Other insecticides were also used, such as fenitrothion, bendiocarb, malathion, deltamethrin, and propoxur.

Supplementary measures aimed at the integrated control of malaria, based on the epidemiological risk approach at the local level, were increasingly applied in some countries. Such measures include the application of larvicides at anopheline breeding sites, the space-spraying of insecticides as a supplement to household spraying, more extensive use of drugs to both collectively and selectively medicate selected population groups in particular localities, the combined use of insecticides and drugs, management of the environment through small- and large-scale sanitary engineering projects, and community participation in prevention and control activities. The sanitary projects are aimed at the reduction of mosquito breeding sites through canal and small water course improvements, swamp draining, and engineering works in rivers to straighten their courses and open their mouths. In El Salvador, in addition to the sanitary engineering works, the diagnosis of malaria has been decentralized, and the community participates in the treatment of patients with short-term therapeutic schemes. The number of localities where larvicides were applied increased in Mexico and Guatemala, and remained the same in 1987 and 1988 in Ecuador and Nicaragua. Collective medication was used in El Salvador, Honduras, Mexico, Paraguay, and Peru.

Difficulties for Malaria Control

Among the principal difficulties in prevention and control in areas where transmission is greatest are inadequate environmental sanitation and poor housing; frequent shortages of financing; insufficient knowledge of vector biology, ecology, and control; and problems associated with extension of agriculture, as well as other sociocultural, economic, and political factors. Despite the countries' efforts to control the disease in all the malarious areas, a considerable proportion of the population at risk did not receive any kind of protection against malaria (Table 62).

TABLE 62

Population (in thousands) at risk of contracting malaria and not protected by any specific antimalarial action, by causes, 1987 and 1988.

Causes	1987	1988
Lack of resources	14,104	14,200
Sociopolitical problems	1,345	3,897
Difficult access	69	145
Migratory population	46	80
Total	15,563	18,323

Research

Several of the countries of the Region, including Brazil, Colombia, Peru, Mexico, and Venezuela, carry out research on malaria and other tropical diseases.

In the United States of America, work continued on the development of a malaria vaccine. Phase I testing was conducted on vaccines based on synthetic peptides or *Escherichia coli*-expressed antigens. In both cases the immunizing material is designed to protect against infection produced by the sporozoites injected by a mosquito. The vaccine has not had any significant side effects in volunteers who have received it, but neither has it conclusively been shown to protect the volunteers when they were inoculated with *P. falciparum*. In Colombia important progress was made in the use of a mixture of several peptides to inhibit reproduction of the erythrocytic forms of plasmodia in humans.

Tests using DNA probes for malaria diagnosis in lieu of thick blood films have been encouraging, and non-radioactive probes are already being introduced, which may facilitate work in the field. In addition, in the United States a method for the rapid diagnosis of malaria using capillary tubes and acridine orange was improved. This method has been used in Haiti and has been shown to be approximately as sensitive as a thick blood film, but its drawbacks are that it does not permit identification of the parasite species and that it requires specialized equipment, limiting its usefulness in the field.

In Brazil, Colombia, and Honduras, diagnosis of plasmodia infection in mosquitoes through the use of monoclonal antibodies was initiated. This technique will make possible more definitive identification of the mosquito species involved in transmission.

During the 1985–1988 quadrennium, research was conducted on the socioeconomic aspects of malaria. In Venezuela four health programs under the Ministry of Health and Social Welfare were evaluated, with focus on their principal administrative characteristics, the results

achieved, and the intervention strategies that may have contributed to the social development of the community.

In Colombia research was carried out on health promotion activities, on the utilization of services offered by the malaria control program, and on measures that the community has adopted to prevent infection. Studies were also done on the relationship between malaria and housing, family income, and modes of production. An evaluation was undertaken in Guatemala to determine whether the information obtained through passive case-finding reflects the true incidence of malaria. In the Dominican Republic, research has been done on the relationship between the increased prevalence of malaria and modes of production, migration trends, and social and ecological conditions. In addition, research in Brazil has looked at the role of migration in "agricultural frontier malaria," proposing that the disease and its effects are influenced by political, economic, and social structures (Table 63).

The Epidemiological Risk Approach for Malaria Control

Because the factors that influence malaria transmission are many and complex, the simplistic approach based on control tactics applied broadly throughout the malarious area, without taking into account differing degrees of endemicity, must change. In addition, given the multiple influences on malaria, the political priority that governments assign to the malaria campaign should be mirrored in the strong participation of all the major sectors that are affected: housing, health, education, agriculture, and

TABLE 63

Country and international agency funding for malaria research in the Americas, 1985–1988.

Agency	Amount (in thousands of U.S. dollars)			
	1985	1986	1987	1988
International Development Research Center, Canada[a,b]	38,433[b]	...	...	384,157[b]
Board on Science and Technology for International Development, Institute of Medicine, National Academy of Sciences, USA[a,c]	244,176	228,900	187,604	97,012
National Institute of Allergy and Infectious Diseases, National Institutes of Health, USA[d,e]	5,708,000	5,993,424	6,122,927	6,803,213
Agency for International Development, USA[d,f]	12,500,000	9,900,000	12,000,000	10,000,000
Army[g] and Navy[h], USA	5,220,000	5,225,000	6,176,000	5,973,000
PAHO/WHO[a]	334,500	488,125	741,400	998,803
UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases[a]	1,756,432	1,364,449	1,446,211	1,746,119
Brazil[d]	...	250,000	759,248	50,000
Colombia[d]	...	25,000	80,000	...
Mexico[d]	...	50,000	270,000	339,337

[a]Calendar year 1988.
[b]Canadian dollars. Projects in Brazil, Colombia, and Peru.
[c]Research projects on mosquitoes carried out in Brazil, Colombia (2), Mexico, Peru, and Venezuela.
[d]Fiscal year October 1987 to October 1988.
[e]Funds for institutions in the USA.
[f]Almost all funds for institutions in the USA ($US10 million for vaccines and $US2 million for field testing, diagnosis, and control). Funds were also allocated for projects in other countries, including Peru.
[g]Almost all the funds were for institutions in the USA. Funds were also allocated for projects in other countries, including Brazil.
[h]Almost all the funds were for institutions in the USA. Funds were also allocated for projects in other countries, including Mexico.

mining. The planning of activities to prevent, control, and monitor malaria infections and their consequences should be based on epidemiological knowledge that will make it possible to classify different parts of the malarious area according to the local situation and analyze the risk factors and groups involved. The incorporation of malaria prevention and control activities in local health systems and the encouragement of social participation in these efforts will enable actions to be carried out in an integrated manner that takes advantage of all the human and financial resources available and is based on the local epidemiological situation.

Dengue

Dengue has had a major impact in the Americas, especially during epidemic periods when hundreds of thousands of persons are affected by the disease. The costs due to missed work, medical treatment, and decreased tourism probably amount to hundreds of millions of dollars. The increase in incidence and broad dissemination of classic dengue in the Americas, associated with the circulation of multiple serotypes of dengue virus, contribute to an increased potential for the spread of dengue hemorrhagic fever/dengue shock syndrome (DHF/DSS) in the Region. In this respect, it is noteworthy that cases of DHF have been reported in the Americas practically every year since the Cuban epidemic of DHF/DSS in 1981.

The sharp increase of dengue activity in the Region is mostly due to the proliferation and spread of *Aedes aegypti* populations. Unfortunately, despite the existence of political mandates adopted by the countries of the Americas to eradicate the mosquito, a constellation of difficulties has in fact decreased the effectiveness of vector control programs in the Region. The problem is made apparent by a comparison of the distribution of *Aedes aegypti* in the Americas in 1974 and 1987 (see Figure 19), which clearly demonstrates the extensive dissemination of the vector during that 13-year period. This situation is potentially aggravated by the recent introduction of *Aedes albopictus* in the Americas. This mosquito is considered an accessory dengue vector in Asia. As *Ae. albopictus* can be prevalent in both suburban and sylvatic environments, it could make the control of dengue considerably more difficult; it could also become an efficient link between the jungle and urban epidemiological cycles of yellow fever. Established infestations of *Ae. albopictus* are known to be present in Brazil and the United States of America. Other factors that are contributing to the increase of dengue activity in the Region are the rapid growth and urbanization of populations in tropical areas and the increased frequency and extent of human travel.

In the future, immunization against dengue may become an important tool in preventing infection. Great efforts are being made to develop dengue vaccines; however, it may be several years before an efficacious vaccine is available for general use. Meanwhile, vector control measures remain the principal tool in efforts to prevent dengue infection.

Dengue circulation in the Americas during the 1980s manifested either as explosive and severe epidemics or as small epidemics; in certain circumstances, however, it was relatively silent. Undoubtedly, the most significant epidemic of the decade was the DHF/DSS outbreak due to dengue-2 in Cuba in 1981, which caused the greatest human impact ever observed in the history of dengue in the Americas. Only dengue virus serotypes 1, 2, and 4 were recovered from indigenous cases in the Americas during the 1980s. Dengue-4 was introduced in the Region in 1981, probably from French Polynesia. After causing a series of outbreaks in the Caribbean, Central America, Mexico, and northern South America, particularly during 1981–1983, dengue-4 became endemic in the Region. Illness associated with dengue-4 has been self-limited and usually mild. From 1984 through mid-1988, most dengue outbreaks were associated with dengue-1, and large and extensive outbreaks of classic dengue associated with this serotype occurred in several countries, including Aruba, Bolivia, Brazil, Ecuador, Mexico, and Nicaragua.

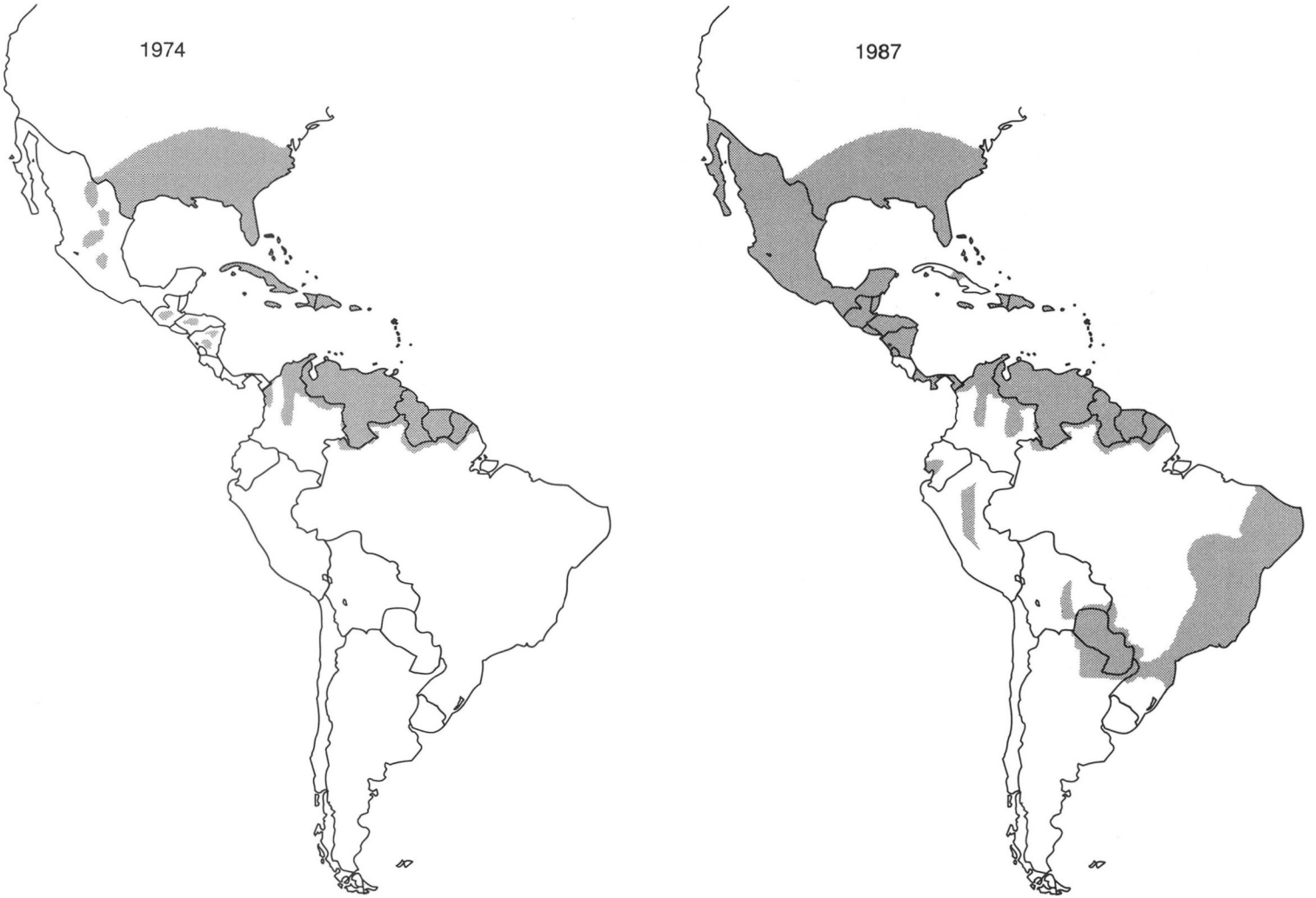
Table 64 presents the number of dengue cases reported annually during the period 1980–1987. The increase of dengue activity in 1985 was mainly due to epidemics in Aruba and Nicaragua, which together contributed just over 60% of the cases reported in that year. During the two subsequent years, extensive epidemics in Brazil were responsible for the high number of reports, and this country alone contributed 53.1% and 69.4% of the cases notified during 1986 and 1987, respectively.

Indigenous dengue transmission in the continental United States of America during the 1980s was documented in Texas in 1980 and 1986. About 50 autochthonous cases were reported in those two years; the infections were associated with the dengue-1 serotype. Apart from these, all dengue cases reported in the United States during the 1980s were imported cases. Most of the latter patients had traveled to the Caribbean, but there were also confirmed cases in persons who had visited Central America, Africa, and Asia.

Mexico experienced several epidemics of dengue during the 1980s. From 1983 to 1986, virological data demonstrated the circulation of dengue serotypes 1, 2, and 4; in 1987 only dengue-1 was isolated. Dengue outbreaks occurred in cities and suburban areas throughout Mexico, and 24 of the 32 Mexican states were affected. The intensity of these outbreaks varied in different years, and

FIGURE 19

Geographic distribution of *Aedes aegypti* in the Americas, 1974 and 1987.



The *Aedes aegypti* house index in Cuba in 1987 was below 0.1%.

In Argentina *Aedes aegypti* has recently been found in the provinces of Formosa and Misiones, but it was eliminated from the latter province. (Ministry of Health, Argentina, 1988)

Source: PAHO (1989).

TABLE 64

Reported cases of dengue and serotypes, by country, 1980–1987.

Subregion/country	1980	1981	1982	1983	1984	1985	1986	1987
Total	66,889	385,502	55,054	46,298	38,965	69,010	89,145	128,769
Latin America								
Bolivia	—	—	—	—	—	—	—	1,994 (1)
Colombia	9,894 (1,2)[a]	7,790 (1)	6,790 (1,2,4)	14,081 (1,2,4)	7,540 (1,4)	7,797 (1,2)	6,048 (1,2)	17,538 (1,2,4)
Venezuela	...	... (1)	...	...	... (1,2)	... (1,2,4)	... (1,2,4)	58 (2,4)
Brazil	—	—	... (1,4)	—	—	—	47,370 (1)	89,394 (1)
Central America								
Belize	4	9	482	26	137 (1)	...	1	...
El Salvador	2,055	5,170	5,095 (4)	3,814 (4)	560	425	916	2,836 (1,2,4)
Guatemala	30	104	33	2	—	—	—	2,318 (1)
Honduras	2,078	1,612	1,217	729 (1)	378 (1,2)	307 (4)	569 (1,2)	261 (1,4)
Nicaragua	...	...	...	...	...	17,483 (1,2)	484	87
Mexico	51,398	17,046 (1)	30,904 (1,2)	23,510 (1,2,4)	27,312 (1,2,4)	16,182 (1,2,4)	21,975 (1,2,4)	7,698 (1)
Latin Caribbean								
Cuba	169 (1)	344,203 (2)	...	...	...	...	...	
Dominican Republic	54	619	435 (4)	538 (4)	260 (1,4)	92 (2,4)	6 (1,2,4)	20 (1,2,4)
Haiti	255	44 (4)	211 (1)	483 (1)	328 (1,2)	20 (2)	... (1)	...
Puerto Rico	921 (1)	8,350 (1,4)	9,536 (1,4)	2,789 (4)	1,865 (1,2)	2,376 (1,2,4)	10,659 (1,2,4)	5,835 (1,2,4)
Caribbean								
Aruba	—	—	—	...	...	24,000 (1)[b]	—	—
Barbados	...	6 (1)	99 (1,4)	63 (4)	63	...	...	78 (2)
Bonaire	...	...	...	...	...	6 (1)	...	...
French Guiana	...	... (1)	... (4)	...	...	...	229 (2)	...
Guadeloupe	—	—	...	...	339	216	120	344
Martinique	—	—	... (4)	...	...	...	—	—
Jamaica	9	47 (2,4)	21 (2,4)	26 (2,4)	12 (2)	3	3	3 (2)
Saint Martin	—	—	—	—		2 (2)	—	—
Suriname	...	22 (1)	25 (1,4)	...	...	...	54 (2)	1 (2)
Trinidad	...	14 (1,2,4)	16 (1,2,4)	118 (2,4)	31 (1,4)	7 (1,2)	145 (2)	125 (2)
Virgin Islands (USA)	...	127 (1,4)	2 (1,4)	1	73 (1)	43 (1)	74 (2)	77 (1,2,4)
Other Caribbean Islands[c]	7	138 (1,4)	44 (1,2)	11	4	3 (2)	170	7
North America								
United States[d]	15	201 (1,4)	144 (1,2,4)	107 (1,2,3,4)	63 (1,3)	48 (1,4)	322 (1,2,4)	95 (1,3)

[a]Virus serotypes in parentheses.
[b]Data estimated.
[c]Includes Anquilla, Antiqua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines.
[d]Includes imported cases.
Sources: Country reports to PAHO. The data from the U.S.A., Puerto Rico, the Virgin Islands, Aruba, Bonaire, St. Martin, and French Guiana were obtained from Dengue Surveillance Summary, San Juan Laboratories, CDC, Puerto Rico. The source of the data from Colombia, 1981–1984, was Boshell, J. et al., Dengue in Colombia, Biomedica 6(3 and 4):101–106, 1986 (figures reported to the Ministry of Health, Colombia). The source of the data from the Dominican Republic, 1981, was CAREC's Review of Communicable Diseases in the Caribbean, 1982.

most of them were associated with dengue type 1. Interestingly, since 1986 dengue transmission in Oaxaca and Puebla has been documented at altitudes higher than 1,200 meters. Most of the illness in Mexico has been of the classic dengue fever type, although eight cases of hemorrhagic dengue associated with dengue-4 infection were reported in 1984.

A major epidemic occurred in Nicaragua in 1985, with two periods of dengue activity. The initial wave was observed in the first part of the year, and only dengue-1 was isolated at that time. Virus activity reappeared in August, at which time both dengue-1 and -2 were recovered from cases, although the majority of isolates were dengue-1. A total of 17,483 cases, which included some fatalities, were notified by Nicaragua in 1985. In El Salvador, after a period of relative quiescence from 1984 to 1986, an outbreak of dengue illness was reported during the second half of 1987. It was associated with dengue types 1, 2, and 4, although the last serotype was the most frequently isolated. In Honduras both dengue-1 and -2 were isolated from cases in San Pedro Sula in 1984 and 1986. An outbreak that occurred from May to August 1987

in the southern part of the country is estimated to have caused 8,300 cases in the city of Choluteca, although only 261 cases were officially notified in that year. This outbreak was caused by dengue-4, but dengue-1 was also isolated from febrile cases in northern Honduras. Guatemala did not report any cases during the 1984–1986 period; in 1987, however, several dengue outbreaks occurred in the country, with 2,318 notified cases. Dengue-1 was isolated from a number of patients.

In the Caribbean, a significant outbreak of dengue fever associated with dengue-1 virus occurred in Aruba from November 1984 to March 1985. Data obtained from surveys indicated the occurrence of an estimated 24,000 cases, and two fatalities associated with hemorrhagic dengue and confirmed in the laboratory were documented among members of one family. Apart from this outbreak, no major dengue activity was reported from the Caribbean, although isolations of one or more dengue serotypes were obtained from cases on other islands. In Trinidad, for instance, dengue-2 virus was recovered from patients every year from 1981 through 1987 (except 1984), and during 1986 a particularly large number of isolates was obtained. Evidence of circulation of dengue-2 in Jamaica has been documented by virus isolation during the 1981–1984 period and in 1987. In Barbados, 15 strains of dengue-2 were isolated from febrile patients late in 1987. All three virus serotypes were circulating in the Dominican Republic and in Haiti, but small numbers of dengue cases were reported by those two countries. In contrast, the number of cases reported from Puerto Rico varied from 921 in 1980 to 10,659 in 1986 (Table 64), and infections there have been associated with all three dengue serotypes. These high figures probably reflect the active laboratory-supported surveillance carried out in Puerto Rico. Although most cases were of classic dengue, cases of DHF/DSS were also recorded in Puerto Rico, particularly during 1986–1987.

Endemic dengue virus circulation continued to be observed in northern South America. All three serotypes were detected in Colombia, Venezuela, and Suriname. Dengue-2 and dengue-4 were also reported in French Guiana. Several outbreaks occurred in Colombia, Suriname, and Venezuela, but case reports came almost exclusively from Colombia (Table 64). A small outbreak of dengue occurred in Caracas, Venezuela, in 1987; it was associated with dengue-2 and dengue-4, but predominantly with serotype 2.

In 1986–1987 Brazil suffered extensive outbreaks due to dengue-1 (Table 64). The first and largest outbreak was recorded in the state of Rio de Janeiro and was recognized in the first semester of 1986. The states of Alagoas and Ceará, located on the northeast coast of the country, were also affected by outbreaks during the same year. After a period of quiescence, the epidemics recrudesced in 1987 in the same states and also entered four new areas in the states of Minas Gerais, Bahia, and São Paulo, three of which were located in the interior of the country. Nearly 140,000 cases of dengue were reported in Brazil during 1986–1987, most of them from Rio de Janeiro State. However, serologic surveys suggest that over one million persons became infected in that state. Intensive vector control efforts were implemented, and by the end of 1987 most dengue activity in Brazil had ceased. Only 97 cases were reported in the first half of 1988.

In Bolivia an epidemic of dengue-1 occurred between December 1987 and March 1988 and affected the departments of Santa Cruz and Tarija, particularly the city of Santa Cruz. A total of 6,861 cases were notified during those months (1,994 cases in 1987). Estimates based on house-to-house surveys suggest that some 125,000 persons developed dengue-like illness in the city of Santa Cruz, 23,000 persons in nearby rural areas, and 4,000 persons in the village of Villamontes, Tarija Department.

The outbreaks in Ecuador and Paraguay were recorded in the first half of 1988. Dengue-1 virus was isolated from several patients in both countries. In Ecuador, the city of Guayaquil was the main epidemic site, and most cases occurred from March through May. By late May the epidemic was practically over. A random serologic survey for detection of anti-dengue IgM antibody conducted in eight of Guayaquil's 14 *parroquias* (parishes) revealed attack rates that ranged from 7% to 57% in different *parroquias*. Based on these data, it was estimated that about 422,000 dengue infections occurred in Guayaquil. Clinically, the illness in Guayaquil was rather mild classic dengue fever, and none of the severe cases reported, which included some deaths, were confirmed as dengue. In Paraguay the outbreak apparently was not explosive, and it was rapidly brought under control through the prompt implementation of vector control measures. A total of 396 cases were reported from March to June 1988 by the Ministry of Health.

Increase of DHF/DSS Cases in the Americas. Since the Cuban outbreak in 1981, confirmed or suspected cases of DHF have been reported in the Americas every year except 1983 (Table 65). Nine countries or territories reported cases of DHF/DSS occurring among both children and adults. All cases notified by Aruba, Brazil, Colombia, and Nicaragua were among adults and were fatal. Most cases in Puerto Rico were in children under 15 years of age, and the case in Saint Lucia was in a 6-year-old child. The cases from Suriname occurred during an outbreak of dengue-1. They were three males over the age of 45 years who had serologic evidence of unspecified dengue infection. All three developed shock without hemorrhagic manifestations, although all had thrombocytopenia

TABLE 65

Confirmed or suspected cases of DHF/DSS in the Americas, 1982–1987.

Country	Year	Virus	No. of cases	Remarks
Suriname	1982	D1[a]	3	Over 45 years old; shock; no hemorrhages. Hemoconcentration and thrombocytopenia.
Mexico	1984	D4	8	Hemorrhages. Four deaths. Three isolations of dengue-4, and five cases positive by IgM ELISA or HI + CF.
Aruba	1985	D1	2	Hemorrhages. Renal failure. Death. Virus isolated in one case and dengue antigen detected in another.[b]
Nicaragua	1985	D1	7	All fatal. One case proved by dengue-1 isolation.
Colombia	1985	[a]	1	Fatal. Hemorrhage, jaundice. Did not meet WHO criteria for DHF.
Puerto Rico[c]	1985–87	D1/D2/D4	48	DHF/DSS. Four deaths. Confirmation by virus isolation or serology.
Brazil	1986–87	D1	4	Hemorrhages, shock, death. Virus isolated or viral antigen detected.[b]
Saint Lucia	1986	[a]	1	Hemorrhages, thrombocytopenia, hemoconcentration.
El Salvador	1987	D1/D2/D4[a]	88	Only a few cases serologically confirmed. One fatal case which apparently met WHO criteria for DHF.

[a]Serologic diagnosis only.
[b]Dengue antigen detection in Aruban and Brazilian cases was done at the Armed Forces Institute of Pathology, Washington, D.C., or at the U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland.
[c]Two cases in 1985 (D1, D2), 21 in 1986 (D2, D4), and 25 in 1987 (D1, D2) that fulfilled WHO's criteria for DHF, all confirmed by virus isolation or serology. Many other suspected but without clinical/laboratory data. Data for 1987 are tentative (Gubler, D.J., personal communication, 1988).

and hemoconcentration; one died a month later from bleeding of esophageal varices. During an epidemic of dengue-4 in Mérida, Mexico, in 1984, in which over 5,390 cases were notified, there were nine reported cases of hemorrhagic disease, four of which had a fatal outcome. Eight (including the four fatalities) were confirmed in the laboratory as dengue, three by virus isolation and five by serology. Only one patient met WHO's criteria for DHF. The cases in Aruba occurred in two adult siblings who manifested a hemorrhagic disease and died. Diffuse acute liver necrosis was observed in both patients, and from one of them dengue-1 virus was isolated. All seven cases from Nicaragua occurred among adults, and dengue-1 virus was isolated from one of them. The patient from Colombia was a 19-year-old male who presented fever, jaundice, skin and internal hemorrhages, and hepatosplenomegaly, and subsequently died. A secondary serologic reaction to dengue antigen was detected by hemagglutination inhibition (HI) and IgM antibody capture enzyme-linked immunosorbent assay (MACELISA), but clinically the case did not fulfill WHO criteria for DHF.

The Brazilian cases were persons over 15 years of age who developed hemorrhages and shock and died; dengue-1 virus was isolated or dengue antigen was detected from organs of these patients. The case in Saint Lucia was a 6-year-old girl who developed severe hemorrhagic disease, thrombocytopenia, and hemoconcentration. The diagnosis was made serologically and the infecting serotype was not determined. The cases from El Salvador were diagnosed on clinical grounds and only a few were serologically confirmed as dengue; the fatal case was said to fulfill WHO criteria for DHF. Of the 48 cases of DHF documented in Puerto Rico during 1985–1987, 46 occurred in 1986 and 1987 (Gubler, D. J., personal communication). All these cases met WHO criteria for DHF. Most cases occurred among patients under 14 years of age; four were fatal. The two cases in 1985 were proven by virus isolation, one being a strain of dengue-1 and the other a strain of dengue-2. Of the 21 cases notified in 1986, 6 were diagnosed by virus isolation (three isolates each of dengue-2 and dengue-4) and the remaining cases by serology. The 1987 cases were associated with infec-

tions due to serotypes 1 and 2. It should be noted that there were many more cases of hemorrhagic disease observed in Puerto Rico that were clinically compatible with DHF but for which no adequate clinical and/or laboratory data for diagnostic confirmation were obtained.

Yellow Fever

Jungle yellow fever in the Americas continues to affect mainly four countries: Bolivia, Brazil, Colombia, and Peru. Occasionally, cases of the disease are reported in Ecuador, Trinidad and Tobago, and Venezuela. No cases of urban yellow fever have been recorded on the South American continent since 1942, and the last outbreak of yellow fever in a large city occurred in Rio de Janeiro in 1928 and 1929. Cases of urban yellow fever may have occurred in Trinidad and Tobago in 1954. The risk of urbanization of the disease remains, due to the increase and dissemination of *Aedes aegypti* populations in urban centers, some of which are near enzootic areas of yellow fever. This situation is potentially aggravated by the recent introduction in Brazil of *Aedes albopictus*, a vector that—due to its habitat choices—could serve as a bridge between the jungle and urban cycles of yellow fever.

A total of 754 cases were reported by five countries during the period 1985–1988 (Table 66). This figure represents an increase of 238 cases (46.1%) over the preceding four-year period. About 85% of the cases were fatal. It is noteworthy that 88.2% of the cases were reported by Bolivia and Peru, particularly the latter country. In the previous quadrennium these two countries were responsible for 74.6% of the notifications, but more of the cases were from Bolivia. The official figure probably underestimates the magnitude of the problem, since it mostly includes fatal cases detected by viscerotomy.

Most cases of sylvatic yellow fever continue to occur among males 15–45 years of age. In certain outbreaks, however, children under 10 years old are also affected.

TABLE 66

Reported cases of yellow fever, by country, 1981–1988.

Country	1981	1982	1983	1984	1985	1986	1987	1988
Bolivia	102	95	11	5	53	26	23	12
Brazil	22	24	6	45	7	9	16	21
Colombia	7	2	1	16	5	6	17	7
Ecuador	2	—	5	1	1	—	—	—
Peru	98	19	27	28	59	118	179	195
Total	231	140	50	95	125	159	235	235

Migratory laborers recruited from nonendemic areas to work in enzootic areas of yellow fever comprise most of the victims, particularly in Bolivia and Peru. The disease occurs at highest frequency during the late rainy season when *Haemagogus* mosquito population densities are high and people are engaged in clearing forests in preparation for planting.

Surveillance of yellow fever in humans relies almost entirely upon a passive system of collection of liver samples from fatal cases for histopathologic examination. Surveillance of monkey populations is conducted in some areas, but this procedure is useful only if deaths are found among the monkeys, since yellow fever transmission in nonhuman primates can easily escape detection. The appearance of sylvatic yellow fever in Trinidad and Tobago at the end of 1988 illustrates the importance of recognizing monkey deaths, since that finding led to the investigation that unveiled the presence of virus activity on the island. This prompted the implementation of a vaccination campaign between January and April 1989, during which over 400,000 doses of vaccine were distributed to nearly one-third of the island's population. No human cases of yellow fever were detected in Trinidad and Tobago during this period, despite intensified human surveillance.

A total of 551 yellow fever cases were reported by Peru between 1985 and 1988, which comprised 73.1% of the notifications from the Region during the quadrennium. This figure represents a remarkable increase in reported cases over the preceding four years (1981–1984), when there were 172 notifications. As can be seen in Table 66, the number of cases was relatively stable in Peru from 1982 to 1984. During the subsequent four years, a steady increase in the annual frequency of cases was observed. The virus circulates enzootically in the forests of the eastern part of the country, and human cases have been notified in 11 Peruvian departments. Several urban centers located near or inside the enzootic forests are infested with *Aedes aegypti*; hence, a potential risk exists of urbanization of yellow fever. Since 1988, efforts to increase vaccination coverage have been intensified.

In contrast to the situation in Peru, there was a sharp decrease in yellow fever cases reported in Bolivia during 1985–1988 as compared to the previous quadrennium (Table 66). However, a severe epidemic erupted during the first half of 1989 which mainly affected migratory workers who had settled in forests of Cochabamba Department. A total of 86 cases were reported in this department, of which 85 occurred in Carrasco Province and the other in Chapare Province. An intensive vaccination campaign was initiated and over 270,000 persons were immunized against yellow fever. The variation in the annual incidence of human yellow fever reflects, among other factors, periodicity of viral activity, variation in the

number of exposed individuals, and the level of vaccination coverage.

Brazil and Colombia experienced relatively low levels of yellow fever activity. The number of cases notified in Brazil from 1985 to 1988 dropped to almost half the number of cases reported in the preceding four years (53 versus 97). In Colombia the increase in cases reported in the period 1985–1988 over the previous quadrennium was modest (26 versus 35). A significant event in Brazil was the occurrence of a small outbreak in a rural area of Minas Gerais State located outside the zone considered enzootic. During the period 1986–1988 the number of persons vaccinated annually in Brazil ranged from 4.6 million to 10.5 million. Most of the vaccine was delivered in rural areas, except in 1986, when eight million urban residents, predominantly from cities infested by *Aedes aegypti*, were immunized.

Ecuador reported only one case of yellow fever between 1985 and 1988 (in 1985), whereas eight cases were notified in the preceding quadrennium. The last reports from Venezuela and Trinidad and Tobago were in 1980 and 1979, respectively.

The high number of yellow fever cases among migrant laborers reflects the lack of adequate vaccination coverage. Vaccination is the sole means of preventing sylvatic yellow fever. A single administration of the vaccine induces protection in over 95% of the recipients, and the immunity it confers may last for at least 35 years, although revaccination within 10 years is still required by the International Health Regulations for travelers from endemic areas. In endemic countries the vaccine is delivered in both fixed centers and by mobile teams that periodically immunize residents in enzootic areas. Some of the fixed posts are strategically located along access roads to enzootic areas; however, in some places it has been observed that the migrant workers avoid passing such posts. For this reason, vaccination of these persons in their places of residence may prove to be a more efficient strategy. Priorities for vaccination have been based on surveillance information and risk assessments that take account of ecological and epidemiological factors. Community participation and good public relations are important contributors to the success of vaccination programs.

Efforts continue to be made in Brazil to develop a 17D yellow fever cell culture vaccine, which may prove safer, more effective, and of lower cost than the presently available vaccine produced in embryonated eggs.

Plague

During the last quadrennium, the human plague situation in the Americas reflected the endemicity of wild rodent plague in its natural foci. From 1985 to 1988, PAHO received reports of 438 cases of plague (50% of the number of cases reported during the previous four years) with 42 fatalities, for an overall case fatality rate of 9.6%. It is interesting to note that there is no evidence that the pneumonic form of the disease is occurring in the Region. Bubonic cases of plague were reported from the five countries of the Americas where endemic foci of plague have been active for the last several years (Bolivia, Brazil, Ecuador, Peru, and the United States of America). In Peru, the geographic extension of the infected area contracted significantly following the rather severe outbreak reported in 1984, which expanded to three of the country's northern departments. The cessation of this outbreak in Peru contributed significantly to the decrease in reported cases during the last quadrennium.

The Region of the Americas included five (42%) of the 12 countries reporting plague to the World Health Organization during the last four years. These five countries were responsible for about 12.5% of the total number of plague cases recorded by WHO worldwide. The number of plague cases and fatalities reported to PAHO during 1985 to 1988 by each country is presented in Table 67.

Bolivia continued to identify cases of plague in the Apollo focus of La Paz Department, a relatively new focus that started in 1967 and has produced cases almost annually since that time. The quiescent plague focus in Santa Cruz Department, located in the southeastern part of the country, produced two cases of plague in September–October 1987. These are the first cases recorded from that focus since 1965, indicating that plague is actively circulating in that area.

In Brazil, reported plague cases have shown a decreasing trend during the last four years. Sporadic cases occur throughout the year; however, there appear to be seasonal peaks during the months of February and March and again from September to November. A case-fatality rate of 3% suggests an active national surveillance system which leads to early identification and appropriate treatment of cases.

Ecuador experienced only three cases of plague with two deaths during the last quadrennium. These cases occurred in 1985 in Macara Canton, Loja Province, in the extreme southern section of the country on the border with Peru. They seemed to be associated with the outbreak of plague that appeared in Peru in 1984 and extended northward. The Chimborazo focus has not produced cases during the last four years, following the small outbreak that occurred there in 1983–1984.

In Peru, cases of plague were reported from Cajamarca and Piura Departments during the first quarter of 1985 and only from Piura Department since then. This seems to indicate that the large bubonic plague outbreak of 1984 has subsided and that plague has retrenched into

TABLE 67

Reported plague cases and deaths, by country, 1985–1988.

Country	1985		1986		1987		1988		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Bolivia	—	—	94	15	2	1	2	—	98	16
Brazil	71	2	58	4	44	—	25	—	198	6
Ecuador	3	2	—	—	—	—	—	—	3	2
Peru	44	3	—	—	31	6	10	5	85	14
United States	17	2	10	—	12	2	15	—	54	4
Total	135	9	162	19	89	9	52	5	438	42

its perennial niche in Piura Department. No cases were reported in 1986, but in 1987 and 1988 a total of 41 cases were reported from Piura Department, with a mortality rate of nearly 27%.

Plague cases continued to appear throughout the endemic area of the United States, with cases reported from nine western states. Investigations identified wild rodent epizootics in the proximity of many of these cases.

Review of the information received from the countries indicates that the sporadic cases of plague occurring in Brazil and the United States are probably caused through direct contact with infected wild rodents and their fleas. On the other hand, the small outbreaks occurring in the Andean countries are probably the result of initial contact with infected wild rodents and subsequent human-to-human transmission from the index case via the human flea vector (*Pulex irritans*). This is consistent with the rather explosive, small, frequently familial outbreaks among individuals who attend the *velorio* (funeral wake) of a fatal plague case. It is interesting to note that in the Andean countries the initial case in an area is usually fatal while subsequent cases generally survive. This may be due to delayed reporting, since plague occurs in the very rural areas and some time is required to notify national authorities. Once the authorities are alerted, however, prompt case identification and treatment prevent subsequent fatalities.

Plague in its endemic wild foci is extremely difficult or impossible to eradicate. Under certain conditions, it can rapidly expand to adjacent areas, as evidenced by the outbreak in Peru in 1984. For this reason, it is essential that surveillance for plague be increased and carefully maintained in order to monitor potential expansion of current foci that could result in the invasion of highly populated areas, with disastrous results.

Cholera

The reporting of cholera cases in the Region during the period 1985–1988 followed the same trend as in previous years, with cases occurring exclusively in North America. No deaths were recorded.

In the United States of America, 3 autochthonous cases were found in 1985, 18 in 1986, 6 in 1987, and 7 in 1988. The cases recorded in 1986 and 1987 occurred in the southern part of Louisiana, and epidemiological investigation revealed that prawns and crabs were the vehicles of infection. Notably, five of the 1986 cases were asymptomatic. In addition, 10 imported cases were reported (1 in 1985, 5 in 1986, 2 in 1987, and 2 in 1988), coming from Thailand (1), the Philippines (4), and elsewhere in the Far East (5).

The agent identified in almost all the cases belonged to the same strain as in cases reported previously, namely, *Vibrio cholerae* serovariety 01, biotype El Tor, serotype Inaba. This constitutes additional evidence that this toxigenic strain is endemic in the coastal waters of the Gulf of Mexico and that the microorganism may be present in seafood harvested in these waters at the end of summer and in autumn.

During the period, Canada identified two imported cases, one in 1986 and the other in 1988.

Schistosomiasis

In recent years, the incidence and prevalence of schistosomiasis have decreased in some parts of the Region, while in others this endemic parasitic disease has become more widespread. The latter tendency is due mainly to large-scale hydroelectric and agricultural irrigation proj-

ects, many of which involve the creation of artificial water reservoirs, and to increases in population numbers and massive population movements caused by agricultural or other development projects.

Present evidence indicates that only *Schistosoma mansoni* occurs in the Americas. A better understanding of the local epidemiology of *S. mansoni* has made it apparent in recent years that the distribution of the infection is a dynamic process. In the Caribbean area the parasite extended its range within certain countries and became established on some islands where it had not been reported previously.

Despite the large body of knowledge that has been accumulated, intensified efforts will be needed to halt the current increase in prevalence of the disease in some areas. The control of schistosomiasis and limitation of human contact with water will require an integrated and multisectoral approach to overcome logistic, economic, and cultural problems. The strengthening of the local health systems, as a part of the primary health care strategy, must provide the context for these efforts.

The current status of the disease in continental South America and the Caribbean area is outlined below.

Brazil. This country constitutes one of the major endemic areas of *S. mansoni* in the world. Recent estimates (1988) indicate that at least 25 million inhabitants out of an estimated total population of 91.5 million are at risk in the endemic areas or foci in the states of Pará, Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, Paraná, Santa Catarina, and Distrito Federal. The Schistosomiasis Division of the Superintendency of Public Health Campaigns (SUCAM) is currently active in these 16 states.

Important foci also exist in São Paulo, where the Superintendency of Control of Endemias (SUCEN) of the Secretariat of Health of São Paulo State has responsibility. In the past, some autochthonous cases have been reported in the states of Goiás (Goiânia) and, more recently, Mato Grosso. The Special Program for Schistosomiasis Control, initiated in 1976, was transformed into a regular program of SUCAM in 1980, and now is known as the Schistosomiasis Control Program (PCE).

It would appear from the limited data available that the implementation of the PCE has resulted in a decrease of 62.3% in the prevalence rate in the northeastern part of Brazil (from 25.2% in 1976 to 9.5%, on average). The Northeast is characterized by great diversity in vegetation, climate, and land use, and at least eight patterns of agrarian activity can be differentiated in the region.

An in-depth review of PCE was conducted in 1986–1987, which included analysis of the results of the previous program since 1976 and a document produced in 1986 by DECEN indicating norms and policies for PCE development. As a result, the main objective of the program became the standardization of the methodology to be applied by all the Regional Directorates of SUCAM in order to facilitate the comparative analysis of the results during annual evaluations.

In addition to the general measures established through SUCAM and the permanent health services for specific treatment of all the clinical cases and for the improvement of environmental conditions in endemic areas, other relevant activities are to be implemented in the coming years. Two of the more important of these health interventions are reducing fecal contamination of the soil, thereby avoiding snail infection by reducing the number of viable eggs in the soil; and bringing about a change in the habits of the populations living in endemic areas in order to promote the application of appropriate interventions that can be conducted by the people themselves to interrupt transmission. Efforts to attain the above-described objectives will include malacological studies, stool examinations, specific chemotherapy, snail control, and health education.

The activities of the Regional Directorates of SUCAM have been divided into those focusing on primary endemic areas (Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, and Minas Gerais), on secondary endemic areas (Maranhão, Ceará, Espírito Santo, and Paraná), and on focal areas (Pará, Piauí, Rio de Janeiro, São Paulo, Santa Catarina, and Distrito Federal). In terms of program development, the three phases identified were preparation, attack, and surveillance/support.

The main program objectives in endemic areas are to reduce and eventually eliminate morbidity, or at least the occurrence of the more severe clinical pictures, and to reduce the prevalence rate below 5% in at least 80% of the affected localities.

In areas of potential endemicity, the aim is to prevent dissemination of the problem from isolated foci and to interrupt transmission in such places. These actions will be complemented by specific epidemiological surveillance of irrigation works or similar development projects, which represent a high risk for the establishment of new foci of transmission.

It was recognized that epidemiological surveillance of areas where the prevalence is below 5% is a critical aspect that should be strengthened with multisectoral participation. This surveillance should include study of the child population at the start of primary school, selective treatment of carriers, compulsory notification of all confirmed cases, routine fecal examinations by the Kato-Katz method for all persons arriving at a new locality, and improved community participation.

A summary of the status of schistosomiasis in Brazil,

Venezuela, and Suriname is presented in Table 68. (The situation in the latter two countries is discussed below in greater detail.) Table 69 shows the prevalence of positive fecal smears in areas of large water developments.

Venezuela. The most recent analysis of the current status of control activities in this country was published in 1987.

Although the disease was first reported in Venezuela in 1906, an organized control program was not established until 1943. The presence of the intermediate host and cases of human infection by *S. mansoni* have been reported since 1938 in the northern and central states of Carabobo, Aragua, Miranda, and the Federal District. The intense research activity promoted and conducted by the Schistosomiasis Control Program (SCP) has revealed a global prevalence of 21.9% in the Caracas valley, 24.8% in Aragua, 10.3% in Miranda, and 9.9% in Carabobo. However, in some villages prevalence was as high as 100%.

In general terms, the basic interventions of the SCP in Venezuela are control of the snail population, prevention of human infection, prevention of snail infection, specific chemotherapy, and health education.

Different substances have been used to control the snail population: copper sulfate in 1947, sodium pentachlorophenolate in 1951, copper pentachlorophenolate in 1953, N-tritylmorpholine (Frescon) in 1964, and niclosamide (Bayluscide) in 1974.

Specific chemotherapy began in 1954, when lucanthone was introduced, and 15,000 individuals were treated during a period of 16 years. In 1970 hycanthone was considered an important development, and 3,073 patients had been treated with it up to 1975. Its use was interrupted when toxicity was demonstrated in patients in other countries, forcing the SCP to cancel regular administration of the drug. In 1975 oxamniquine, effective in a single oral dose, represented a great advance, and to date 1,500 patients have been treated with it. The use of praziquantel was initiated in 1980 in trials to compare its effectiveness with that of oxamniquine. It was reported in 1987 that praziquantel had been used to treat only 600 patients up to that time.

At present the endemic areas in Venezuela comprise

TABLE 68

Status of schistosomiasis in Brazil, Suriname, and Venezuela, 1984–1988.

Country	Total population (millions)		Endemic area (km^2)	Population at risk (millions)		Prevalence (%)				
	1984	1985		1984	1988	1984	1985	1986	1987	1988
Brazil	146	150	85,421	30	25	8.5	7.8	7.3	6.5	6.0
Suriname	342[a]	395[a]	1,200	34[a]	—	—	—	—	10	10
Venezuela	15	18.7	15,000	5.1	6.5	0.6	0.5	0.6	0.9	0.3

[a]In thousands.

Sources: Bundy, D.A.P. The Current Status of Schistosomiasis in the Caribbean Region: Endemic Areas and Areas at Risk. PNSP/87-21. PAHO, 1987; and Incani, R.N. The Venezuelan experience in the control of *Schistosomiasis mansoni*. *Mem Inst Oswaldo Cruz* 82, Suppl. IV:89–93, 1987.

TABLE 69

Prevalence of fecal smears positive for *S. mansoni* in areas of large water developments, Brazil, 1987.

States	Localities		Exam		Prevalence (%)
	Sampled	Positives	Smears done	Positive *S. mansoni*	
Piauí	3	—	3,006	3	0.1
Ceará	63	20	13,161	79	0.6
Sergipe	54	39	3,248	781	24.1
Bahia	166	9	9,543	45	0.5
Total	286	68	28,958	908	3.1

Source: Superintendencia de Campanhas de Saúde Pública (SUCAM), Divisão de Esquistossomose. Annual Report 1987.

about 15,000 km² in the states of Carabobo, Aragua, Miranda, and Guárico, and also in the Federal District. The endemic area corresponds to 1.6% of the national territory, with an estimated population of 6.5 million inhabitants, which represents about 34% of the total population of the country. The population density in the endemic area is 443 inhabitants per km². According to data of the SCP, the prevalence of schistosomiasis was 14.7% for the period 1943–1960; 8.2% for 1961–1965; 4% for 1966–1970; 2% for 1971–1975; 1.9% for 1976–1980; and 0.9% for 1981–1984.[39] These estimates were calculated from population samples under direct risk of infection.

In the 1980s a total of 1,643 cases were reported, as a result of the examination of 229,000 fecal smears (Kato-Katz method). The annual infection rate during the period from 1981 to August 1989 has ranged between 0.8% and 0.3%. The incidence rate per 100,000 inhabitants during the last four years has been reduced from 4.2 (238 cases) in 1985 to only 1.1 (77 new cases) up to August 1989.

[39]R.N. Incani, The Venezuelan experience in the control of *Schistosomiasis mansoni*, *Mem Inst Oswaldo Cruz* 82, Suppl. IV:89–93, 1987.

The geographic distribution of *Biomphalaria glabrata* as of 1988 and the locations where infected snails have been found (Figure 20) clearly show that schistosomiasis in Venezuela is a focal problem. Moreover, recent infection indexes, even in the child population, are very low, as indicated by the information in Tables 70 and 71. This fact has been interpreted by SCP as indicative of the interruption of transmission in endemic areas.

Suriname. Infections are almost entirely confined to the narrow coastal strip where *Biomphalaria glabrata* is found. Although one focus of infection was identified in the inland savannah region, it was fortunately confined to an area of artificially modified habitat. The overall prevalence has been estimated to be about 10%, based mainly on fecal examinations in schools and selected localities using formol-ether and Kato-Katz methods. In areas with specific water management problems the prevalence may be as high as 27%.

During the period 1971–1980, schistosomiasis-related pathology was found in 6.1% of routine post-mortem examinations. During the same period, there were on average 8.4 deaths per year directly attributable to schis-

FIGURE 20

Geographic distribution of *Biomphalaria glabrata*, Venezuela, 1988.

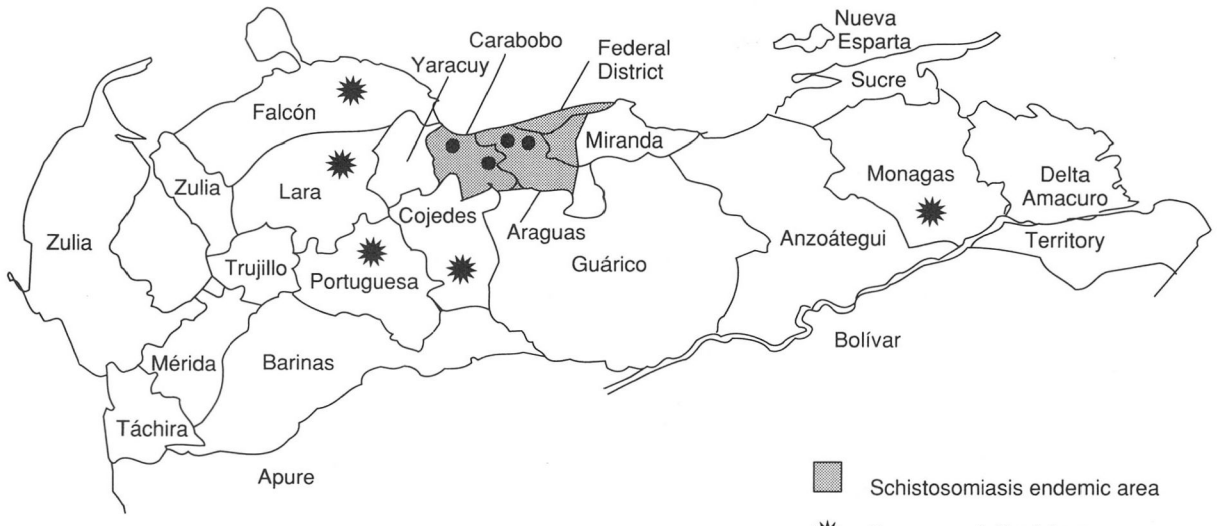


TABLE 70

Prevalence of human infection with *S. mansoni* as diagnosed by fecal examinations, Venezuela, 1943–1988.

Periods	Fecal examinations	Diagnosed cases	% infected
1943–1960	87,639	12,851	14.7
1961–1965	126,948	10,424	8.2
1966–1970	173,645	6,916	4.0
1971–1975	235,656	4,686	2.0
1976–1980	158,519	3,064	1.9
1981–1984	82,877	774	0.9
1985–1988[a]	119,651	768	0.6

[a]Data include only the first half of 1988.

Source: Incani, R.N. The Venezuelan experience in the control of *Schistosomiasis mansoni*. *Mem Inst Oswaldo Cruz* 82, Suppl. IV:89–93, 1987; and Schistosomiasis Control Program, Ministry of Health, Venezuela (unpublished document).

tosomiasis. Bundy[40] points out that this equals a death rate of 2.4 per 100,000 inhabitants and represents 0.4% of deaths from all causes.

It is estimated that 35,000 people live in areas where schistosomiasis is endemic (10.2% of Suriname's total population). Persons at highest risk are farmers of both sexes working in areas which are mostly dedicated to production of rice and vegetables. As a result of latrines being flooded during the rainy season, the farmers' families are also put at risk seasonally.

Control activities are primarily the responsibility of the Bureau of Public Health of the Department of Agriculture. A control program was developed and implemented based on the identification of human cases, followed by specific treatment. Initially, oxamniquine and hycanthone were employed, but now these drugs have been replaced by praziquantel. The specific chemotherapy is supported by focal molluscicide with Bayluscide, health education, and improved sanitation. However, as indicated in the above-referenced document by Bundy, despite these activities, schistosomiasis remains endemic in the most densely populated areas of Suriname, where it continues to be a significant public health problem.

[40]D.A.P. Bundy, The Current Status of Schistosomiasis in the Caribbean Region: Endemic Areas and Areas of Risk. PNSP/87–21. PAHO, 1987.

The Caribbean. Information on schistosomiasis in six Caribbean countries where it is endemic is summarized in Table 72.

American Trypanosomiasis

American trypanosomiasis is a widespread enzootic disease in the Americas. It extends from approximately latitude 42°N (northern California and Maryland) to latitude 43°S (southern Argentina and Chile) (Figure 21). Although access to reliable baseline data on the prevalence and incidence of American trypanosomiasis in humans (Chagas' disease) improved during the 1980s, and particularly in the last quadrennium, it is still difficult to accurately describe the geographic distribution and prevalence of this zoonotic parasitic disease. However, taking into account several indicators, such as number of confirmed human cases, prevalence of seropositive tests in blood donors, serosurveys of population samples, and the presence of infected vectors and reservoirs, it is estimated that some 90 million people in Latin America are at risk of contracting *Trypanosoma cruzi* infection. The results of several serologic surveys carried out with support from

TABLE 71

Geographic distribution of schistosomiasis by age group, Venezuela, 1987.

Federal unit	Total		Under 10 years		10 years and older	
	Examined	Positives (%)	Examined	Positives (%)	Examined	Positives (%)
Federal District	4,131	1.5	1,981	1.2	2,150	1.8
Aragua	11,957	0.2	7,672	0.1	4,285	0.4
Carabobo	4,601	4.6	2,034	1.9	2,567	6.7
Cojedes	2,440	0	1,110	0	1,330	0
Guárico	3,460	0.3	1,686	0	1,774	0.6
Miranda	6,594	0.2	3,022	0	3,572	0.3
Total	33,183	0.9	17,505	0.4	15,678	1.5

Source: Schistosomiasis Control Program, Ministry of Health, Venezuela (unpublished document).

TABLE 72

Status of schistosomiasis in the Caribbean, around 1981.

Endemic areas	Total population (thousands)	Population at risk (%)	Prevalence[a] (%)	Area (km²)
Antigua and Barbuda	63 12	0.5	17 (P) 35 (S)[b]	229 161
Dominican Republic	5,647	4.5	3–50[c]	48,442
Guadeloupe	292	53	4 (P)[d] 25 (P+S)	1,510
Martinique	324	17.5	3.6 (P)[e] 11.7 (P+S)	1,110
Montserrat	12	1.3	10 (P)[f] 25 (S)	85
Saint Lucia	130	12.2	0.1[g]	616

[a]As determined by parasitological examinations (P) or serology (S).
[b]CAREC house-to-house survey, 5 years old and over, 1981.
[c]Survey of the Instituto de Investigaciones en Bilharzia–República Dominicana, 1981–1983.
[d]Survey of the Institut National de la Santé et de la Recherche Medicale–Guadeloupe (INSERM), 1979.
[e]INSERM survey, 1978.
[f]1981 survey.
[g]Expected number of cases for 1984 (100 cases).
Source: Bundy, D.A.P. The Current Status of Schistosomiasis in the Caribbean Region: Endemic Areas and Areas at Risk. PNSP/87–21. PAHO, 1987.

the UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases indicate an overall prevalence of 16–18 million infected persons.[41]

The endemic countries can be categorized based on the following criteria: magnitude of transmission, quantity and quality of available epidemiological information, and presence or absence of coordinated actions to control this disease. The following are the four groups of countries currently identified using these criteria.

Group I. Argentina, Brazil, Chile, Ecuador, Paraguay, Peru, Uruguay, and Venezuela belong to this group owing to the magnitude of the spread of the disease, which has impelled health authorities to establish control programs, either vertically or, more recently, within the context of primary health care strategies. Based on updated data, an account of the overall epidemiological situation in these countries is given in Table 73. Unfortunately, since Chagas' disease continues not to be subject to compulsory reporting in most countries, the figures included in the table were obtained in different years for the different countries, although within the period 1981–1988.

Group II. In all the countries in this group, there is evidence of domiciliary transmission. In Bolivia, Colombia, and Costa Rica, a clear association exists between infection by *T. cruzi* and EKG alterations, as well as other pathologies attributable to Chagas' disease. Information on Mexico's current epidemiological situation indicates a high prevalence of seropositivity to *T. cruzi* antigens; moreover, visceromegalies and cardiopathy associated with *T. cruzi* infections have been reported in certain areas. Given these facts, Mexico is included in this group. Unfortunately, despite the health authorities' awareness of the problem and increased interest in finding a solution, control program activities have not yet been implemented in these countries. The overall epidemiological situation is summarized in Table 74.

Group III. Included in this group are El Salvador, Guatemala, Honduras, Nicaragua, and Panama, in all of which there is evidence of domiciliary transmission. More accurate epidemiological data are necessary to support evidence of a clear correlation between *T. cruzi* infections and severe clinical pictures. In all these countries, however, the acute phase of Chagas' disease is frequently observed, and recent serologic data indicate that the prevalence of positive reactions against *T. cruzi* antigens is relatively high. Table 74 provides additional epidemiological information.

[41]*Tropical Diseases: Progress in International Research, 1987–1988. Ninth Program Report* (Geneva: UNDP/World Bank/WHO Special Program for Research and Teaching Tropical Diseases, 1989).

FIGURE 21

Geographic distribution of Chagas' disease in the Americas, 1989.

Source: PAHO (1989).

TABLE 73

American trypanosomiasis situation in Group I countries.[a]

Countries	Total population in millions	Population at risk		Seropositivity (%)		Prevalence (%) of:	
		millions	(%)	Serologic surveys	Blood banks	Congenital infections	Maternal infections
Argentina	29.6	6.9[b]	(23)	5.7–30	2.0–22	0.75–3.5	6.0–20
Brazil	132.5[c]	25.0[d]	(19)	4.4	1.0–25	2.0–10.5	5.10–10
Chile	11.6	7.3[e]	(63)	20.3	0.3–14	0.4–18.8	0.5–9.5
Ecuador	8.6	0.38[b]	(4.4)	2.6–10	3.2	...	...
Paraguay	3.0	0.94[e]	(31)	4–83	11.3	...	...
Peru	17.0	6.7[b]	(39)	11.8	0.2–12	...	...
Uruguay	2.9	0.97[b]	(33)	1–7	1.0–14	0.1–1.5	8.2
Venezuela	17.3	12.5[e]	(72)	1.3	5.0–12	...	...

[a]Preliminary information corresponding to different years during the period 1981–1988.
[b]UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR). *Tropical Disease Research: A Global Partnership. Eighth Program Report.* WHO, Geneva, 1987, pp. 87–98.
[c]65.0 million living in the endemic area.
[d]Díaz, J.C.P. Control of Chagas' disease in Brazil. *Parasitol Today* 3:336–341, 1987.
[e]Informe de un Grupo de Estudio sobre Estrategias de Control de la Enfermedad de Chagas en las Américas. PNSP/87.03. PAHO, Washington, D.C., 1984.

TABLE 74

American trypanosomiasis situation in Groups II and III countries.[a]

Countries	Total population in millions	Population at risk		Seropositivity (%)[b]		Prevalence (%) of:	
		millions	(%)	Serologic surveys	Blood banks	Congenital infections	Maternal infections
Group II							
Bolivia	5.7	1.8	(32)	32.0	...	5–8	51
Colombia	26.4	3.0	(11)	33.0	63.0	...	...
Costa Rica	2.3	1.1	(48)	11.7	7.6	...	...
Mexico	80.0	—	—	3–21[c]	...	...	...
Group III							
El Salvador	4.7	2.1	(45)	20	...	...	...
Guatemala	7.5	4.02	(54)	16.6	8.7	...	...
Honduras	3.8	1.8	(47)	36.8	7.8–11	...	...
Nicaragua	2.8	—	—	...	28.0	...	...
Panama	1.9	0.89	(47)	3–22	...	...	...

[a]Figures corresponding to different years during the period 1981–1988.
[b]UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR). *Tropical Disease Research: A Global Partnership. Eighth Program Report.* WHO, Geneva, 1987, pp. 87–98.
[c]Preliminary data.

Group IV. The countries included in this group have in common the presence of reservoirs and triatomids naturally infected with *T. cruzi*, that is, the disease is enzootic. In some of the countries belonging to this group (Antigua and Barbuda, Aruba, Bahamas, Belize, British Virgin Islands, Cuba, Curação, Dominican Republic, French Guiana, Grenada, Guadeloupe, Guyana, Haiti, Jamaica, Martinique, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States of America, and U.S. Virgin Islands), the only recent evidence is

the presence of infected triatomids. Belize and Trinidad and Tobago have reported some human infections in the past, as has Guyana more recently (1981).

Leprosy

Leprosy continues to be endemic in almost all the countries of the Region. In 13 of them, the incidence and prevalence rates are very low (incidence less than two cases per 100,000 population), which indicates that the disease is no longer a serious public health problem. In ten countries no new cases were reported in 1987 or 1988 (Table 75). Prevalence is less than one case per 10,000 population in fifteen countries, and in at least five others it is zero.

TABLE 75

Leprosy cases detected and rates per 100,000 population, by country, around 1988.

Country	Year	Cases	Rate
French Guiana	1985	22	26.8
Brazil	1988	25,897	17.9
Guadeloupe	1986	47	13.9
Turks and Caicos Is.	1985	1	12.5
Suriname	1988	41	10.5
Paraguay	1988	379	9.4
Saint Lucia	1987	12	9.2
Martinique	1987	22	6.7
Guyana	1986	50	5.2
Dominican Republic	1988	318	4.6
Cuba	1987	353	3.5
Trinidad and Tobago	1987	35	2.9
Venezuela	1987	440	2.4
Colombia	1988	736	2.4
Argentina	1987	691	2.2
Haiti[a]	1987	124	2.0
Bermuda	1985	1	1.8
Barbados	1988	4	1.6
Ecuador	1988	139	1.4
Dominica	1988	1	1.2
Grenada	1988	1	1.0
Costa Rica	1988	28	1.0
Uruguay	1987	21	0.7
Peru[a]	1987	130	0.6
Mexico	1987	365	0.4
Jamaica	1988	7	0.3
Guatemala	1986	12	0.2
Canada	1986	22	0.1
El Salvador	1988	3	0.1
Anguilla	1986	—	—
St. Vincent and the Grenadines	1988	—	—
St. Kitts and Nevis	1987	—	—
Chile	1988	—	—
Antigua and Barbuda	1988	—	—
Montserrat	1988	—	—
Panama	1988	—	—
Belize	1988	—	—
Cayman Is.	1988	—	—
Honduras	1987	—	—
Netherlands Antilles	1988	...	...
United States of America	1988	...	...
Bolivia	1988	...	...
Nicaragua	1988	...	...
Bahamas	1988	...	...

[a]Partial data.

As of 1988 some 330,000 cases had been recorded in the Region, of which more than 70% had occurred in Brazil. In that country, the highest prevalence and incidence are in the Amazon Region. Nearly 30,000 new cases were reported in the Region of the Americas in 1988, of which 26,000 (86%) were in Brazil.

Multidrug therapy, which has been in use since 1981, contributed to the reduced prevalence and incidence observed in several countries. However, the disease is still a prominent problem in at least 16 countries of the Region, in which the incidence is more than two cases per 100,000 population, and in most of which the prevalence is more than one case per 10,000 population. Moreover, even in those countries where the national rates are low, important endemic foci may remain, since the distribution of the disease is not uniform; in these countries the magnitude of the problem is evaluated according to the percentage of the national population that lives in the endemic foci.

The countries of the Region are classified into three groups according to their leprosy incidence and prevalence rates (Tables 75 and 76):

TABLE 76

Prevalence of leprosy and rates per 10,000 population, by country, around 1988.

Country	Year	Cases	Rate
French Guiana	1987	326	37.1
Martinique	1988	1,094	33.2
Turks and Caicos Is.	1987	26	32.5
Guadeloupe	1987	1,014	30.1
Brazil	1988	239,328	16.6
Paraguay	1988	3,252	8.1
Suriname	1987	306	7.9
Colombia	1987	19,806	6.6
Venezuela	1987	10,470	5.7
Cuba	1987	5,738	5.7
Argentina	1987	16,870	5.4
Dominican Republic	1988	2,888	4.2
Saint Lucia	1987	43	3.3
Bolivia[a]	1987	1,706	2.5
Mexico	1987	16,687	2.0
Bahamas	1985	41	1.7
Costa Rica	1988	448	1.6
Anguilla	1986	1	1.4
Guyana	1987	136	1.4
Ecuador	1988	1,178	1.2
Haiti[a]	1988	718	1.2
Uruguay	1987	293	1.0
Trinidad and Tobago	1987	102	0.8
St. Vincent and the Grenadines	1988	8	0.7
Jamaica	1987	151	0.6
Panama	1988	135	0.6
Peru[a]	1987	1,145	0.6
Nicaragua	1985	142	0.4
Dominica	1988	3	0.4
Antigua and Barbuda	1988	3	0.4
Guatemala	1986	278	0.3
Grenada	1988	3	0.3
Barbados	1988	7	0.3
United States of America	1985	5,542	0.2
Honduras	1988	75	0.2
Canada	1985	190	0.1
Chile[b]	1988	18	0.0
Cayman Islands	1988	—	—
St. Kitts and Nevis	1988	—	—
Belize	1988	—	—
Bermuda	1985	—	—
Montserrat	1988	—	—
Netherlands Antilles	1988	...	...
El Salvador	1988	...	...

[a]Partial data.
[b]The 18 cases are from Easter Island, where the rate is 85.7.

• Countries with high prevalence and incidence throughout almost the entire national territory (Brazil, French Guiana, Guadeloupe, Martinique, Paraguay, Suriname, and Turks and Caicos Islands). Outstanding in this group is Brazil, which accounts for more than 85% of the incidence and more than 70% of the prevalence in the entire Region. Retrospective studies of incidence and prevalence in that country indicate that the disease is on the increase, especially in the Amazon region.

• Countries that have medium or low national incidence and prevalence rates that appear to be stationary or on the decline, but which have foci of high morbidity where at least 10% of the national population resides (Argentina, Bolivia, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, Guyana, Haiti, Mexico, Peru, Saint Lucia, and Venezuela).

• Countries with very low national morbidity rates in which a downward trend is observed (Anguilla, Antigua and Barbuda, Barbados, Belize, Bermuda, Canada, Cayman Islands, Chile, Dominica, El Salvador, Grenada, Guatemala, Honduras, Jamaica, Montserrat, Nicaragua, Panama, St. Kitts and Nevis, St. Vincent and the Grenadines, Trinidad and Tobago, the United States of America, and Uruguay). In some of these countries, no new cases have been reported in the last two years and former patients have been treated and cured (Tables 75 and 76).

The fundamental aims of the control activities being carried out in the countries are to reduce incidence to less than one case per 100,000 population and prevalence to less than one case per 10,000 population, and to transform leprosy into a nonincapacitating disease through early detection and multidrug treatment of all cases. All the countries are implementing the policy and strategies recommended by PAHO/WHO for achieving these goals; however, in most of them coverage has not been sufficient to effectively control the disease.

Field-testing of a leprosy vaccine made of BCG plus heat-killed leprosy bacilli from armadillos is currently under way. Studies by Convit *et al.* at the Institute of Biomedicine in Caracas, Venezuela, have indicated that

the vaccine may be effective in man. The WHO-sponsored field studies being conducted in Venezuela call for ten years' observation of the vaccinated population in order to verify the protective effect of the vaccine. In the meantime, prevention and control will continue to be based on early case detection and the administration of multidrug treatment.

Viral Hepatitis

Four forms of viral hepatitis can be recognized: hepatitis A; hepatitis B; non-A, non-B hepatitis; and delta hepatitis. Hepatitis A is caused by a picornavirus (HAV), is transmitted by the fecal-oral route, does not become chronic, and does not induce a chronic virus carrier state.

Hepatitis B is caused by an enveloped virus (HBV) containing a circular double-stranded form of DNA. The disease is transmitted parenterally through inoculation of blood or blood products containing the virus or through close contact with a virus-positive person (including contact between infected mother and newborn and sexual contact). Individuals with a persistent or chronic infection may remain infectious for many years.

The agents of non-A, non-B hepatitis can be distinguished as a predominantly parenterally transmitted virus (HCV) and an orally transmitted form (HEV). The former has a genome similar to the members of the flavivirus family and the latter is reported to be a picornavirus.

Delta hepatitis is caused by a defective RNA virus-like agent (HDV) that requires HBV synthesis for its replication.

Although viral hepatitis is clearly a major public health problem in the Americas, the true impact of the disease has not been determined in many countries of the Region.

As hepatitis B (HB) is often associated with severe disease, including chronic active hepatitis, cirrhosis, and primary hepatocellular carcinoma (PHC), and is now vaccine-preventable, it requires the most urgent attention at this time. The consequences of disease are greatest when infection occurs early in life. Over 90% of infants born to HBV-carrier mothers (HBeAg positive) become infected, 70–90% become HBV carriers, and an estimated 25–40% ultimately die from chronic liver disease. Children who become infected between ages 1 and 5 years also have a 20% risk of becoming HBV carriers and suffering the long-term consequences of HBV infection, but this risk decreases to between 5% and 10% when infection occurs in older children and adults. The consequences of chronic HBV infection are greatest in areas of high HBV endemicity, in which perinatal and early childhood infection result in 10% or higher HBV carrier rates in the general population, and in which PHC and cirrhosis are extremely common causes of death. HBV infection endemicity varies in the Region. It is low in North America, temperate South America (Argentina, Chile, Uruguay, southern Brazil), Mexico, and some Caribbean countries; moderate in much of Brazil, the Andean countries, and parts of Central America and the Caribbean; and high in most parts of the Amazon Basin, Hispaniola, St. Kitts and Nevis, and some areas of Colombia, Peru, and Venezuela (Figure 22). Over six million hepatitis B carriers are estimated to exist in the Region.

Disease endemicity has been shown to vary widely within some countries, dependent upon racial group, geographic area, socioeconomic class, or other factors. Most striking are variations within Brazil and Peru, in which baseline prevalences vary from low to very high in large portions of the populations (in Brazil, prevalence is low in the south and high in the Amazon region; in Peru, prevalence is low in coastal areas and high in the Amazon Basin and southern Andes). In addition, even in smaller, less culturally diverse countries, HBV infection risk is greatly enhanced in segments of the population due to factors such as race (Asian race in Suriname, indigenous groups in Venezuela and Brazil), poor socioeconomic status (Brazil, Venezuela), rural residence (Brazil, Peru), or simply geographic location (Tobago in Trinidad and Tobago, Santa Marta region of Colombia).

In areas of high HB endemicity, transmission presumably occurs in the perinatal period and during childhood. In addition to factors such as race, socioeconomic status, and place of residence, certain lifestyles (homosexuality, prostitution) and occupations (health care) are risk factors that increase HB prevalence in some segments of the population; it is likely that the number of persons at high risk of HBV infection is currently underestimated. Occurrence of the chronic consequences of HBV infection is likely proportional to disease endemicity and, in high endemicity areas, prevalence rates are comparable to those in Africa and parts of Asia.

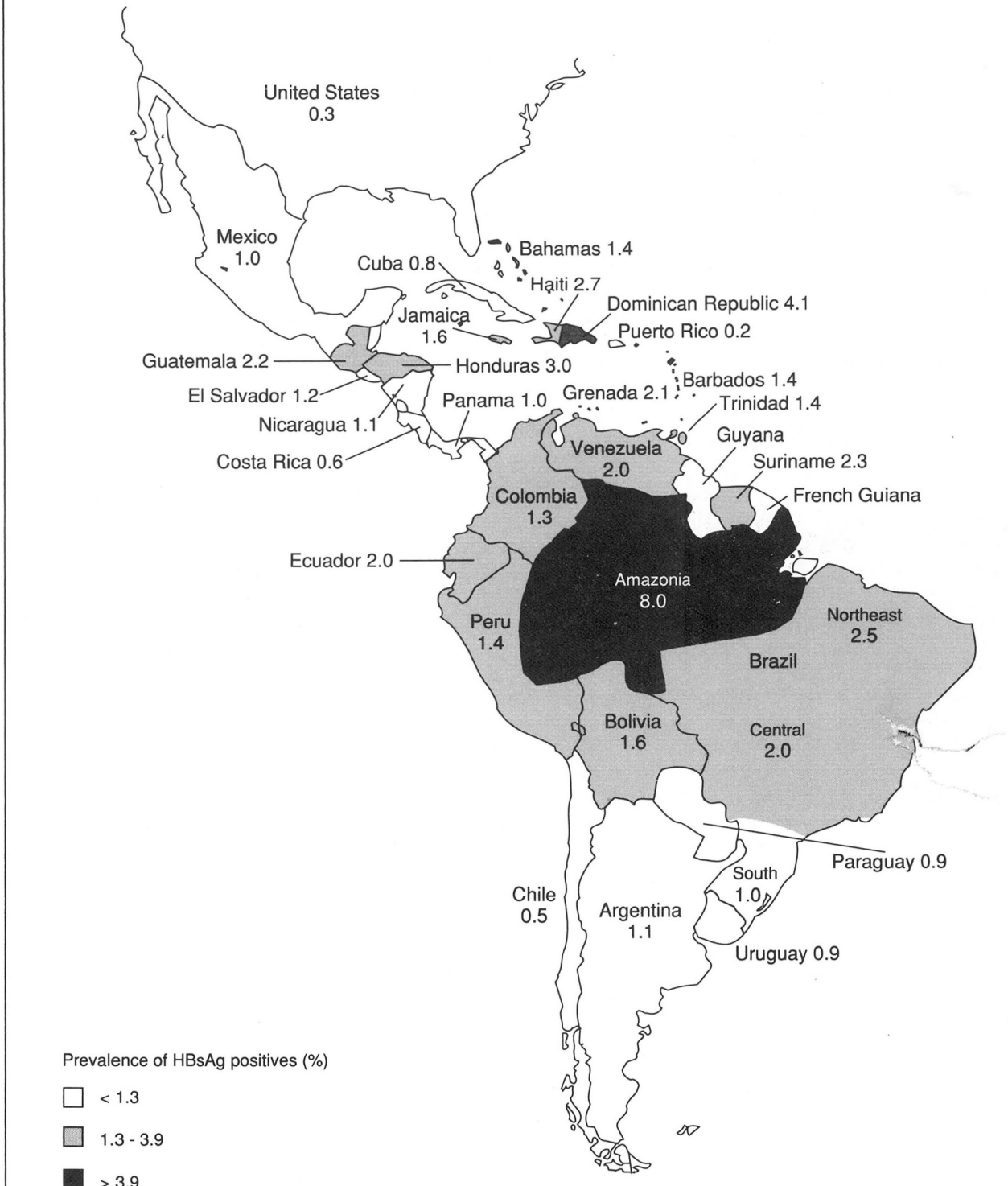
Delta virus infection causes high mortality due to fulminant and chronic hepatitis throughout areas of high HB endemicity in Brazil (Amazon Basin), Colombia (Santa Marta region), and Venezuela (among the Yucpa Indians). It is currently suspected that the delta agent is in part (or fully) the cause of Santa Marta and Labrea fulminant hepatitis. Recent studies indicate that delta infection is highly endemic in certain areas of Peru.

Hepatitis A (HA) is a disease of childhood throughout the Region, except in the USA, Canada, and possibly the smaller Caribbean islands. Significant morbidity is caused by the disease in older children. Outbreaks of hepatitis A have been reported from several countries, such as Argentina, Brazil, Costa Rica, and Panama.

The blood-borne type of non-A, non-B (NANB) hepatitis is present throughout the Region and is an impor-

FIGURE 22

Prevalence of hepatitis B infection (HBsAg positives) in the Americas, 1975-1985.



Source: HBV eradication strategy in Latin America: O.H. Fay et al in *Vaccine*, Vol. 8, Supplement 1990.

tant cause of acute hepatitis in adults. Although the occurrence of water-borne outbreaks due to non-A, non-B agents in the Americas has been suggested, epidemic transmission of this disease was only recently documented. Such evidence was obtained during two outbreaks that occurred in neighboring rural towns in Mexico in 1986. Immunoelectron microscopy studies indicated that the virus-like particles recovered from the stools of the Mexican patients are the same as those recovered from Asian and African patients suffering from enterically transmitted NANB hepatitis.

It is encouraging that national hepatitis committees have been established in several countries of the Region. These committees will help the health authorities identify priorities and monitor hepatitis control activities. Also, national reference centers on viral hepatitis are working in Argentina, Chile, Colombia, Brazil, and Venezuela. Substantial progress had been made in defining the epidemiology of viral hepatitis in several countries of the Region. For example, studies have identified previously unrecognized areas that are hyperendemic for HBV infection in St. Kitts and Nevis and southeastern Brazil, have investigated childhood HBV infection in Costa Rica, and have demonstrated and quantified high risk of development of primary hepatocellullar carcinoma among HBV carriers in Costa Rica and Chile. However, more work is needed in the following areas:

- The national surveillance programs should be strengthened, with reporting of hepatitis by separate types (e.g., hepatitis A, hepatitis B, etc.); the use of disposable needles for immunization encouraged; efforts increased to provide clean water and good sanitation; and policies on immunoglobulin use reevaluated.
- The importance of perinatal and early childhood infection should be defined throughout the Region and in various population segments. Ideally, population-based studies should be designed or coordinated at the national level.
- Further specific studies of hepatitis A should be encouraged in anticipation of a future hepatitis A vaccine. Such studies would include evaluation of the role of hepatitis A virus as a cause of acute and fulminant hepatitis, epidemiological studies of outbreaks of hepatitis A, and population-based national seroprevalence surveys to measure overall impact of the infection.
- Collection of additional epidemiological data on the etiology of acute icteric hepatitis, the impact of delta infection in HBV-endemic areas, the interaction of HBV and other diseases, and the importance of non-A, non-B hepatitis should be supported.

Hepatitis B Vaccination. Vaccination against hepatitis B provides the most effective tool for preventing HBV infection. Active immunization with HB vaccine not only can reduce the frequency of overt illness, but is the only method that offers the possibility of eradicating this disease. For this reason WHO recommends that the prevention of HBV infection be made a high priority in all areas with high or moderate disease endemicity, and that efforts begin immediately to vaccinate all newborn infants against hepatitis B, integrating this vaccine into the Expanded Program on Immunization (EPI), in countries or populations with known high HBV endemicity.

One of the obstacles to the implementation of HB vaccination programs is the high cost of the vaccine. However, a marked reduction has recently been observed in HB vaccine costs, owing to the increased number of commercial manufacturers of plasma and/or recombinant vaccines.

HB vaccine use in the Region has increased, especially the use of commercial vaccines in health care workers. One country (Venezuela) has developed a cost-benefit model that strongly justifies HB vaccination of this group. Wider use of the vaccine in high endemicity populations has been implemented by the United States for Alaska Natives and Pacific Islanders, and by Venezuela and Colombia for indigenous populations and/or other groups in which severe HBV-HDV infections are known to be endemic.

A vaccine demonstration project has begun in two villages in the Santa Marta region of Colombia with the assistance of PAHO, and the project is gradually being expanded to other villages in that region. In the second half of 1989, a vaccination program was initiated in the western part of the Amazon region of Brazil. In the first phase of the program, all children 0–9 years of age in 12 municipalities of Amazonas State will be vaccinated, and the vaccine will be integrated into the EPI. The program will gradually be expanded to the entire state of Amazonas, and then to neighboring states in Western Amazonia. Peru is also considering beginning a demonstration project in high endemicity areas, such as the Abancay region.

Highest priority should be given to developing and implementing HB vaccination programs among the following groups:

- Populations in which HBV infection is highly endemic (more than 5% HBsAg positive). Programs should consist of universal vaccination of infants, beginning at birth, with subsequent doses fully integrated into the existing EPI framework.
- Infants in all populations, to prevent perinatal disease transmission. This can be accomplished through either universal HBsAg screening of pregnant women and vaccination of infants born to HBV carrier mothers, or universal vaccination of infants. Estimates of perinatal disease

burden and costs versus benefits of HB screening should be prepared to assist in developing policies.

• Other high-risk populations such as health care workers or family contacts of HBV carriers.

Demonstration projects to initiate vaccination of infants (and susceptible young children) in known high-risk populations are strongly encouraged. As stated before, such projects should attempt to integrate HB vaccination into the EPI. It should be noted that WHO has available limited quantities of vaccine for such projects, and that PAHO can provide technical assistance in development of protocols.

Brazil is establishing contacts with commercial manufacturers of recombinant HB vaccine in Japan, Europe, and the United States for transfer of technology to establish local production. Cuba has achieved significant progress in its efforts to produce a recombinant HB vaccine.

Acquired Immunodeficiency Syndrome (AIDS)

The AIDS epidemic continues to expand worldwide. As of 1 March 1990, a cumulative total of 222,740 cases of AIDS had been reported officially to the World Health Organization's Global Program on AIDS (GPA) from 153 countries. GPA now estimates the actual cumulative number of AIDS cases to date to be over 600,000, or more than twice the number of officially reported cases.

Transmission of the human immunodeficiency virus (HIV) continues throughout the world, and WHO estimates that over five million people are currently infected with this virus.

Regional Surveillance

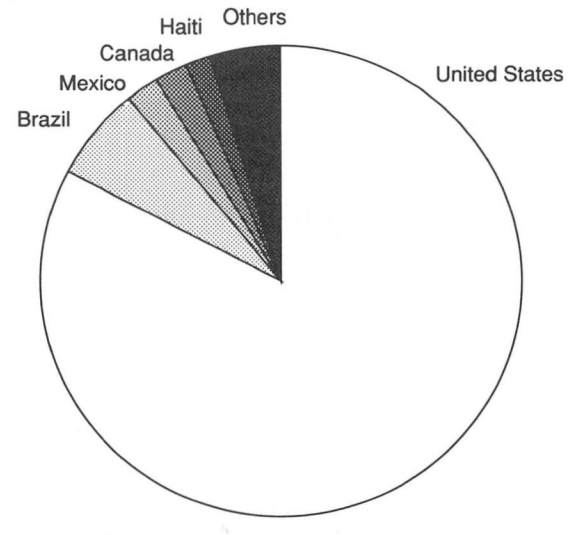
With the recent addition of Montserrat, all countries and territories in the Americas have reported cases of AIDS. The AIDS virus (HIV) is present and being transmitted in all the countries and territories of this Region. As of 20 March 1990, 150,760 cases of AIDS had been reported to the Pan American Health Organization since the beginning of surveillance in 1983. North America has reported the largest number of cases, 127,800, most of which occurred in the United States. Mexico has reported 3,512 cases, while the Latin Caribbean, composed of Cuba, Haiti, and the Dominican Republic, has reported an even larger number, 3,594. The countries of the Central American Isthmus have reported 1,063 cases, while the Caribbean countries have reported 1,941 cases. Brazil has reported 9,554 cases, while the Andean area and the Southern Cone have reported 1,626 and 840 cases, respectively. Five countries, the United States, Brazil, Canada, Haiti, and Mexico, continue to contribute over 95% of all the cases in the Region (Figure 23).

Figure 24 plots the annual incidence through 1989 of reported AIDS cases in three subregions: North America, Latin America, and the Caribbean. The only difference between these curves is the point in time at which they began. At the country level, the situation is identical. HIV was introduced in different countries at different times, but once transmission is firmly established, the epidemic curve in each country is similar.

Comparison of the total number of cumulative cases in different countries is not particularly useful because the total does not consider the size of the population that gave rise to the AIDS cases. Calculating the incidence rate for a given calendar year by using reported cases and the median population estimate for that year provides a better method for comparison. This method reveals a high incidence rate of 79.0 cases per million population for the English-speaking Caribbean in 1989 and 35.5 cases per million population for the Latin Caribbean. Yet even these averages obscure significant differences between the countries. For example, the rate in some Caribbean countries ranged between 300 and close to 500 AIDS cases per million population in 1989. In comparison, the incidence rate in Brazil reached 18.8 cases per million population in the same year.

FIGURE 23

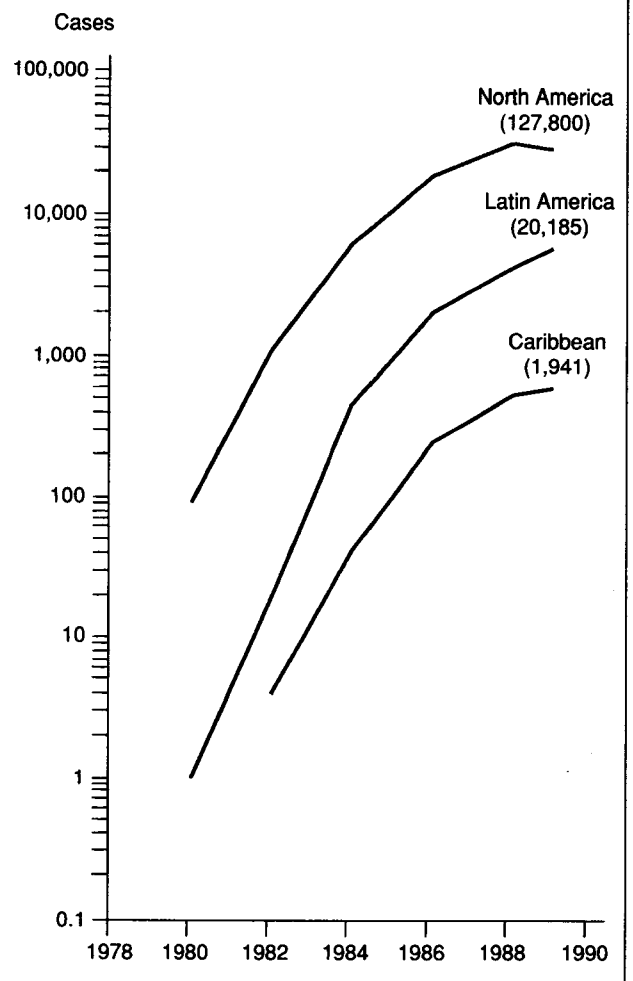
Distribution of the cumulative number of reported AIDS cases, by country, through 1989.



Source: PAHO (1990).

FIGURE 24

Reported AIDS cases in North America, Latin America, and the Caribbean, 1980 - 1989.



( ) Cumulative number of cases reported from 1980 through 1989.

These differences may be explained by the different times at which HIV was introduced in the various countries and by the small size of the populations in some of the non-Latin Caribbean countries and territories (ranging from less than 10,000 to a high of 2.3 million). Under these circumstances, even a small number of AIDS cases gives rise to a disproportionate rate per million population. Thus, rather than comparing the rates in some of the smaller territories with those in larger countries, it would be more appropriate to compare them to the rates of AIDS cases in some urban areas of the larger countries in North and South America.

Magnitude of HIV Infection. In the Americas, as in all other regions of the world, the number of AIDS cases grossly underestimates the magnitude of the problem, since it does not represent the total number of infected individuals. The Pan American Health Organization estimates that approximately 2.5 million people are infected with HIV in this Region. Of these individuals, 1.0 to 1.5 million reside in North America, and approximately 750,000 to 1.0 million live in Latin America and the Caribbean.

Serologic surveys for detection of antibody to HIV among selected populations provide a better estimate of the true extent of HIV infection in the Region. Unfortunately, serologic surveys for HIV infection have only recently been undertaken in some countries, and general population surveys are not currently available to provide an accurate estimate of the total number of HIV-infected people in the Americas. However, selected studies undertaken among military recruits, blood donors, and women attending prenatal clinics provide a rough idea of the proportion of the general heterosexual population infected with HIV, and serologic surveys of homosexual/bisexual men, female prostitutes, intravenous drug users, their sexual partners, and patients attending sexually transmitted disease (STD) clinics provide important information about the extent of HIV infection among individuals at high risk. Unfortunately, the number of individuals studied by these surveys and the methodology used for their enrollment vary significantly, and thus direct comparisons between individual countries or specific population groups cannot be made. Representative rates for selected populations in different countries are shown in Table 77 for the purpose of providing an estimate of the extent of HIV infection in these groups.

Patterns of HIV Transmission

The human immunodeficiency virus is transmitted in three ways: sexually, between two men or between a man and a woman; parenterally, through HIV-infected blood and blood products, contaminated syringes and needles shared among intravenous drug users, contaminated skin piercing instruments used for medical or nonmedical purposes, and HIV-infected organs or tissues (including semen) used for transplant; and perinatally, from an infected mother to her child (before, during, or after delivery). These modes of transmission are common to all areas of the world. Their relative frequency and the possible date of HIV introduction and dissemination account for the different epidemiological patterns seen among the countries.

The World Health Organization has identified three patterns of transmission that describe the situation in different areas of the world. In pattern I areas, HIV

TABLE 77

Seroprevalence rates for HIV infection among selected populations in the Americas.[a]

Population	Country (year of report)	Number studied	% infected
Homosexual/ bisexual men	Argentina (88)	2,000	17.8–29.0
	Brazil (88)	132	23.4
	Colombia (88)	294	21.0
	Costa Rica (87)	800	20
	Dominican Republic (87)	87	13.8
	Mexico (86-88)	483	15.0–31.1
	Peru (88)	1,334	11.2
	Trinidad and Tobago (87)	100	40.0
	USA (87)	15,000	20–50
	Venezuela (87)	407	20.6
Intravenous drug users	Argentina (88)	978	22–60
	Brazil (88)	188	15.9
	Puerto Rico (87)	162	52
	USA (Eastern) (87)	10,000	50–60
	(Western) (87)	5,000	5–20
Female prostitutes	Bolivia (88)	330	0
	Brazil (88)	290	1.7–6.2
	Dominican Republic (87)	986	0.9–1.2
	Mexico (88)	770	0.4–7.0
	Peru (88)	2,449	0.3
	USA (87)	3,895	0–45
Hemophiliacs	Argentina (87)	581	35–56
	Brazil (88)	657	75–94
	Canada (88)	341	55.0
	Costa Rica (88)	163	60.7
	Mexico (88)		20–66
	Peru (88)	243	5.3
	USA (Type A) (87-88)	1,794	70
	(Type B) (87-88)	345	35
	Venezuela (88)	50	24.0
Heterosexual partners of at-risk individuals	Argentina (88)	204	7.7–14.9
	Brazil (88)	13	38.5
	Haiti (86-88)	918	51–55
	USA (87)	638	8.7–53.1
Blood donors	Brazil (87)	11,807	0.9–7.0
	Canada (87)	1.17 million	0
	CAREC (87)	37,713	0.61
	Costa Rica (87)	38,000	0.11
	Cuba (87)	388,480	0.004
	Dominican Republic (87)	1,480	1.62
	Guadeloupe (87)	9,356	0.17
	Jamaica (87)	5,724	0.23
	Martinique (87)	10,109	0.20
	Mexico (86–88)	700,000	0.01–7.3
	Panama (87)	6,279	0.06
	Trinidad and Tobago (87)	6,407	0.92
	USA (87)	12.6 million	0.020
	Venezuela (87)	1,508	0.07
Pregnant women	Cuba (87)	23,000	0
	Haiti (87)	4,000	9.2
	Peru (88)	860	0
	USA (Massachusetts) (88)	30,708	0.21

[a] Methodologies vary among countries.

transmission and AIDS cases occur mostly in homosexual and bisexual males and in individuals who use intravenous drugs. This is the pattern found in North America and Western Europe. In pattern II areas, AIDS cases are equally divided between females and males. The predominant mode of transmission is heterosexual contact, but in some areas transmission through blood and blood products is also significant. As a consequence of the large number of sexually active women infected with HIV, perinatal transmission is frequent. This pattern is typical of several sub-Saharan African countries. Finally, pattern III areas are those in which HIV has only recently been introduced (that is, Asia and Eastern European countries).

In the Region of the Americas, pattern I (predominantly homosexual transmission) is still present in North America and in the Southern Cone countries. However, a rapid shift toward pattern II (heterosexual transmission) has been observed in the Caribbean and Central America.

Sexual Transmission. In the United States of America and Canada, 60% and 80%, respectively, of reported AIDS cases have occurred among homosexual/bisexual men who denied intravenous drug use. An additional 7% and 3.1% of AIDS cases in the two countries, respectively, have been homosexual or bisexual intravenous drug users.

In Latin America, AIDS cases were initially reported among homosexual and bisexual men with a history of travel to the United States of America. The first cases, many of which had already been diagnosed in Europe and North America, were found in Argentina, Brazil, Colombia, Mexico, and other countries retrospectively from 1982 to 1985.

Since 1984, more than 50 HIV serologic surveys of homosexual and bisexual men in the United States of America have shown prevalence rates ranging from 10% to as high as 70%, with most between 20% and 50% (Table 77). The highest rates of infection have been found in cities with the highest rates of AIDS cases in homosexual men. Similar rates of infection have also been recently documented in other countries of the Americas. From 11% to 40% of homosexual men surveyed in Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Mexico, Peru, Trinidad and Tobago, and Venezuela have been found to be HIV-seropositive (Table 77). It is likely that these data overestimate the true prevalence of HIV infection among homosexual men, since most of these surveys were conducted in individuals who sought medical attention either for STDs or because of a concern that their past or present sexual behavior had placed them at risk.

An important feature of the epidemic in some Latin American and Caribbean countries is the proportion of bisexual men affected, accounting for 15–25% of all AIDS cases. Many of these individuals are married or have steady female partners. The high rate of HIV infection among bisexuals in some Latin American and Caribbean countries, and among heterosexual intravenous drug users in the United States of America, is associated with increasing numbers of women becoming infected with HIV due to heterosexual transmission. For example, in 1984, bisexuality was the most common risk factor (36%) for HIV infection in Haitian men, and the sex ratio among Haitian AIDS patients was 3 males to 1 female. More recently, the male-to-female ratio has fallen to nearly 1:1, and homosexuality or bisexuality is far less frequent a risk factor than heterosexual contact. Similar patterns are also emerging in other countries, such as the Dominican Republic, Jamaica, and Mexico. In 1987, 41% of the 37 cases of AIDS diagnosed in Jamaica occurred among women. In summary, while the proportion of cases in which heterosexual transmission of HIV is implicated is still low in most countries of Latin America, a significant number of cases of AIDS and HIV infection are being detected in women in the Caribbean and some areas of Central and South America, as well as among inner-city populations in the United States of America.

In contrast to studies in Africa which have demonstrated extremely high rates of HIV infection (27% to 90%) among female prostitutes, similar studies in the Americas have not documented such high rates of infection in that group. In the United States of America the seroprevalence rates in female prostitutes vary from 0 to 45%, with the highest rates in large inner-city areas where intravenous drug use is common. HIV infection in prostitutes with no evidence of intravenous drug use was associated with recent infection with syphilis or hepatitis B, and with large numbers of nonpaying sex partners. In the Latin Caribbean, one serologic survey of prostitutes in the Dominican Republic documented that 12 (1.2%) of 986 female prostitutes were infected with HIV. In Central and South America, rates of infection among samples of prostitutes ranged from 0 to 7%.

Perinatal Transmission. Perinatal transmission of HIV may occur *in utero* through transplacental passage of the virus, natally at the time of delivery when there is maternal/fetal blood exchange, or postnatally through breast-feeding or other possible routes. Risk factors associated with perinatal transmission remain unknown, and prospective studies are currently under way in several high-risk areas. Of the 2,116 children diagnosed with AIDS in the United States of America as of March 1990, 1,734 (82%) were born to a mother infected with HIV or at risk for HIV infection, principally because of intra-

venous drug use or sex with an infected partner. Blacks and Hispanics account for 16.5% and 10.5%, respectively, of these pediatric cases. The large number of pediatric cases among blacks and Hispanics reflects the disproportionately high relative risk of HIV infection and AIDS among members of these minority groups residing in the inner cities of the northeastern United States of America.

In Brazil, less than one-fifth of the cases in infants and children have been associated with perinatal transmission. In Mexico, 16% of pediatric cases occurred in infants of infected mothers. The majority of cases in Latin America in children thus far have been associated with transfusion of blood and blood products, and in rare cases with sexual abuse and child prostitution. However, it can be anticipated that the number of perinatally acquired cases will rise in many of these areas as increased heterosexual transmission to women is documented.

Parenteral Transmission through Blood and Blood Products. Transmission of HIV infection among intravenous drug users appears to be a major problem in the developed countries of the Americas. Currently, 21% of reported AIDS cases in the United States of America have occurred among intravenous drug users, and an additional 7% among homosexual men who also acknowledge intravenous drug use. The incidence of HIV infection has been documented to be increasing at the fastest rate among intravenous drug users compared to other high-risk populations. In Bermuda, Bahamas, Puerto Rico, and several other countries with the highest reported case rates of AIDS, the sharing of contaminated injection devices by drug users appears to be the predominant mode of transmission. The transmission of HIV among intravenous drug users appears to be far less significant in Latin America, where, in general, less than 1% of AIDS cases are believed to be associated with that activity. However, this situation is rapidly changing in urban areas of the Southern Cone countries and Brazil.

Transfusion of blood and blood products, such as factor VIII and factor IX concentrates, has been responsible for 4% of the documented AIDS cases in the USA and 5–10% in other areas of the Americas. HIV antibody prevalence among blood and blood products donors has been found to vary greatly, from 0% among 4,000 donors in Argentina and 0.1% of more than 1,400 blood samples in Barbados, to high rates of 1.62% in the Dominican Republic, up to 7.0% in Brazil among paid donors to private blood banks, and 7.3% among some paid blood donors in high-risk areas of Mexico City (Table 77).

Since 1985, donated blood and plasma have been screened for HIV antibody in North America, some of the Caribbean countries, and a few countries in Latin America. In the USA, the prevalence of HIV infection remains low among the highly selected population of blood donors: 0.02% among 12.6 million American Red Cross blood donations between April 1985 and May 1987. The overall level declined from 0.035% in mid-1985 to 0.012% in mid-1987, primarily as a result of eliminating previously identified seropositive persons from the donor pool. The overall prevalence among first-time donors in the period 1985–1987 was 0.043%. As screening of donated blood becomes more universal throughout the Americas with the development of rapid and inexpensive tests, additional information will become available regarding HIV infection rates among blood donors.

Clinical Manifestations

Clinical features of HIV infection are diverse. They range from acute retroviral infection, to asymptomatic infection, to involvement with a wide variety of opportunistic infections, encephalopathy, and/or malignancies. Clinical manifestations vary in different populations according to the relative frequency of endemic opportunistic infections. In contrast to AIDS patients in more temperate countries (such as the United States of America and Canada), in whom pulmonary symptoms are common, patients in tropical areas (such as the Caribbean, Central America, and parts of South America), present with gastrointestinal and dermatologic features more frequently than with pulmonary symptoms.

Among AIDS patients residing in tuberculosis-endemic areas, such as the Caribbean and parts of Latin America, tuberculosis may be one of the earliest opportunistic infections seen among HIV-infected individuals.

Other Retroviral Infections

In 1985, a second human retrovirus associated with AIDS was identified in West Africa. Referred to as **HIV-2,** this virus has been documented at relatively high prevalence rates among high-risk individuals such as hospitalized patients, female prostitutes, and STD clinic attendees in several countries of West Africa. Four cases of HIV-2 infection have been diagnosed in the USA and Canada among patients who had visited or lived in West Africa. In another case, HIV-2 was isolated from a Cuban who had lived in Africa, and investigators in Brazil have identified 15 patients with unconfirmed serologic evidence of HIV-2 infection.

Prior to the recognition of HIV as the etiologic agent of AIDS, a closely related virus, the human T-lymphotrophic virus type 1 **(HTLV-I)** had been identified as a cause of adult T-cell leukemia/lymphoma (ATL).

The modes of transmission of HTLV-I have not been well established, but the possible modes include perinatal

transmission, either *in utero*, natally, or postnatally; parenteral transmission via blood transfusion or via exposure to contaminated needles and syringes; and sexual transmission, primarily male to female, and also between homosexuals. Some epidemiological studies have demonstrated the presence of this virus in several countries of the Caribbean Basin.

Tuberculosis

The tuberculosis situation differs considerably between North America and Latin America in terms of the magnitude and importance of the problem and the resources available to deal with it. In North America, the problem is minimal; excess morbidity attributable to AIDS in recent years has so far served only to stabilize the general decline in tuberculosis morbidity. Accordingly, the analysis that follows concentrates mostly on Latin America.

Magnitude and Trend of the Problem

Not only has mortality from tuberculosis been declining steadily, but so too have morbidity and the risk of infection, although at different rates in different countries. This trend has been evident since the end of the last century, when information began to be available on tuberculosis mortality in some of the European countries. Morbidity data have borne out this situation, and retrospective studies on the risk of infection, based on large numbers of tuberculin skin tests, have confirmed that transmission, like illness and death from tuberculosis, had declined naturally.

Changes in the population's living conditions, diet, housing, education, and hygiene habits, as well as the isolation of patients and the elimination of tuberculous cattle, are factors that help to explain why the magnitude of the tuberculosis problem has been declining annually in the developed countries in the absence of effective specific treatment against the bacillus. The rate of this decline has been 4% to 5% since the beginning of the century. When antituberculosis chemotherapy was introduced at the end of the 1940s, annual decreases of 10% to 13% were soon recorded in many European countries, which meant that the tuberculosis problem was being cut in half every five years thereafter.

Generally speaking, in the Latin American countries the decline has been slow and unsatisfactory. The reductions of 5% seen in some countries are less than those achieved in the developed countries 40 or more years ago.

Mortality

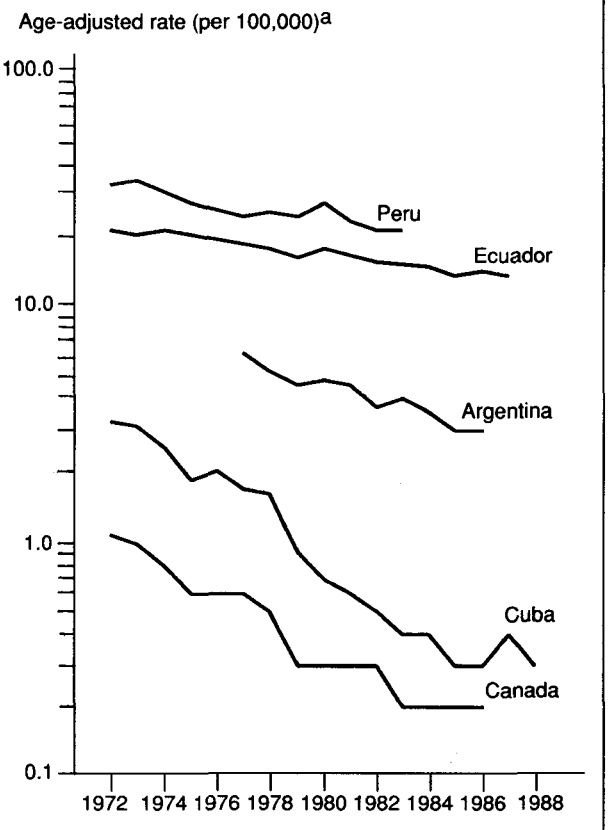
Despite their known limitations, as well as the important problem of underreporting and erroneous death certification in Latin American countries, mortality data are often a useful indicator of program operations and the quality of services.

The information available shows that mortality has declined slowly but steadily in most Latin American countries, with the majority recording annual reductions of 5% or less. Although some of the countries show almost no trend toward reduced death rates (Figure 25), most have annual mortality rates lower than 20 per 100,000 population.

An analysis of mortality by age group brings to light another characteristic: in those countries where the dis-

FIGURE 25

Age-adjusted mortality rates from tuberculosis in selected countries of the Americas, 1972 - 1988.



[a] Rates adjusted to the population of Latin America around 1960.

Source: PAHO (1989).

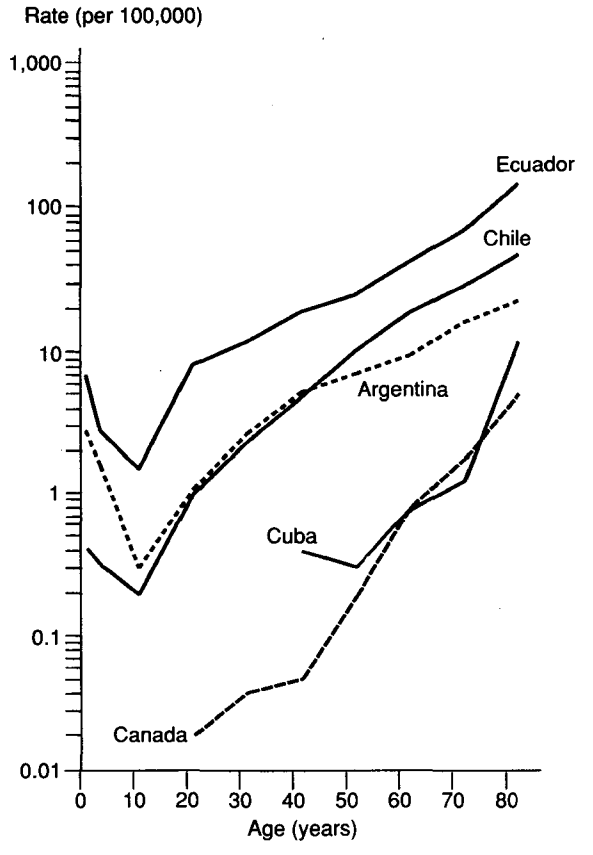
ease is no longer a problem, mortality from tuberculosis occurs only in persons aged 45 or over (Canada, Cuba, and the United States). Mortality attributable to tuberculosis in children is either nonexistent or extremely rare. This trend has been observed not only in the developed countries, but also in developing countries that have implemented BCG immunization at birth and have achieved coverage levels in excess of 90% (Chile, Costa Rica, Cuba, and Uruguay).

In most countries of the Region, however, deaths from tuberculosis in children and young adults are still being recorded, which indicates that activities for the prevention, diagnosis, and treatment of the disease—although they have steadily improved—are still not satisfactory (Figure 26). Mortality rates range from 0 to 10 per 100,000 young children and adolescents.

The highest levels of tuberculosis mortality are found in the most vulnerable groups: children and persons aged 75 or older. In the latter age group, the death rates tend to be very high in some of the countries, where they reach 100 or more per 100,000 population (Bolivia, Ecuador, and Honduras).

FIGURE 26

Age-specific mortality rates from tuberculosis in selected countries of the Americas, around 1987.



Source: PAHO (1989).

Morbidity

The risk of transmission of tuberculosis infection is directly related to the number of sources of infection (bacilli-shedding pulmonary patients) in the population. The risk of becoming ill, however, depends on the immune status of the infected person and on environmental conditions, which can have a detrimental effect. It is possible to infer the annual incidence of tuberculosis cases by measuring the annual risk of infection. Inversely, knowledge about morbidity rates makes it possible to estimate, with some limitations, the risk of infection.

Study of the risk of infection, which is fundamental for knowledge of the true magnitude of the disease problem, is not easy to do, especially because of the widespread use of BCG in the Region. Knowledge of morbidity is obtained by case-finding and diagnostic activities and is reflected in case notifications. Limitations in these activities lead to underestimation of morbidity and, with a few exceptions, this is the situation that now prevails in the Region. Each percentage point of infection risk translates into the occurrence of about 50 bacilli-shedding cases per 100,000 population annually. The estimated risk of infection in North America is very low (less than 0.2%). The risk is similar in Cuba, while the countries of the English-speaking Caribbean present an intermediate situation, with infection risks of about 0.5% or possibly less.

In Latin America there are wide variations in the risk of infection. Although the average is between 1% and 1.5%, there are extremes in both directions. Estimates for Costa Rica and Uruguay are 0.2% and 0.5%, respectively, while for Haiti and Bolivia, they are 2% and 4%. In the rest of the countries the risk of infection is closer to the average.

The report of a working group that met in 1982 indicated that Latin America as a whole had an incidence of bacilli-shedding cases of 80 per 100,000 population, and that the decline in rate was less than 5% annually in some of the countries and nil in others (WHO, Document EB71/PC/WT/1982). Thus, the number of bacilli-shedding cases that occur each year in Latin America would be between 240,000 and 290,000, with an annual incidence rate of 70 per 100,000 population. These rates vary substantially from one country to another, and it is estimated that in the 1980s the incidence has been less than 10 per 100,000 in Canada, Cuba, and the United

States; around 20 in the Bahamas and Venezuela; around 30 in Argentina and Uruguay; between 40 and 50 in Brazil, Chile, and Mexico; more than 70 in El Salvador, Guatemala, Honduras, and Nicaragua; and more than 100 or 200 in Bolivia and Haiti.

A single country may show major differences among its regions. For example, in Argentina in 1988 the national rate of bacilli-shedding cases was 19.6 per 100,000 population, while it was 11.6 in the federal capital, 29 in Corrientes, and 74 in Jujuy.

The true incidence of tuberculosis in Latin America is difficult to discover because the degree of coverage by the general services varies, the standards for case-finding are only partially fulfilled, and the registration of diagnosed cases is incomplete. The 200,000 cases reported each year would suggest that about 20% to 33% of the cases remain unknown or unnotified. This estimate is based on the extent of coverage by the services, the degree of fulfillment of program activities, the morbidity reported, and estimates of infection risk.

Based on the information available, the 1982 working group may have underestimated the magnitude of the problem, and lack of awareness of cases may be even greater. Some countries estimate that the number of unknown cases is as high as 50% or 60% of the true incidence. The incidence must include the accumulation of undiagnosed cases that evolve naturally over two or more years, ending in death or spontaneous cure, as well as those cases that are inadequately treated and also end in death or cure, but can be infective for more prolonged periods.

The spread of AIDS in high-risk groups in Latin America, among whom the prevalence of tuberculosis infection is generally more than 40%, creates the potential for increased morbidity, a situation already being observed in the United States.

Control Programs

Almost all the countries of Latin America have developed and implemented control programs based on the recommendations of the Organization. An important development has been the integration of those programs into general health care and prevention activities. This process, initiated more than two decades ago, is still under way in many of the countries. Unquestionably, integration has been a great success as a strategy for extending coverage, improving access to services, and offering an appropriate diagnostic and therapeutic technology, having vastly exceeded the limited reach of specialized services. However, problems still remain. A sizable proportion of the care units in the general services (20% to 30% in some of the countries) do not include activities of the tuberculosis control program in their regular work. Specialized units continue to attend to large numbers of patients, many of whom will abandon treatment. In addition, a large number of patients are never diagnosed or are diagnosed too late.

Several factors account for deficiencies in the implementation of integration. This strategy substantially increased the number of personnel directly involved in providing tuberculosis control services, but in many cases those responsible for management and leadership of the specialized services were not retained or replaced, nor was consideration given to establishing a system of supervision, surveillance, training, and effective evaluation that would enable the program to progress and improve. Despite these difficulties, significant advances have been made toward integration, and undoubtedly the development of local health systems will help to improve the situation.

Case-finding and Diagnosis

There has been steady progress in diagnostic activities based on sputum examination. Many of the basic laboratories that serve the health units have personnel who are qualified to perform this examination in accordance with technical standards. However, in most cases this installed capacity is not used to its full potential because symptomatic respiratory cases are rarely seen in the care units, large numbers of tests are backlogged in just a few laboratories, and tuberculosis case-finding activities are not always included among the laboratories' regular activities.

Another increasingly important factor is the development of local laboratory networks, including a local reference laboratory that ensures technical supervision, quality control, training, logistics, and participation of the laboratory area in program management. The local reference laboratories, in turn, should have links to a regional or national reference laboratory, a situation that already exists in most of the countries, but with varying degrees of development and efficiency. The cooperation of PAHO's Pan American Zoonosis Center and of the Laboratory Center for Disease Control, Health and Welfare, Canada, together with the work of the Latin American Commission of Tuberculosis Bacteriology Laboratories, has been fundamental in defining and developing the important role of the laboratory in control programs.

In the immediate future, technical limitations will need to be overcome relative to the capacity to perform culture studies for diagnosis and for operational and epidemiological surveillance. The same applies to immunological technologies for the diagnosis of paucibacillary patients, which in some cases are urgently needed (to diagnose tuberculous meningitis, for example). The diagnostic de-

mand prompted by the spread of HIV will necessitate increased development of such techniques.

Treatment

In 1979, short-course treatment with rifampicin, isoniazid, and pyrazinamide was only in use in some operational studies being carried out in a few countries of the Region. That year, the III Regional Seminar on Tuberculosis, convened by PAHO, recommended broad and prompt use of this drug regimen.[42]

Almost all the countries have incorporated this recommendation within the standards of their control programs and have allocated resources—though not always sufficient—to make the necessary drugs available. The development of schemes that are simpler and easier to administer has helped to lower costs. Given the complete effectiveness of the treatment regimen (as evaluated from rates of cure, death, and retreatment of patients who stopped prematurely or who experienced relapse or treatment failure), the conclusion has been reached that short-course treatment is cheaper and has a much higher cost-benefit ratio than conventional therapy. At present, the short-course regimen makes up almost 70% of the tuberculosis treatment being given in the Region, and it is hoped that before the end of the 1990s all treatment will be of this type.

As with conventional therapy, short-course treatment requires excellent organization. Cases resistant to treatment and the proportion of treatment dropouts, which normally should not be more than 5% to 8%, reach levels of 40% or more in some of the countries. A considerable portion of the problem of treatment dropouts is attributable to access difficulties. This situation can be improved by having the program activities carried out, even at the lowest levels of the health services, entirely by personnel who are trained and organized for this purpose, in order to safeguard the patient's right to be served well and on a timely basis without having to travel far from where he or she lives. Nurses play a substantial role in the organization of case-finding, diagnosis, and treatment services; their work, as well as that of the laboratory professionals, is essential to the success of the program.

The cohort analysis methodology for the evaluation of treatment efficiency and effectiveness is being progressively extended throughout the Region. This effort has produced feedback that has resulted in the enhancement of the programmed activities and has served as a stimulus to those responsible for the program.

A remaining problem is how to treat special population groups that are marginalized either geographically (those living in jungles, deserts, or mountains) or socially (drug addicts, the homeless). Among the possible solutions are low-cost hospitalization (bed and meals), half hospitalization (shelter during the day plus meals), and controlled treatment, or even treatment carried out by community volunteers. For some groups, such an intervention will not be possible without the appropriate sociocultural approach to make it acceptable and desirable.

Notwithstanding the foregoing discussion, an important achievement in recent years is that, except for persons with severe disease or associated pathology, at least 90% of the cases of pulmonary tuberculosis can be treated on an ambulatory basis from the beginning. The classic tuberculosis sanatoriums have almost disappeared from the Region, for there is no way to justify their cost of operation compared with that of a tuberculosis control program that is integrated into general care units.

Prevention

In North America, vaccination with BCG is not recommended except in unusual situations. In Latin America, however, because of an epidemiological situation that features numerous sources of infection, many of which go undiagnosed for a long time, BCG continues to be an indispensable preventive measure. During the 1980s, early vaccination (in newborns if possible) was emphasized as the most effective way to protect against natural infection.

This assumption is confirmed by an analysis of death rates: in those countries where more than 90% of the newborns are vaccinated with BCG, child mortality from tuberculosis has disappeared. A reasonable objective is to achieve optimum coverage with BCG, thus eliminating or substantially reducing a health problem that may cost the lives of more than 1,000 children in the Region every year and causes tens of thousands more to endure sometimes-painful treatments or to live with long-term limiting sequelae.

Budget

In many cases, integration of the program into the general services and the transformation of tuberculosis sanatoriums into general hospitals have not been accompanied by the transfer of those budgets to help cover operations of the program within the general services. The incorporation of tuberculosis activities has often meant having to find funds within an already-overburdened budget to meet, albeit only partially, the needs of the tuberculosis program. Managers of the programs have had to use all their resources to maintain operations and, despite the generally depressed economic situation, this has been accomplished in Latin America, although in many instances with severe limitations.

[42]PAHO Scientific Publication No. 418, 1981.

Future Outlook

Over the relatively short term, the programs should try to eliminate tuberculosis mortality in children and achieve an annual reduction in mortality and morbidity of more than 7%. These goals will necessitate an expansion of program activities, improved coverage, the generation of key information used in the local health systems to monitor progress or shortcomings of these activities, and the availability of laboratory and pharmacy resources as needed.

From the point of view of cooperation, the foregoing means continuing to support the dissemination of information, personnel training, and improvement of information use; maintaining up-to-date analyses of country situations; channeling efforts to subregions and countries that have the most serious problems; and encouraging countries to carry out similar measures within their borders.

Zoonoses and Vesicular Diseases in Animals

Despite the advances achieved in disease control and the extension of health services coverage, the incidence levels of zoonoses and communicable diseases common to man and animals continue to be high in all the developing areas, and several of these diseases are prevalent in some animal species that humans depend on for food.

Latin America and the Caribbean area, with slightly more than 400 million inhabitants, contain 8.2% of the world's population, while at the same time they have 19.9% of the world's cattle, 9.5% of the goats, 9.7% of the pigs, 32.2% of the horses, and 11.7% of the domestic birds. In other words, the ratio of human-to-domestic animal population is higher in this Region than elsewhere in the world. However, proportionally, these animal populations are not as productive as those in other regions. For example, despite the fact that Latin America and the Caribbean have 19.9% of the world's cattle, compared with only 9.2% in the United States of America and Canada, Latin America and the Caribbean produce only 17% of the world's beef and 7% of its milk, while the United States and Canada produce 23% of the beef and 13.6% of the milk. That is, Latin America and the Caribbean, with double the pasture area and twice as many head of cattle as the United States and Canada, produce only three-quarters as much beef and half as much milk. Moreover, despite having 9.7% of the world's pigs, Latin America and the Caribbean produce only 4.4% of the pork, and with 11.7% of the domestic fowl population, only 10% of the poultry and 8.7% of the eggs.

In 1985, Latin America and the Caribbean had an average per capita availability of 37.4 kg of meat and 86 kg of milk per year, while the figures for North America were 115.4 kg of meat and 281 kg of milk. During the 1980–1985 period, agricultural and livestock food production in Latin America declined 8% relative to base year 1980, while in North America it increased by 1.5%. During that same period the annual population growth rate, one of the factors that determines food demand, was 2.3% in Latin America, while it was only 0.91% in North America.

The differences in productivity between Latin America and the developed areas of the world can be attributed to various factors, among them the limiting effect of animal diseases, including the zoonoses. The general status of the principal zoonoses and animal vesicular diseases in the Americas is reviewed in the sections that follow.

Rabies

Rabies is the most important zoonosis in the Region, since it occurs everywhere except some of the Caribbean islands. The countries can be divided into two epidemiological groups: those in which wild species have greater public health importance—including Canada, Cuba, the United States of America, and Grenada—and the rest of the countries in the Region, where dogs play the main role in transmitting and disseminating rabies.

During the 1985–1988 period, mortality from rabies declined in almost all the countries of the Americas. In some of them, however, the decrease has not been steady, for example, in Brazil. In others, such as Bolivia, El Salvador, and Mexico, there have been recent increases (Table 78).

Mexico and Brazil continued to have the largest number of deaths from rabies (35% and 21% of the total, respectively), but the latter country recorded a decline of 64% relative to 1980–1984. Although the number of human rabies cases fell in Colombia, Ecuador, and Peru, the reduction was not as significant as in other countries. The age and sex distribution of cases followed classic patterns: 56% of the cases were in the population under 20 years of age, with males predominating by a ratio of more than 2:1 (Table 79). An estimated 1% of the population suffers animal bites each year, which in Latin America would equal between three and four million people. In rabies-affected countries, medical care for bites is usually sought at the health centers, where approximately one-third of all the persons bitten receive specific treatment.

Since the number of human cases is related to the number of rabid dogs, the countries with the largest numbers of rabid dogs are the ones that usually have the most cases of human rabies. The importance of the dog as a source of rabies transmission can be seen in Table 80,

TABLE 78

Average annual number of reported cases of human rabies in the Americas in 1970–1979 and 1980–1984, and annual cases in 1985–1989, by country.

Country	Average for the period		1985	1986	1987	1988	1989
	1970–1979	1980–1984					
Argentina	8.0	1.6	—	—	—	—	—
Belize	1.0	—	—	—	—	2	2
Bolivia	4.0	10.0	7	8	16	17	11
Brazil	114.0	124.0	52	33	37	37	49
Canada	1.0	0.2	1	—	—	2	—
Chile	1.0	—	—	—	—	—	—
Colombia	14.0	20.2	13	10	10	11	13
Costa Rica	1.0	—	—	—	—	—	—
Cuba	1.0	—	—	—	—	—	—
Dominican Republic	3.0	4.4	4	8	4	3	—
Ecuador	21.0	28.8	16	10	7	2	24
El Salvador	10.0	16.0	24	11	11	26	1
French Guiana	—	—	—	—	—	—	—
Grenada	1.0	—	—	—	—	—	—
Guatemala	4.0	5.4	7	10	12	11	13
Guyana	—	—	—	—	—	—	—
Haiti	2.0	2.4	2	4	1	2	1
Honduras	6.0	7.0	5	5	4	1	4
Mexico	65.0	51.0	84	85	60	72	64
Nicaragua	2.0	2.6	—	2	4	1	1
Panama	1.0	—	—	—	—	—	—
Paraguay	2.0	3.2	3	9	—	...	—
Peru	14.0	27.8	22	7	5	20	41
Suriname	—	—	—	—	—	—	—
Trinidad and Tobago	—	—	—	—	—	—	—
United States	2.0	1.4	1	—	1	...	—
Venezuela	7.0	8.8	4	3	3	1	—
Total cases (Annual average)	289.0	314.8	245	205	175	208	224
Annual average, 1985–1989: 211							

Source: Regional Program for the Elimination of Urban Rabies in Latin America by the End of the 1980s, CEPANZO, 1989.

which shows that canines were responsible for 76.2% of all the human deaths from rabies in 1986–1987.

During the period 1986–1989, Costa Rica, French Guiana, Guyana, Panama, Suriname, Trinidad and Tobago, Uruguay, and the countries of the Caribbean continued to be rabies-free, while Argentina, Brazil, Colombia, and Peru achieved sizable reductions in canine rabies. The highest numbers of canine rabies cases occurred in Bolivia, Ecuador, and Mexico, with Mexico accounting for approximately 58% of all the cases during the period. Canine rabies is on the decline in almost all the countries, with the exception of Mexico, thanks to continued surveillance and vaccination of dogs.

According to a study of rabies in cats, cattle, and other domestic animals published in 1989 by the Pan American Zoonoses Center (CEPANZO), the period 1985–1988 saw reductions of rabies in these species of approximately 41%, 15%, and 36%, respectively, relative to 1980–

TABLE 79

Mortality from rabies in the Americas, by age and sex, 1986–1987.

Age (years)	Females		Males		Both sexes	
	No.	%	No.	%	No.	%
0–10	28	30.4	64	69.6	92	38.5
11–20	11	26.2	31	73.8	42	17.6
21–40	15	29.4	36	70.6	51	21.3
41–60	11	36.7	19	63.3	30	12.6
61 and over	10	41.7	14	58.3	24	10.0
Total	75	31.4	164	68.6	239[a]	100.0

[a]Of the 407 cases reported in 1986–1987, information on age and sex was only available for 239.
Source: CEPANZO, 1989.

TABLE 80

Reported cases of human rabies in the Americas, by animal species responsible for transmission, 1986–1987.

Species	Cases	%
Dog	182	76.2
Bat	16	6.7
Cat	9	3.8
Fox	4	1.7
Skunk	2	0.8
Unspecified	26	10.8
Total	239[a]	100.0

[a]Of the 407 cases reported in 1986–1987, this information was only available on 239.
Source: CEPANZO, 1989.

1984. Canada, the United States, and Suriname were the only countries that reported more cases of feline rabies than canine rabies. Cats contract rabies mainly from dogs and do not constitute an important reservoir of the virus.

Rabies is transmitted to cattle mainly by hematophagous bats but sometimes also by dogs or other wild species. Between 1970 and 1988 the number of reported cases declined, owing perhaps not only to smaller numbers of cases but also to underreporting and notifications based on affected herds rather than numbers of affected animals.

Rabies occurs in wild species throughout the Region of the Americas, but this problem is especially serious in North America and the Caribbean, where some of these species are reservoirs. Apparently, the rabies enzootic in North America has now stabilized. The principal reservoirs in North America are foxes, skunks, and raccoons, and their importance varies from one geographic area to another. In the Caribbean the mongoose is the principal wild reservoir.

Brucellosis

Brucellosis is another important zoonosis, not only because of the disease it causes in humans but also because of the economic losses it produces. At least one-half million human cases are estimated to occur yearly worldwide, and the disease is widespread throughout Latin America and the Caribbean. It is estimated that the losses caused by bovine brucellosis in the entire Region amount to no less than $US270 million per year. Table 81 shows the number of cases reported by some of the countries during the last decade. The absence of some countries from that list or lack of data for recent years does not indicate that the disease is absent; its presence has been verified in almost all the countries. Large differences can be seen between countries in numbers of cases, and considerable underreporting occurs, either because of lack of confirmed diagnosis or because of deficiencies of the information system. For example, in Mexico the morbidity and mortality figures for brucellosis have fluctuated because of modifications introduced in the data recording systems owing to structural changes in the control programs. In that country, morbidity fluctuated between 3.9 and 6.9 per 100,000 population from 1960 to 1986, with 1,856 cases in 1960 and 5,552 in 1986; between 1978 and 1982, 163 deaths were recorded, with an annual average of 32.6—although underreporting was probably considerable, as was failure to mention brucellosis as a cause of death on death certificates.

The human disease stemming from bovine brucellosis (*Brucella abortus*) is epidemiologically linked to either contact between the livestock worker and the animal's aborted fetus or placental material or consumption of raw milk and its products.

In the countries where the disease exists, the proportion of establishments with reactor animals can be as high as 20% or more, and the proportion of positive animals in a country or certain regions of it ranges between 0.1% and 5% to 10%. Isolated studies of pigs suggest that the overall prevalence of reactors to *Brucella suis* is between 0.5% and 2%, with marked variations depending on the type of farming operation and the technology being used.

The presence of brucellosis in goats is of special interest because that species transmits *Brucella melitensis,* the most pathogenic strain for man. The disease is limited mainly to marginal areas where these animals are bred, and it is a serious problem in the Americas in three regions: the southwestern United States and Mexico, Peru, and northeastern Argentina. The prevalence of reactor animals varies from 2% to 10%. The most serious human health risk

TABLE 81

Reported cases of human brucellosis and rates per 100,000 population in selected countries of the Americas, 1978–1986.

Year	Argentina		Colombia		Mexico		Peru		United States	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
1978	1,855	7.0	160	0.7	545	0.9	330	2.1	242	0.1
1979	2,058	7.6	56	0.2	...	...	366	2.2	142	0.1
1980	1,615	5.8	79	0.3	...	...	395	2.3	183	0.1
1981	1,713	6.1	168	0.7	...	...	381	2.2	159	0.1
1982	...	...	209	0.8	...	...	326	1.8	146	0.1
1983	...	...	435	1.6	4.300	5.8	333	1.8	200	0.1
1984	...	...	...	...	...	...	925	4.8	120	0.0
1985	1,552	5.1	65	0.2	...	...	1,145	5.8	133	0.1
1986	594	1.9	...	...	5.552	6.9	1,138	5.6	...	...

Source: CEPANZO, 1989.

is associated with the consumption of products made from raw goat's milk. There are very effective vaccines for the control of caprine brucellosis, but their use in Peru declined in recent years because of scarce resources, resulting in increased incidence of the disease in that country of late (Table 81).

Leptospirosis

The risk of contracting leptospirosis is strongly associated with specific environmental and working conditions. Leptospirosis is endemic in the tropical regions, the highest rates of the disease being found in areas where rainfall is abundant. Most cases occur during the rainy season.

Table 82 shows data for countries where specific information is available and reveals that the disease is more frequent than is usually thought. Underreporting of cases due to lack of confirmed diagnosis was found in a study done in Mexican hospitals; of 6,880 patients with febrile conditions, 487 (7%) were found to have positive serology. Also, in a study conducted on pig farms in that country, 1,030 (39%) of 2,640 persons examined were found to be positive. Prevalences in the animals of up to 61% have been found on some pig farms in Mexico.

In Brazil, the overall case-fatality rates for 1986 and 1988 were 9.4% and 6.9%, respectively. According to a special report, during two months in the summer of 1988, 1,061 cases and 50 deaths were recorded in Rio de Janeiro.

TABLE 82

Reported cases of human leptospirosis in selected countries of the Americas, 1983–1988.

Country	1983	1984	1985	1986	1987	1988
Barbados	29	29	31	33	26	18
Brazil	...	...	1,794	1,925	1,482	1,613
Cuba	204	308	...	302	173	314
French Guiana	...	17	3	2	8	...
Jamaica	181	312	...	608	195	360
Suriname	27	23	15	5	7	14
Trinidad and Tobago	27	41	23	23	20	37

Source: CEPANZO, 1989.

Bovine Tuberculosis

Tuberculosis caused by *Mycobacterium bovis* in the human population is associated with the consumption of milk and milk products that have been neither pasteurized nor boiled. In a collaborative study undertaken by several diagnostic laboratories in Argentina between 1982 and 1984, *M. bovis* was identified in 36 (0.47%) of 7,672 tuberculosis patients. Based on a conservative estimate that 2% of pulmonary cases and 8% of extrapulmonary cases can be attributed to *M. bovis,* some 7,000 human cases of zoonotic tuberculosis occur each year in the Region of the Americas.

Distribution of the disease in bovines varies greatly in the Region. Prevalence is low in Canada, Costa Rica, Cuba, Jamaica, Panama, the United States, and Venezuela, where there are control and eradication programs. In the remaining countries, general prevalence ranges between 1% and 10%, although only rarely does it exceed

1%. The highest levels are found in the areas of dairy cattle production.

Hydatidosis

The populations of periurban areas, especially near abattoirs where sheep or cattle are slaughtered, are at high risk of contracting hydatidosis, either because of inadequate sanitation around these installations or because people feed the viscera of sheep and cattle to their dogs.

Prevalence of the human disease in the Americas is greatest in Argentina, southern Brazil, Chile, the Peruvian highlands, and Uruguay. It is estimated that 1,500 human cases are treated surgically in Argentina and Uruguay each year.

The rate of infection in dogs is highly variable. Figures from different studies and control campaigns indicate that it ranges from 1% to 70%, depending on the dogs' access to raw sheep viscera.

The prevalence of carriers in cattle is estimated on the basis of veterinary inspections of abattoirs. In the affected areas of the Region, the proportion of confiscations for hydatid cysts varies from 10% to 30% or higher. In Chile, where hydatidosis is the most important zoonosis, this proportion has been 11%.

Infection rates are higher in sheep than in cattle. In some areas, up to 80% or 90% of animals have been reported to have cysts.

Trichinosis

The countries where this zoonosis is most common are Argentina, Chile, and Uruguay. The case-fatality rate for recorded cases is around 1%. In isolated postmortem studies carried out in Chile, Mexico, and Uruguay, up to 3% of persons who died from other causes were found to be asymptomatic carriers.

Taeniasis and Cysticercosis

It is difficult to estimate the number of persons infested with the cestodes *Taenia saginata* and *T. solium* or their corresponding larval stages *Cysticercus cellulosae* and *Cysticercus bovis*. Taeniasis is diagnosed from stool examinations, and no known studies of population groups have been done for this purpose. However, there is evidence of widespread infestation at the lowest socioeconomic levels. Poor hygienic conditions perpetuate the cycle of transmission between man and susceptible domestic animals, and also add to the risk of people contracting cysticercosis by ingesting the parasite's eggs. Since the cysticerci can lodge in the nervous system or the ocular or periocular tissues, this zoonosis is especially serious.

In Peru there were 290 recorded cases of cysticercosis and 22 deaths between 1980 and 1986, and in Colombia, 153 cases and 4 deaths between 1980 and 1987. Postmortem studies have revealed cysticerci in from 1% to 3% of autopsies in Mexico, and in 3.2% of a series of 8,249 autopsies in Brazil. In Ecuador the rate of cysticercosis increased from 0.13 per 100,000 population in 1983 to 1.73 per 100,000 in 1987, while the rate of taeniasis went from 0.86 in 1984 to 29.51 in 1987.

The number of pigs with cysticercosis found in abattoirs subject to veterinary inspection reveals relatively low infection levels, namely, 0.1 per 1,000 to 0.1 per 10,000. However, in some studies prevalence has been as high as 5%. It should be noted that cysticercosis is one of the most common diseases in pigs bred in the countryside, and many of these animals are not slaughtered in licensed abattoirs that receive proper veterinary inspection.

The prevalence in cattle is also variable. In Peru, 1984 data from abattoirs in Lima and Tacna showed a prevalence of 0.7 and 4.6 per 1,000, respectively. In Arequipa the prevalence was 3.1 per 1,000.

Equine Encephalitis

Since the epizootic of Venezuelan equine encephalitis that occurred in 1969–1971, the number of cases in the Americas has declined thanks to the use of effective vaccines in the countries that were at greatest risk because of their special ecological characteristics. However, much less information is being exchanged.

No human cases have been recorded in the Americas since 1983 (Table 83). During 1985–1986, the cases in horses were limited to Brazil, Colombia, and Central America.

Vesicular Diseases in Animals

The vesicular diseases, including foot-and-mouth disease, are responsible for major food supply losses, public health damage, and socioeconomic repercussions in the developing countries. Their presence imposes severe restrictions on the domestic and foreign marketing of products of animal origin and even other agricultural products, and the diseases also interfere with access to, and the most effective distribution of, these products in regions with different ecosystems. Vesicular stomatitis caused by the New Jersey and Indiana viruses is another disease that has reduced animal production in several of the countries, and as a zoonosis it is an important occupational disease in rural areas, although its frequency has not yet been accurately determined.

A conservative estimate of the physical losses in South America due to decreases in animal weight and milk production, together with deaths caused by foot-and-mouth disease, gives a figure of $US210 million per year, not

FIGURE 27

Geographic distribution of vesicular diseases in the Americas, 1989.

Source: PAHO (1989).

TABLE 83

Reported cases of equine encephalitis in the Americas, 1972–1986.

Year	Humans	Equines
1972	439	9,013
1973	6,522	6,046
1974	—	182
1975	5,077	165
1976	4,644	84
1977	4,549	151
1978	2,602	184
1979	27	241
1980	840	190
1981	162	621
1982	—	368
1983	6	360
1984	—	69
1985	—	140
1986	—	165

Source: Report on the Epidemiological Surveillance of the Equine Encephalitides in the Americas, 1985–1986. V Inter-American Meeting, at the Ministerial Level, on Animal Health (RIMSA), 1987.

including commercial losses. To this figure must be added public sector expenditures to combat the disease and keep it at its current low levels, which is estimated at between $US60 million and $US80 million per year, plus the amount spent by the private livestock owners, which comes to more than $US230 million annually. The Food and Agriculture Organization (FAO) of the United Nations considers that the animal vesicular diseases cause losses of up to 35% of potential livestock production in the developing countries and about 7% in the industrialized countries.

The countries of the Americas can be divided into four regions based on the presence of foot-and-mouth disease and vesicular stomatitis (Figure 27).

- Countries free of both diseases: Canada, countries of the Latin Caribbean and non-Latin Caribbean, and Chile.
- Countries with vesicular stomatitis only: countries of Middle America and the United States of America.
- Countries with regular occurrence of both diseases: Colombia, Ecuador, Peru, and Venezuela.
- Countries with regular occurrence of foot-and-mouth disease only: Argentina, Bolivia, Brazil, Paraguay, and Uruguay.

Food and Nutrition Situation

Virtually all the Latin American and Caribbean countries have been undergoing a severe economic crisis since the beginning of the 1980s, and in some of the Region's countries, major natural disasters, political unrest, and civil disturbances have compounded the effects of the crisis. As a result of these factors, the overall rise in food prices outstripped increases in wages in many countries, resulting in a drop in real purchasing power. Data compiled by the Economic Commission for Latin America and the Caribbean (ECLAC) show that during 1980–1987 there was a clear decline in real salaries in Chile, Costa Rica, Mexico, Peru, and Uruguay.

Given that food consumption is linked to real income levels, these data indicate that food consumption levels most probably deteriorated in some countries of the Americas, especially among the poorer population groups.

In addition, data on production indicate that 18 countries in the Region recorded a drop in the volume of food produced between 1976 and 1987 (Table 84). This is a source of grave concern, since in the past it had been thought that Latin America's basic food problem had to do with insufficient demand, rather than insufficient supply. In order to meet the growing demand, which mainly resulted from population growth, the countries, particularly those in Central America, imported more food and also sought multilateral or bilateral donors.

Food Availability

Food availability at the national level, which depends on such factors as policies governing food production, exports, marketing, and pricing, can be used as an indicator of the amount of food available for an average individual in a country in a given year. However, this indicator should be supplemented by data on income distribution and on the population living in extreme poverty. Moreover, it is very important to understand how the per capita daily availability, or apparent consumption, is distributed according to income categories.

Table 84 shows the per capita daily availability of energy for 1975–1977 and for 1984–1986. A comparison of these two periods shows increases in 31 out of 40 countries in the Region, and declines in only 9.

On the other hand, the food production index (FPI) increased in only 11 out of 29 countries and declined in the remaining 18. If this trend continues, many countries in the Region will suffer food shortages due to poor income distribution and to low production.

In order to maintain adequate food availability, the countries have had to import food and secure donations

TABLE 84

Per capita daily availability of energy and food production index (FPI), by country.

Country	Per capita calories per day			Per capita FPI (1979–1981) = 100		
	1975–1977	1984–1986	Difference	1976	1987	Difference
Antigua and Barbuda	2,036	2,089	+53	—	—	—
Argentina	3,358	3,191	−167	100	96	−4
Bahamas	2,293	2,695	+402	—	—	—
Barbados	3,047	3,185	+138	85	78	−7
Belize	2,510	2,585	+75	—	—	—
Bermuda	2,737	2,545	−192	—	—	—
Bolivia	2,049	2,128	+79	110	92	−18
Brazil	2,521	2,644	+123	98	109	+11
Canada	3,345	3,425	+80	105	110	+5
Chile	2,644	2,573	−71	92	106	+14
Colombia	2,246	2,550	+304	97	100	+3
Costa Rica	2,487	2,782	+295	108	92	−16
Cuba	2,630	3,107	+477	85	103	+18
Dominica	2,093	2,649	+556	—	—	—
Dominican Republic	2,109	2,464	+355	105	99	−6
Ecuador	2,111	2,058	−53	105	96	−9
El Salvador	2,071	2,151	+80	102	86	−16
French Guiana	2,481	2,737	+256	—	—	—
Grenada	2,099	2,401	+302	—	—	—
Guadeloupe	2,584	2,674	+90	119	125	+6
Guatemala	2,023	2,297	+274	104	88	−16
Guyana	2,431	2,456	+25	108	79	−28
Haiti	2,041	1,902	−139	106	96	−10
Honduras	2,084	2,078	−6	94	96	+2
Jamaica	2,662	2,581	−81	100	101	+1
Martinique	2,623	2,782	+159	138	136	−2
Mexico	2,668	3,148	+480	91	100	+9
Netherlands Antilles	2,724[a]	2,917	+193	—	—	—
Nicaragua	2,452	2,473	+21	115	73	−42
Panama	2,346	2,439	+93	95	94	−1
Paraguay	2,808	2,843	+35	92	109	+17
Peru	2,284	2,192	−92	118	96	−22
St. Kitts and Nevis	2,166	2,364	+198	—	—	—
Saint Lucia	2,201	2,499	+298	—	—	—
St. Vincent and the Grenadines	2,281	2,785	+504	—	—	—
Suriname	2,284	2,716	+432	86	102	+16
Trinidad and Tobago	2,686	3,058	+372	139	92	−47
United States of America	3,539	3,642	+103	96	93	−3
Uruguay	2,927	2,676	−251	112	103	−9
Venezuela	2,436	2,532	+96	100	90	−10

[a]Average 1981–1982.
Source: United Nations Food and Agriculture Organization. Food Balance Sheets and FAO Food, Agriculture, and Livestock Production Indices.

from international aid organizations. According to the World Bank's *World Development Report, 1989,* cereal imports rose from 11,234,000 metric tons in 1974 to 16,796,000 in 1987 in 19 Latin American and Caribbean countries for which information is available. On the average, imports rose by 49.5% during this period.

Food Consumption

Real food consumption mainly hinges on purchasing power, which, in turn, depends on income and on food prices. No aggregate data are available on food consumption at the country level or for specific population groups, but there are indications that consumption among the poor has deteriorated.

In the context of the economic restructuring in the countries of the Region, measures such as currency devaluation, export promotion, price liberalization, and elimination of subsidies have benefited the export, agricultural, and production sectors, but they have hurt the urban and rural poor because they have reduced their food consumption.[43] This economic restructuring probably has further eroded income distribution. According to 1987 data from ECLAC, the poorer 50% of the Latin American population received only 13% of total income. World Bank information for ten countries of the Region indicates that the poorest 40% of the population received between 7% and 23% of total income, while the wealthiest 10% received between 23% and 51%.

Biological Utilization of Food

Efficient biological utilization of food in large measure depends on a person's health status, which, in turn, is conditioned by access to water supply and waste disposal systems and to health services.

The high prevalence of infectious diseases among children, particularly diarrheal diseases, acute respiratory infections, and diseases preventable by immunization, increases nutritional requirements and interferes with the biological utilization of nutrients.

In 1983, more than 50% of the rural population in the Americas lacked water supply and sanitary waste disposal services; marginalized urban groups faced only a slightly better situation. In addition, about 140 million people have no access to health care services.

[43]E. Zuckerman, *Adjustment Programs and Social Welfare,* World Bank Discussion Paper No. 44 (Washington, D.C.: World Bank, 1989), p. 12.

Food Aid Programs

To improve the nutritional situation of the most vulnerable groups, the countries long have resorted to food aid programs. These efforts fall into two categories: programs for the overall population that distribute food through regular marketing channels, and food aid programs for low-income groups at greater nutritional risk.

The programs in the first category sell food as a way to generate monetary liquidity to finance specific programs and projects. Between 1984 and 1988, the United States, one of the major sources for this form of food aid, provided $US735.6 million worth of food, of which $US495.1 million (67.3%) went to Central America. Food assistance of this type is also obtained through loan agreements.

Regarding food aid programs in the second category, the overall cost of all efforts directed at the poor population is estimated at between $US2 billion and $US3 billion per year. The share of expenditures financed by the governments of the Region varies considerably. According to a recent World Bank study, some countries, such as Brazil, Costa Rica, Uruguay, and Venezuela, financed 100% of their maternal and child health care programs and school-lunch programs; other countries, such as Guatemala, Panama, and Peru, financed about one-third of such costs; Honduras financed 14% and Haiti, 1.7%.[44]

In most countries, except in those few that are trying to become self-sufficient in providing food aid to vulnerable groups, the number of applications for external food aid to nongovernmental, bilateral, or multilateral agencies has increased. The World Food Program is a case in point: from the time it was launched in 1962 until 1988 it provided a total of $US1.36 million to the countries of the Region; in 1988[45] ongoing projects amounted to a total value of $US663,000.

The University of Chile's Institute of Nutrition and Food Technology (INTA) conducted an analysis of food aid programs in Latin America and the Caribbean during 1970–1984 that included 126 programs in 26 countries. Of these, 94% were nutritional supplement programs, and only 6% were controlled subsidies for poor population groups.

Few of the programs analyzed had been evaluated, and those that had, had been evaluated by outside groups. This situation arises because, in general, no evaluation unit has been planned for and included in the budget at the outset, which makes it difficult to measure the programs' nutritional impact.

[44]World Bank, *Feeding Latin America's Children,* Internal Discussion Paper No. 0049, LATD/HRD (Washington, D.C., October 1989).

[45]World Food Program, *Progress Report,* 15 May 1989.

Indirect measurements used in the study indicate that the food supplement programs have a greater impact than do general subsidy programs. In addition, the former offer the possibility of integrating a variety of sectoral programs (health, education, sanitation, housing, etc.).

It also was concluded that food supplement and subsidy programs benefit the urban population more than the rural—possibly because of existing differences in the extent and adequacy of the infrastructure, particularly in health and education; because it is easier to manage programs in urban areas; and because of the urban population's greater purchasing power.

The Food and Nutritional Status of Children and Adolescents

Birthweight largely depends on the nutritional status of the mother during pregnancy and prior to conception. Given this, birthweight also becomes an indirect indicator for evaluating maternal nutrition and, up to a point, predicting the future development of the child. Although children born in hospitals are generally weighed at birth, this information is not always promptly and consistently recorded, and when a child is not born in a hospital or maternity clinic, the reported weight usually is unreliable. Consequently, when information is received from the countries, it is frequently difficult to know where it came from and how representative it is. Table 85 shows available information. The prevalence of low birthweight ranges from 3.8% to 16.6%, but in most of the countries reporting, it is below 10%. Many countries are trying to organize systems that will regularly and reliably collect this information.

During the 1980s, many of the Region's countries attempted to update their information on the prevalence of malnutrition by using anthropometric indicators compiled in surveys or obtained from food and nutrition monitoring systems. The indicators commonly used are weight for age, height for age, and weight for height compared against standard references.

Table 86 gives overall data on malnutrition based on low weight-for-age figures according to the latest information available. This table tries to present an overview of the malnutrition problem, rather than showing comparisons between countries, since the dates when the information was obtained, the sources, and the methodology for gathering it are different in each case. While national surveys provide a macroscopic view of the country, data from health service centers tend to be geographically limited and the extent to which they are representative largely depends on the coverage of the services.

The prevalence of malnutrition ranged from 2.1% to 38.0%. Prevalence in five countries was below 5%; in 13 countries it ranged from 5.0% to 9.9%; in five countries, from 10.0% to 14.9%; in five others, from 15.0% to 19.9%; and in four, from 20% to 38.0%. When the prevalence in each Latin American and Caribbean country is viewed in terms of the population under 5 years old projected for 1989, the Region's average prevalence is estimated at 15.9%, which means that about 9,600,000 children under the age of 5 in Latin America and the Caribbean suffer from mild or severe malnutrition.

Information for the United States, as shown in Tables 86, 87, 88, 89, and 93, corresponds to data provided to the Centers for Disease Control's Pediatric Nutritional Surveillance System by those states that participated in the program (about 70%). The data are based on measurements of children taking part in government-financed programs, such as the Food Aid Program for Women, Nursing Mothers, and Children run by the U.S. Department of Agriculture, and, as such, they are not representative of the country as a whole. The data correspond to the low-income population at risk for malnutrition.

Table 87 shows the prevalence of low height for age, which has been designated as chronic malnutrition. This condition is characterized by retarded skeletal growth,

TABLE 85

Percentage of low birthweights (under 2,500 g), by country.

Country	Year	%
Antigua and Barbuda	1983	3.8
Bahamas	1981	6.9
Barbados	1982	10.2
Cayman Islands	1979	8.7
Chile	1987	6.9
Costa Rica	1985	6.7
Cuba	1987	7.9
Dominica	1982	10.0
El Salvador	1986	8.6
Guyana	1987	16.6
Honduras	1984	9.2
Jamaica	1984	13.0
Montserrat	1984	12.4
St. Kitts and Nevis	1984	10.5
St. Vincent and the Grenadines	1984	8.0
Suriname	1980	13.0
Trinidad and Tobago	1981	10.2
Uruguay	1985	7.9
Venezuela	1984	6.6

Sources: CFNI, INCAP, and several national sources.

TABLE 86

Prevalence of low weight for age in preschoolers (total malnutrition), by country. (WHO classification.)

Country	Year	Number examined	Area represented	Malnourished children (%)
Antigua and Barbuda	1981	...	Health services centers	7.7
Bahamas	1986	...	Health services centers	2.1[a]
Barbados	1981	610	National survey	8.8
Belize	1981	...	Health services centers	6.2
Bolivia	1987	...	Health services centers	18.1
Brazil	1981–1982	2,000	Regional survey, State of Paraíba	18.1
British Virgin Islands	1984	...	Health services centers	5.9
Cayman Islands	1979	...	Health services centers	2.2
Colombia	1986	1,324	National survey	11.9
Costa Rica	1987	119,116	Health services centers	2.7
Chile	1986	207,379	Health services centers	2.4
Dominica	1984	...	Health services centers	5.0
Dominican Republic	1987	2,705	National survey	5.8
Ecuador	1986	7,798	National survey	16.5
El Salvador	1988	...	National survey	15.4
Grenada	1979	...	Health services centers	5.7[a]
Guatemala	1987	2,226	National survey	33.5
Guyana	1987	35,894	Health services centers	23.4
Haiti	1978	5,353	National survey	38.0
Honduras	1987	3,338	National survey	20.6
Jamaica	1985	2,886	National survey	14.6
Montserrat	1984	...	Health services centers	5.1
Nicaragua	1987–1988	...	Region III survey	10.9
Panama	1980	3,314	National survey	15.8
Paraguay	1976	41,750	National survey	2.9[a]
Peru	1984	...	National survey	13.4
St. Kitts and Nevis	1984	...	Health services centers	13.3
Saint Lucia	1985	...	Health services centers	8.0
St. Vincent and the Grenadines	1986	...	Health services centers	9.7

TABLE 86 (Cont.)

Prevalence of low weight for age in preschoolers (total malnutrition), by country. (WHO classification.)

Country	Year	Number examined	Area represented	Malnourished children (%)
Trinidad and Tobago	1987	842	National survey	6.8
United States of America	1988	1,058,504	Food aid program in clinics	4.1
Uruguay	1987	3,546	Health services centers	7.4
Venezuela	1981	6,747	National survey	6.4

[a]Gomez classification, second and third degree malnutrition.
Sources: CFNI, INCAP, and several national sources.

TABLE 87

Prevalence of low height for age in preschoolers (chronic malnutrition), by country. (WHO classification.)

Country	Year	Number examined	Area represented	Malnourished children (%)
Barbados	1981	560	National survey	3.6
Bolivia	1981	5,880	National survey	42.2
Brazil	1981–1982	2,000	Regional survey, State of Paraíba	38.2
Chile	1986	...	Health services centers	9.6
Colombia	1986	1,317	National survey	22.6
Costa Rica	1982	...	National survey	6.4
Dominican Republic	1987	2,705	National survey	12.8
Ecuador	1986	7,798	National survey	34.0
El Salvador	1988	...	National survey	26.8
Guatemala	1987	...	National survey	57.8
Honduras	1987	...	National survey	33.9
Panama	1980	2,702	National survey	25.1
Peru	1984	...	National survey	37.8
United States of America	1988	1,069,271	Food aid program in clinics	7.3
Uruguay	1987	2,833	Health services centers	15.9
Venezuela	1981	6,747	National survey	10.2

Sources: CFNI, INCAP, and several national sources.

which can occur at the time of birth, although it may not appear until several years later. The term "chronic malnutrition" is not completely satisfactory, since it gives the impression that the condition is an ongoing process, when, in fact, it may have simply been an episode in the past and the child could not, or has not yet been able to, recover his or her height for age despite favorable conditions.[46] Of all the reporting countries, 16 provided data for this decade and 9 submitted information for after 1984.

In 12 of 15 Latin American and Caribbean countries the data came from national surveys, while the information for 2 other countries came from the health services. The information for Brazil is from the State of Paraíba and, as in the case of weight for age and weight for height, it does not reflect the nationwide situation. There is a high prevalence of retarded height; in one country this problem affects more than 50% of the children studied and in another five countries, more than one-third of the children. Only in three countries is the prevalence of "chronic malnutrition" below 10%.

Low weight for height, or acute malnutrition, indicates a deficit of body tissue and fat compared with what is normally expected in a child of the same height. In 14 of the 19 countries where this information was collected, the data correspond to years after 1984 (Table 88). As cutoff points (comparable to −2 standard deviations), Barbados, Jamaica, and Uruguay took 80% of the median, while Cuba used the third percentile. In Venezuela, the information gathered from the food and nutrition monitoring system included children from 0 to 14 years old (although most were preschoolers), and the cutoff point was the tenth percentile.

In general, the prevalence of acute malnutrition is not very high. It is below 1.0% in five countries, between 1.0% and 1.9% in six countries, and between 2.0% and 2.9% in two countries. It may be concluded that most malnutrition in Latin America and the Caribbean is the result of a slow process of undernourishment associated with hereditary and environmental factors. The episodes of acute malnutrition due to a sudden and severe shortage of food or to acute infectious processes that place an additional burden on nutrient requirements are less frequent.

Table 89 compares the prevalence of the three types of malnutrition in the 12 Latin American and Caribbean countries for which information is available on the three indicators. It is interesting to note that there are substantial differences between acute and chronic malnutrition in most of the countries. The latter probably reflects a situation that has existed for generations.

[46]WHO Working Group, "Use and Interpretation of Anthropometric Indicators of Nutritional Status," *Bull WHO* 64:929–941, 1986.

In recent years, height surveys have been conducted among first-grade schoolchildren (generally between 6 and 9 years old). Although the height-for-age ratio does not reflect a child's nutritional status at the time, it is a good indicator of nutritional, socioeconomic, and general health conditions. While changes in prevalence come rather slowly, a height census has the advantage of being highly representative, since in most countries school system coverage is broader than that of the health services. In addition, since the data are gathered from a captive population, the surveys are logistically less complicated than household sampling. In some countries the teachers themselves, after receiving some training, measure the children and do the initial data analysis. The experience in the Central American Isthmus, where height censuses first started, has demonstrated their usefulness in identifying communities that have significant malnutrition and socioeconomic, health, and environmental sanitation problems. This enables authorities to plan programs and interventions based on priorities and according to available resources. The results of the latest surveys conducted in the Central American Isthmus, Bolivia, Chile, and Uruguay are shown in Table 90.

Trends in Nutritional Status

The variations in the prevalence of malnutrition in recent years are shown in Table 91, which uses the appropriate indicator on which comparable information exists for two periods and which is based on similar sources and cutoff points. Whenever possible, the preschool population has been compared. The weight-for-age indicator has been used in fifteen countries, weight for height has been used in two, and height for age in first-grade schoolchildren has been used in one (Panama). The interval between observations varies considerably, from 2 to 20 years. In some Central American and Caribbean countries the data from old surveys have been reanalyzed using the WHO classification, so that the trends in nutritional status can be studied. In the Dominican Republic, the data for 1969, using 90% of the median, are compared with the figures for 1987, using −1 standard deviation. In Nicaragua, the 1978 national survey is compared with the 1987 Region III survey. The changes in prevalence observed in this table should be interpreted carefully, considering the indicator, the prevalence at the time of the first observation, and the interval between the two observations. In general, the data suggest a decline in the prevalence of malnutrition, which has been significant in some countries (bearing in mind the foregoing consideration). The most dramatic change was in the Dominican Republic, where prevalence dropped from 75.0% to 28.8%—albeit over a period of 18 years.

TABLE 88

Prevalence of low weight for height in preschoolers (acute malnutrition), by country. (WHO classification.)

Country	Year	Number examined	Area represented	Malnourished children (%)
Barbados	1981	557	National survey	3.4
Bolivia	1981	5,880	National survey	0.7
Brazil	1981–1982	2,003	Regional survey, State of Paraíba	1.1
Chile	1986	...	Health services centers	0.5
Colombia	1986	1,324	National survey	1.0
Cuba	1987	...	Health services centers	0.9[a] 0,5[b]
Dominican Republic	1987	2,705	National survey	1.8
Ecuador	1986	7,778	National survey	1.7
El Salvador	1988	...	National survey	2.3
Guatemala	1987	...	National survey	0.4
Honduras	1987	...	National survey	1.9
Jamaica	1985	3,171	National survey	3.8
Nicaragua	1987	...	National survey	2.3
Panama	1980	2,702	National survey	6.1
Peru	1984	...	National survey	0.9
Trinidad and Tobago	1987	842	National survey	3.8
United States of America	1988	945,920	Food aid program in clinics	1.9
Uruguay	1987	2,792	Health services centers	1.6
Venezuela	1986	...	Health services centers	7.4[c]

[a]Children under 1 year old.
[b]Children 1–4 years old.
[c]Cutoff point, tenth percentile of the median.
Sources: CFNI, INCAP, and several national sources.

Although other countries show moderate declines in prevalence, the interval has been so long that the statistic may be considered virtually unchanged. Chile and Jamaica recorded a small increase of 0.3% each, but the difference is so small and the interval between observations so short that the change may be a result of random variation.

It is noteworthy that, despite the economic problems being experienced by the Region's countries, with the comparative increase in food prices relative to wages, a decline has occurred in the prevalence of malnutrition. Factors such as nutritional education undoubtedly have contributed to the improved utilization of food at the family level. It is likely that the situation also is improving as a result of food aid programs and programs for the prevention and control of infectious diseases, such as immunization and oral rehydration efforts.

Nevertheless, it should be kept in mind that, given the fact that in most of the countries the change is small as compared with total population growth, the problem of moderate and severe malnutrition (as shown in Table 86) remains very serious, particularly since the figures do not reveal the wide variations within single countries.

When available information is adequately broken down, it is possible to identify population groups in which the prevalence of malnutrition is highest, or those groups that are physiologically and socioeconomically vulnerable and that will bear the brunt of economic readjustments. For this reason, emphasis is being placed on establishing food and nutrition monitoring systems that

TABLE 89

Prevalence of low weight for age, low height for age, and low weight for height in preschoolers, by country.

Country	Year	Weight for age (%)	Height for age (%)	Weight for height (%)
Barbados	1981	8.8	3.6	3.4
Brazil	1981–1982	18.1	38.2	1.1
Chile	1986	2.4	9.6	0.5
Colombia	1986	11.9	22.6	1.0
Dominican Republic	1987	5.8	12.8	1.8
Ecuador	1986	16.5	34.0	1.7
El Salvador	1988	15.4	26.8	2.3
Guatemala	1987	33.5	57.8	0.4
Honduras	1987	20.6	33.9	1.9
Panama	1980	15.8	25.1	6.1
Peru	1984	13.4	37.8	0.9
United States of America	1988	4.1	7.3	1.9
Uruguay	1987	7.4	15.9	1.6

Sources: CFNI, INCAP, and several national sources.

TABLE 90

Prevalence of low height for age in schoolchildren, by country.

Country	Year	Number examined	Less than −2 S.D. (%)
Bolivia	1988–1989	34,099	25.3
Chile	1985	55,716	8.5
Costa Rica	1985	64,547	11.3
Guatemala	1986	205,959	37.4
Honduras	1986	170,299	39.8
Nicaragua	1986	100,265	22.0
Panama	1985	...	18.6
Uruguay	1987	47,160	4.0

Sources: CFNI, INCAP, and several national sources.

can regularly gather and process data from various relevant sectors; these data would be used to make decisions that would directly or indirectly affect the nutritional status of the population. Nutritional monitoring makes it possible to identify those communities at greatest risk and to establish priorities for the best possible use of resources.

Of the 25 countries that reported on their food and nutrition monitoring systems in 1988, 7 have multisectoral systems in place that carry out joint analyses of the food chain. In 14 countries, the nutritional monitoring system is a well-defined unit or program within the Ministry of Health or within a national institute of nutrition. Furthermore, most of the 25 countries have mechanisms for periodic monitoring of one of the anthropometric indicators of nutritional status. PAHO works with individual countries in establishing nutritional monitoring systems aimed at achieving the above-mentioned objectives—decision making and the identification of vulnerable groups. Many factors thwart efforts to use the information according to these objectives. The flow and analysis of information are very important factors, and they are related to the countries' capability to manage the data and to train their people to use it.

Specific Nutritional Deficiencies

Iron-deficiency Anemia

This deficiency may be due to inadequate intake, excessive loss, or an increased iron requirement. The first type, nutritional anemia, appears to be the most frequent one. Iron deficiency has functional repercussions on mental, endocrine, and immunological health, as well as on the capacity to perform physical labor. In addition, anemia during pregnancy is related to low birthweight. With notable exceptions, there is no up-to-date information on the prevalence of iron-deficiency anemia in the Region. However, data from the English-speaking Caribbean and

TABLE 91

Trends in nutritional status, by country.

Country	Year	Malnourished (%)	Year	Malnourished (%)	Indicator and classification	Area represented
Barbados	1975	10.2	1981	8.8	Weight for age, WHO	National survey
Bolivia (La Paz)	1985	23.0	1987	20.1	Weight for age, WHO	Health services centers
Chile	1984	2.1	1986	2.4	Weight for age, WHO	Health services centers
Colombia	1977	20.6	1986	11.9	Weight for age, WHO	National survey
Costa Rica	1978	12.3	1987	6.1	Weight for age, WHO	Health services centers
Cuba	1984	1.4	1987	0.9	Weight for height, WHO	Health services centers
Dominican Republic	1969	75.0	1987	28.8	Weight for age, cutoff point 90% of the median (−1 S.D.)	National survey
Ecuador	1965–1969	10.8	1986	9.7	Weight for age, Gomez, second and third degrees	National survey
El Salvador	1978	17.9	1988	15.4	Weight for age, WHO	National survey
Guatemala	1965–1967	36.5	1987	33.5	Weight for age, WHO	National survey
Guyana	1974	12.8	1986	10.7	Weight for age, Gomez, second and third degrees	Health services centers
Honduras	1965–1967	28.5	1987	20.6	Weight for age, WHO	National survey
Jamaica	1978	14.3	1985	14.6	Weight for age, WHO	National survey
Nicaragua	1978	27.1	1987	10.9	Weight for age, WHO	National survey/ Region III survey
Panama	1982	23.1	1985	18.6	Height for age, WHO	National survey
Peru	1975	10.7	1984	8.1	Weight for age, Gomez, second and third degrees	National survey
Uruguay	1980	2.8	1987	1.9	Weight for age, WHO	Health services centers
Venezuela	1982	9.8	1986	7.4	Weight for height, cutoff point tenth percentile	Health services centers

Sources: CFNI, INCAP, and several national sources.

some Latin American countries seem to conclude that prevalence is high, particularly among pregnant women. Table 92 shows that in the 19 countries for which relatively recent information is available, the prevalence of anemia among pregnant women ranges from 10.0% to 82.3%.

Children between 6 months and 2 years old are particularly at risk for iron-deficiency anemia, especially when they are born with insufficient iron reserves or low birthweight, are weaned too soon, or suffer repeated infections. In 14 countries for which information on the prevalence of anemia in preschoolers is available, the figures range from 12.9% to 69.1%; in 9 of these 14 countries it is over 20% (Table 93).

In the Caribbean, the percentage of schoolchildren with low hemoglobin levels ranges from 0.8% in the Bahamas to 57.0% in Guyana and 59.7% in the Turks and Caicos Islands. In 9 of the 12 countries with available information, the prevalence is higher than 20% in the population surveyed (Table 94).

Iodine-deficiency Disorders

Iodine deficiency remains an extremely serious problem in Bolivia, Ecuador, and Peru. In addition, some Andean areas have a high incidence of mental retardation and cretinism associated with endemic goiter (affecting up to 14% of the population in some areas). Table 95 shows the prevalence of endemic goiter based on surveys carried out since 1980. It also is still believed to be a public

TABLE 92

Prevalence of anemia (according to hemoglobin level) in pregnant women, by country. (Cutoff point: Hb = 11g/dl.)

Country	Year	%
Antigua and Barbuda	1980	58.0
Bahamas	1983	12.0[a]
Barbados	1981	29.1[b]
Belize	1984	64.8
Bolivia (La Paz)	1988	54.4[c]
British Virgin Islands	1979	10.0
Cayman Islands	1979	15.5
Costa Rica	1984	50.1
Dominica	1985	28.3
Grenada	1986	62.9
Guyana	1982	73.7
Jamaica	1982	61.6
Montserrat	1980	82.3
St. Kitts and Nevis	1982	42.0
Saint Lucia	1976	22.2
St. Vincent and the Grenadines	1983	20.4[a]
Suriname	1987	31.0[d]
Trinidad and Tobago	1976	53.0
Turks and Caicos Islands	1984	65.3

[a]Hb = 10g/dl.
[b]Hb = 11.5g/dl.
[c]Hb = 14g/dl, adjusted for altitude.
[d]Unknown.
Sources: CFNI, INCAP, and several national sources.

health problem in other countries, mainly on the western slopes of mountain ranges from Mexico to Chile.

Although endemic goiter and cretinism are the best known manifestations of chronic iodine deficiency in the diet, the problem is associated with a broad range of organic and functional disorders that seriously threaten the genetic potential of millions of people, who suffer from congenital abnormalities, deaf-mutism, and neurological defects of varying degrees.

The most cost-effective method of preventing endemic goiter is salt iodization. This method requires a uniform and stable mixture, as well as the assurance that the salt will reach the persons who need it and that they will regularly consume it.

The establishment of effective salt iodization programs requires adequate legislation and regulations; sufficient financing; high-level political decisions; administrative, technical, and operational support for production, marketing, and control of the salt; and education of the com-

TABLE 93

Prevalence of anemia in preschool children (according to hemoglobin level). (Cutoff point: Hb = 11g/dl.)

Country	Year	%
Argentina	1985	22.4[a]
Barbados	1981	14.9[b]
Cayman Islands	1979	52.7
Costa Rica	1982	12.9
Dominica	1982	60.0
Ecuador	1986	22.0
Grenada	1986	43.7
Guyana	1982	44.7
Honduras	1987	16.5
Jamaica	1982	69.1
St. Kitts and Nevis	1980	21.6
Saint Lucia	1975	14.3
Turks and Caicos Islands	1974	32.9[c]
United States of America	1988	16.3[d]

[a]Unknown.
[b]Hb = 10.5g/dl.
[c]Hb = 10g/dl.
[d]1-1.9 years old, Hb = 11.0g/dl; 2-4.9 years old, Hb = 11.2g/dl.
Sources: CFNI, INCAP, and several national sources.

TABLE 94

Prevalence of anemia in schoolchildren (according to hemoglobin level), by country. (Cutoff point: Hb = 12g/dl.)

Country	Year	%
Antigua and Barbuda	1981	17.9
Bahamas	1983	0.8[a]
Barbados	1981	25.4
Cayman Islands	1979	29.7
Dominica	1981	40.0
Grenada	1986	37.0
Guyana	1982	57.0
Jamaica	1969	4.8[a]
Montserrat	1986	45.5
St. Kitts and Nevis	1975	22.2
Saint Lucia	1974	36.4
Turks and Caicos Islands	1985	59.7

[a]Hb = 10g/dl.
Sources: CFNI, INCAP, and several national sources.

TABLE 95

Prevalence of endemic goiter in some Latin American countries.

Country	Year	Population	Area represented	Sample size	Classification	Prevalence (%)
Bolivia	1981	Schoolchildren	National	38,500	WHO adapted	60.8
Ecuador	1983	Schoolchildren	Mountains	...	WHO	36.5
Nicaragua	1981	Total	National	6,252	Pérez and Scrimshaw	20.0
Paraguay	1986	Schoolchildren	Five localities	2,049		59.8
Peru	1986	Schoolchildren	Mountains Jungle	35,125 35,125	WHO WHO	34.0 19.0
Uruguay	1980	Schoolchildren	Departments	1,254	Pérez and Scrimshaw	2.0
Venezuela	1981	Schoolchildren and adolescents	National	14,709	WHO modified	21.4

Source: Expanded program for the control of iodine deficiency disorders in Latin America. Document HPN/89.2. Washington, D.C., Pan American Health Organization, 1989.

munity to avoid non-iodized salt. Legislation on iodization should cover salt for both human and animal consumption, since iodine deficiency affects cattle production.

Table 96 shows that 16 out of 19 countries that provided information have legal provisions in effect that make salt iodization compulsory, and that 9 countries also require salt iodization for animal consumption. In all the countries, except in Uruguay, where the law applies only to endemic areas, coverage is nationwide. It should be pointed out that having legislation on the books does not guarantee that salt will actually be iodized. There are frequent violations, such as clandestine salt mining, illegal trade of non-iodized salt between countries, difficulties in acquiring the iodine compounds, and carelessness or lack of knowledge about the effects of iodization, even among high-level officials and in legally established industries.

In those communities where the consumption of iodized salt is hampered by problems of access, iodized oil can be used as effectively.

In the last five years, the joint PAHO/WHO–UNICEF Nutrition Support Program, conducted with the support of the Government of Italy, has helped control iodine-deficiency disorders in Bolivia, Ecuador, and Peru, all of which have serious problems of goiter and other forms of iodine deficiency. This program, launched in 1984, has significantly helped to increase the availability of iodized salt by organizing small producers, administering iodized oil to high-risk population groups, marketing and controlling iodized salt, and fostering community participation.

Vitamin A Deficiency

This condition changes cell metabolism, causes eye disorders, retards growth and development of immune mechanisms, and increases the risk of death among preschoolers. It occurs mostly in population groups with low calorie diets and wherever carotene-rich foods are scarce.

Based on information submitted by the countries in 1988, vitamin A deficiency is considered to be a public health problem in Haiti and in arid areas of the Brazilian northeast. In Haiti, it is estimated that 2% to 3% of the preschool population suffers from corneal lesions, at least in some areas of the country. In Brazil, serum retinol surveys have been conducted in certain municipalities, and the problem is known to exist in poor and densely populated areas.

In other countries of the Region, such as Bolivia, El Salvador, Guatemala, and Honduras, it is estimated that the problem may exist, but there is no solid up-to-date evidence.

As a result of studies conducted by the Institute of Nutrition of Central America and Panama (INCAP), it was established that in the 1970s the prevalence of vitamin A deficiency in children under 5 years old in Central America and Panama was between 18% and 43%. Several countries then launched programs for the fortification of sugar with retinol palmitate, which has reduced the problem significantly. Unfortunately, for various reasons including economic factors, this prophylactic measure was discontinued around 1980. It is necessary to evaluate other measures, such as the mass administration of doses

TABLE 96

National legislation requiring salt iodization, by country.

Country	Promulgation date	Start of iodization	Iodization of salt for animal consumption
Argentina	1967	1970	Yes
Bolivia	1968	1977	Yes
Brazil	1953	1957	No
Chile	1959 (repealed in 1982)	—	No
Colombia	1947	1959	Yes
Costa Rica	1941	1972	No
Cuba	No legislation	—	No
Dominican Republic	No legislation	—	No
Ecuador	1968	1973	No
El Salvador	1961	1972	No
Guatemala	1954	1959	Yes
Honduras	1960	1971	Yes
Mexico	1963	1963	No
Nicaragua	1969	1978	Yes
Panama	1965	1970	No
Paraguay	1958	1966	Yes
Peru	1969	1972	Yes
Uruguay	1961	1963	No
Venezuela	1966	1968	Yes

Source: Expanded program for the control of iodine deficiency disorders in Latin America. Document HPN/89.2. Washington, D.C., Pan American Health Organization, 1989.

of vitamin A during immunization campaigns. This has been done in El Salvador and Guatemala, where the strategy of combining the two activities has been shown to be effective.

Malnutrition and Chronic Diseases

At the other end of the nutritional spectrum is the progressive increase in pathological processes related to dietary excesses. In the English-speaking Caribbean, for example, the prevalence of obesity in women ranged from 24% to 39% between 1965 and 1971, and two comparable surveys in Barbados showed that obesity in men rose from 7% to 28% between 1969 and 1982. The increased prevalence of excess weight (estimated as a weight-for-height ratio of at least 120% of the reference figure) and obesity affects all groups of society, although for different reasons. In Chile, a recent study observed that 10% of upper-income women, 22% of middle-income women, and 40% of low-income women were overweight for their height. In Costa Rica, 5.1% of the children brought in for growth and development checkups in 1989, and 6.9% of those being monitored under the primary health care program, were overweight (data from the Monitoring System). In Antigua and Barbuda, 15.5% of the youths 15–19 years old had a weight-for-height ratio of at least 120% of the expected figure. In addition to obesity, many countries in the Region are seeing increases in other consequences of dietary excesses, such as hypertensive cardiac disease, other cardiovascular diseases, and diabetes.

Oral Health

The extensive prevalence of diseases of the oral cavity and their continuation at high levels are of concern in most countries of the Region. Countries appear to have recognized dental disease and the need to improve the oral health of the population as targets within the overall health programs. Most such programs illustrate a commitment to give priority to the health of children, but in the case of oral health the problem of how to implement

programs that are effective against the oral diseases prevalent in this population is compounded by the demographic growth in the developing countries of the Region. In many areas, this growth is greater than the increase in available dental professionals.

The factors affecting oral health are not solely related to the organisms causing disease in the oral cavity. The prevailing economic and social context in Latin America must be taken into account. The economic crisis has resulted in reduced availability of financial resources for the provision of programs and reduced capacity to acquire instruments and materials normally used in the maintenance of oral health, quite apart from the reduction in accessibility of dental services. Furthermore, the economic crisis has prompted changes in lifestyle among large segments of the population, with consequent changes in nutritional habits. The tendency toward increased carbohydrate intake has predisposed to even higher levels of dental caries.

Principal Problems

Dental Caries

During the years 1985–1989, eight countries conducted studies to determine the oral health situation, particularly in the school-age population, with respect to the most frequently encountered dental diseases, namely, caries and periodontal diseases. Many have used the WHO methodology,[47] and others have adapted basic epidemiological approaches for implementation in their countries, in keeping with available resources and mechanisms for obtaining such data. These latter systems have been developed with a view toward establishing follow-up studies.

Studies of oral pathology in Argentina indicated that it is a severe problem in that country. Eight of every ten children 12 years of age are or have been affected by dental caries, and only 35% of adolescents 18 years of age possess all their natural teeth. By age 50, one out of five members of the population is without natural teeth in his or her upper dental arch.

In Honduras, a national survey of 4,800 schoolchildren, conducted during 1988, indicated that oral disease continues to be a problem of considerable magnitude. The incidence of caries is such that only 2.01% of the population is considered to be free of dental caries. The same study estimated that the level of oral hygiene in the country, based on the presence of soft deposits and dental calculus, is extremely high in both urban and rural areas. For example, 96.8% of the persons sampled presented soft deposits on the teeth, 84.3% demonstrated signs of gingivitis, and 8.1% had evidence of periodontitis.

In Chile, 5% of schoolchildren present some type of oral health problem, and dental caries in the general population reaches 91%, with an average of 12.8 teeth/person lost by the age of 40 years. In the French Antilles, Guadeloupe, Martinique, and French Guiana, between 85% and 90% of children are believed to have oral health problems. In the Netherlands Antilles the extensive nature of dental caries in Curaçao indicates that approximately 17.6% of children aged 6 to 12 years have been affected by this disease. A recent survey in the Bahamas found that 22% of schoolchildren presented symptoms of dental caries, identifying it as the most frequent problem encountered in routine health programs for schoolchildren.

In Guyana, the percentage of the school population with oral health problems increased from 15.5% in 1985 to 20.6% in 1986. In addition, a previous study conducted in 1982 had shown the incidence of dental caries in children 6 years of age to be very high, according to standards set by a WHO classification. The same study indicated that oral hygiene in persons aged 6 to 15 years was between acceptable and poor.

A recent study in Nicaragua designed to examine the magnitude of oral health problems in schoolchildren 7 to 14 years of age reached the conclusion that the indices for dental caries in both permanent and deciduous dentition fell within the medium range, in comparison with the indices in other countries. The levels of dental disease in such populations must be taken into consideration when planning the capacity of the local health systems to respond to needs. Untreated dental disease—even limited dental disease—produces cumulative problems in older age groups of the population that require the use of professional resources.

According to the National Health Survey in Colombia, 96.6% of the population was affected by dental caries between 1977 and 1988. The capacity of the services to provide restorative treatment is limited and, as in many countries of the Region, is directed toward schoolchildren and pregnant women, with treatment systems based on demand.

In Uruguay in 1983, dental caries affected 98% and periodontal diseases affected 78% of the population. Another study in 1983, of 76,328 schoolchildren 6–14 years old and 2,382 students 15–19 years old, found that the DMF (decayed, missing, filled) index was 3.2 for the age group 6–14 and 8.5 for those 15–19, indicating the need for implementation of mass preventive programs in that country.

The School Health Service in Suriname conducted an epidemiological survey in 10,482 schoolchildren during

[47] *Oral Health Surveys. Basic Methods* (3rd ed.) (Geneva: World Health Organization, 1987).

1985–1986 which revealed that dental caries was the most prevalent problem in schoolchildren, affecting 31.3% of the children examined. Mexico also conducted studies during the period on the prevalence of dental diseases and on the presence of natural fluoride in water sources. The epidemiological studies indicated a high prevalence of dental caries that had tended to increase over the last decade. It has been shown that dental caries affects 48% of children under 5 years of age, and it is not uncommon to find 93% of children 15 years of age affected by this disease. Overall, it is estimated that 99% of the population has experienced some dental caries, and that it is the most important cause of tooth loss before age 35.

In the United States and Canada, as in certain other developed countries of the world, the past quadrennium has been notable in that dental caries has not been increasing, and headway has been made in reducing the incidence of dental caries and oral disease. In the United States, it is calculated that during the period 1985–1988 an average of 50% of the children 5–17 years of age were free of dental caries, compared with 1980, when only 36.6% were caries-free. Nevertheless, this reduction in caries and dental disease is not equally distributed throughout the population, and it is notable that between 60% and 75% of the total number of caries lesions occur in only 20% of the schoolchildren. People from lower economic strata, immigrants, and members of minority groups, as well as Native Americans and inhabitants of Alaska, experience greater oral health problems than the rest of the U.S. population.

Periodontal Disease

During the last quadrennium, increased emphasis has been placed on studies of the other most prevalent oral health problem, periodontal disease. This trend stems in part from the recognition that measures were available and proven for the mass prevention of dental caries, and in part from recognition of the impact of untreated periodontal disease upon tooth loss. A notable finding of studies conducted in recent years has been evidence that periodontal disease is not necessarily confined to the adult population. In the Caribbean area and surrounding countries, juvenile periodontitis has been found to be twice as extensive as in the child population of the United States. Mexico, for example, identified evidence of periodontal disease in 9% of the children between 10 and 15 years, and this proportion increases with age; 30% of the population between 10 and 35 years and 97% of persons more than 50 years old are affected. Studies in Jamaica on schoolchildren illustrated the extensive occurrence of periodontal disease in certain children. Similar results have been reported from Panama. It is evident that as studies to detect periodontal involvement receive more emphasis, increased epidemiological information on the characteristics and the extent of these diseases, in both adults and children, will become available.

Dentomaxillary Anomalies

Malpositioned teeth and malocclusion continue to be a problem in many countries of the Region, although they are not seen as acute and often are not within the scope of the services provided by government dental institutions. A study conducted in Argentina found that only 14% of children between 4 and 16 years of age did not have some form of orthodontic problem. Since only 17% of those who did were considered not to need treatment, almost 70% of the sample had malocclusions which required treatment.

Oral Cancer

Of the total cancers registered in Argentina, 5% were related to the oral cavity. In Uruguay and Brazil, this figure was 15% of the registered cancers. In the French Antilles, oral and buccopharyngeal cancers accounted for 17% of the total cancers encountered in a group of males 15–60 years of age. Approximately 29,500 new cases of oral cancer occur annually in the United States; they produce 9,400 deaths from oral cancer, which represent 3% of all cancer deaths.

Maxillofacial Injury

With regard to risk of accidents to the oral region, a study in Mexico that analyzed workers' health risks found that the head and neck, excluding eyes, were involved in 6% of all accidental lesions.

AIDS

An area of major concern that has emerged during this period is the oral manifestations of HIV infection. Dental personnel play a role in the early detection of changes in disease status. Distinct sequences and types of lesions have been identified in different sites. Identification of cases of oral manifestations of HIV infection has occurred in Argentina, Brazil, Mexico, and the Caribbean as well as the United States and Canada. Whereas in developing countries emphasis is initially being placed on case identification and community and professional education, the need for dental manpower for maintenance care will clearly rise if the projected increase in HIV-infected persons occurs.

Preventive Measures

Regarding prevention of dental diseases, and specifically in the field of dental caries prevention, great advances have been made during the last quadrennium. For example, the water supplies of major cities such as Rio de Janeiro and São Paulo have been fluoridated, and the Government of Argentina has decided to fluoridate the water of a large portion of the city of Buenos Aires, thus creating the potential for reduced incidence and levels of dental caries in the populations of those cities within the next few years.

Furthermore, progress has been made in the mass prevention of dental caries through fluoridation of refined table salt, with the introduction of this measure into both Costa Rica and Jamaica. Salt fluoridation has the advantage of enabling virtual total population coverage at extremely low cost. In addition, the technology is relatively easy to implement, in view of the similarities between fluoridation and iodization of salt, and has been developed to suit the salt production methods existing in certain countries of the Americas. Programs for the implementation of this measure are well advanced in Mexico and Colombia, and recently Peru initiated steps to include this process within the salt production program in that country. The W. K. Kellogg Foundation has collaborated in the development of the programs in Costa Rica, Mexico, and Peru, as well as in a study in Bermuda. Initial results of that study show that after five years of application of combined fluoride therapy utilizing fluoride drops and tablets, with the collaboration of school and health personnel, the incidence of dental caries has been reduced by up to 80%. Initial evaluation of the program in Costa Rica indicates that the levels of fluoride being ingested by children are now compatible with those required to produce reductions in dental caries, and progress is comparable to that measured in studies and programs under way in European countries, notably Switzerland and France. The development of the capability to produce fluoridated salt in Jamaica is a direct response to decisions of the health ministries of the Caribbean countries. This method places an economical and feasible means for introducing mass dental caries prevention programs at the disposal of the majority of the Caribbean Community (CARICOM) member countries, where the more traditional fluoridation of water supplies has been difficult to implement.

In cities in many countries where it has not been possible to introduce mass preventive measures for dental caries, programs of topical fluoride treatment have been initiated on a limited basis. However, some of these programs have tended to be inconsistent and, therefore, except in one or two countries, significant reductions in the incidence of dental caries have not been noted. Nevertheless, in the absence of more extensive systemic approaches for the provision of fluoride, these programs should be implemented wherever possible, especially for schoolchildren, on a consistent basis and with the involvement of auxiliary community and school personnel.

Initial steps have been taken in conjunction with WHO, the International Dental Federation (FDI), the National Institute of Dental Research, the U.S. Centers for Disease Control, and the WHO Collaborating Center on Oral Manifestations of HIV Infection, Copenhagen, to develop reporting mechanisms and information systems for oral manifestations of HIV infection so as to institute preventive and palliative procedures for the specific conditions identified.

Dental Human Resources

Despite the overall increase in the number of professional dental personnel (see Human Resources section in Part III), their availability to provide services through institutional programs is limited in many countries, causing the dentist-to-population ratio in government programs to remain very low (it is not uncommon to find a ratio of one dentist to 100,000 population). Problems also exist with respect to the distribution of dentists. Lima, Peru, has 15 to 16 times the number of dentists that rural areas have. In Uruguay, estimates indicate that 76% of the dentists are in the capital where only 44% of the population lives. There are 3.4 dentists per 10,000 inhabitants in urban areas of Panama, and 4.3 dentists per 10,000 inhabitants in the capital city, compared with 1 per 10,000 in rural areas. Brazil exhibits virtually the same situation, since in the southeastern region 55.4% of the dentists serve 43.6% of the population, while only 14.4% of recent graduates from dental schools go to the northeastern region, where 28.5% of the Brazilian population lives.

During the period, a study was conducted which analyzed the use of dental manpower in the private and public sectors of oral health programs, the location of dental health care providers according to administrative and clinical capacities, and aspects related to the training of dental professionals. This study was done as part of a working group established between the Latin American Regional Office (LARO) of the International Dental Federation (Fédération Dentaire Internationale–FDI) and the Regional Office of WHO (Joint Working Group WHO/PAHO/FDI/LARO). It involved collaboration between representatives of PAHO and representatives of FDI, a nongovernmental association that has been represented in WHO since the initiation of dental programs in the Organization. Twenty countries and some 60 schools of dentistry participated in the study. Some of

the findings with regard to the training of dental professionals have implications for the strategy of primary care. For example, many of the dental schools responded that they considered their major areas of competence to be those normally associated with dental clinical functions, namely, extractions and the placement of restorative materials and crowns, whereas the provision of primary care, basic medical or health actions, and public health activities received relatively little curriculum time and were not considered to be areas of great expertise by these schools. In 10 out of 15 countries responding, the number of female dental students exceeds that of males, indicating a considerable change in the future makeup of the profession. A review of the percentage of dentists in particular types of practice (Table 97) indicated that in the eight countries responding, the proportion of dentists in institutional practice ranges from a low of 2% in Guatemala and Mexico to a high of 97% in Cuba. However, approximately 30% of the dentists in private practice in the developing countries of the Region also participate in institutional practice.

It has been found that in Colombia, Guatemala, Honduras, Peru, Jamaica, and Trinidad and Tobago, dental care services are still provided to certain sectors of the population by personnel who have not been trained in recognized and qualified dental training institutions.

Another aspect of dental manpower that causes concern in Latin America is the limited availability of dental equipment maintenance technicians and laboratory technicians. The availability of the latter varies considerably, ranging from 1 dentist to 0.87 technicians in Chile to 1 to 18 in Paraguay.

It is evident that most institutional services provided through ministries of health still have a large component devoted to extractions and emergency care. The economic crisis has introduced difficulties regarding the importation of equipment and supplies. A study conducted by PAHO in collaboration with the LARO/FDI as part of a joint working group investigated the importation and availability of dental equipment, materials, and products. Subsequently, based on the findings of the original group, an additional working group was established to review in greater detail the relevant customs, tariffs, and import regulations. The first study found that, in some countries, materials such as dental amalgam that are basic in the provision of primary care were subject to restrictive import duties that were incompatible with the general policies of the Ministers of Health to facilitate the provision of primary health care services. However, it is important to note that these studies revealed that three countries (Argentina, Brazil, and Mexico) produced all the basic equipment, instruments, and materials required for primary care dentistry, and three other countries (Chile, Colombia, and Uruguay) produced 50% of those items. In all, 14 countries in Latin America now produce or assemble some types of dental equipment, instruments, and materials. Another notable finding was that no school of dentistry included in the study from a developing country in the Region has an established relationship with other official agencies for the training of dental maintenance technicians.

An analysis of the position of dental resources in the health services revealed that, on average, only 0.16% of the dental work force in the countries was located at the central level, whereas 97.9% worked at the local clinical and operational level (Table 98). While the implementation of local health systems (SILOS) may be assisted by this situation, it raises questions about the ability to effectively incorporate dental procedures and needs into the planning and programming of services at the central level, since oral health resources at that level are so reduced in the majority of the countries. There is evidence that decentralization is proceeding in many countries, and this positive process will allow local resources to be utilized and applied to locally identified problems. Likewise, program modifications can be implemented, and service equipment can be assembled and maintained locally. In Mexico during 1986, for example, decentralized entities provided 49% of dental care nationwide, an increase of 6% over the preceding year. This increase was ten times greater than the increment registered in the centralized programs.

New systems for dental care delivery that make use of appropriate technology in the design of equipment and

TABLE 97

Proportional distribution of dentists by type of dental practice in some countries of Latin America, 1984.[a]

Country	Institutional practice (%)	Private practice		
		Private only (%)	Mixed (%)	Total (%)
Argentina	10	52	38	90
Colombia	10	60	30	90
Cuba	97	3	0	3
Ecuador	10	70	20	90
Guatemala	2	61	37	98
Honduras	8	72	20	92
Mexico	2	60	38	98
Paraguay	10	65	25	90

[a]Other countries, not included in this table, that responded to the PAHO/FDI 1984 survey are Bolivia, Brazil, Chile, Dominican Republic, El Salvador, Nicaragua, Panama, Peru, Puerto Rico, Uruguay, and Venezuela.

Source: Technical Report No. 27, Joint Working Group No. 7, WHO/PAHO/FDI, 1984.

TABLE 98

Dental human resources (dentists, assistants, and others) in the health services, according to the level at which they work (central, coordinative, or operative), by country, 1984.[a]

Country	Total	Central		Coordinative		Operative	
		No.	%	No.	%	No.	%
Argentina	4,863	13	0.3	195	4.0	4,655	95.7
Bolivia	264	2	0.8	16	6.1	246	93.2
Brazil	35,122	2	0.0	120	0.3	35,000	99.7
Chile	3,268	1	0.0	26	0.8	3,241	99.2
Colombia	2,014	8	0.4	141	7.0	1,865	92.6
Costa Rica	599	7	1.2	11	1.8	581	97.0
Dominican Republic[b]	614	6	1.0	310	50.5	298	48.5
Ecuador	1,200	17	1.4	21	1.8	1,162	96.8
El Salvador	300	3	1.0	11	3.7	286	95.3
Guatemala	209	—	—	—	—	209	100.0
Honduras	107	3	2.8	24	22.4	80	74.8
Peru	607	3	0.5	4	0.7	600	98.9
Uruguay	168	1	0.6	—	—	167	99.4
Venezuela[c]	78	15	19.2	63	80.8	—	—

[a]Other countries, not included in this table, that responded to the PAHO/FDI 1984 survey were Cuba, Mexico, Nicaragua, Panama, Paraguay, and Puerto Rico.
[b]Partial information; there are also 12,170 volunteer health promoters.
[c]Partial information.

use of materials and human resources have resulted in innovative programs. Many are based on initiatives taken during the previous decade, such as the projects on "Innovations in Dental Education and Provision of Services." Such programs have proven viable in Brazil, Chile, Mexico, and Venezuela, and have increased the productivity of dental services at low cost. These programs have included the use of auxiliary personnel and simplification of technology. In Cuba, the family dentist, similar to the family physician, has been introduced into the polyclinics and hospitals, so that integrated care can be provided to the family. In addition to meeting demand for services, this approach also tries to give attention to needs before they become a cause for demand.

An analysis was done of the dental professional resource situation in 1961–1984, relating the number of dentists to population and gross national product per capita for the countries of Latin America. Although the situations differ between countries, one fact was evident: the number of dental professional personnel increased much faster than the population or gross national product in the period 1978–1984. For example, in Costa Rica the GNP increased 2–3% per year, while the number of dentists grew 6–8% per year and the population grew less than 2% per year. These tendencies indicate a need to establish future policies on the education of dental personnel that take into account existing resources, the capability of the various sectors to absorb dental professionals, and, most important, the organization of oral health services, in order to obtain the goals of equity, efficiency, and efficacy in the Region.

The increase in lifespan in many of the countries of Latin America brings with it the need to plan for provision of dental services to an older population. Mass programs for the prevention of dental caries need to be implemented as extensively and as soon as possible, so that the existing work force will be able to meet the future needs of the older segments of the population as well as those of the younger generation.

Nine countries have indicated that they are participating in some form of dental research. However, a meeting held in Venezuela in 1987 concluded that considerable emphasis needs to be placed on this area in order to develop the abilities of research workers in Latin America in oral health and to permit the more extensive and efficient application of research findings.

During this period great strides have been made in the development and implementation of measures to prevent dental caries. The ability to produce and distribute fluoridated refined table salt has eliminated the barriers to

access to major preventive measures that have sometimes been associated with the fluoridation of water supplies, and thus a preventive vehicle is now theoretically available for all populations. The current systems are producing a sufficient number of dental professional personnel, except in the English-speaking Caribbean, where the dental school at the University of the West Indies is soon scheduled to open. In the majority of countries, however, increasing the number of dental students or creating additional dental schools would now not seem to be a priority for ministries of health or ministries of education, since it appears that sufficient capability to produce dental manpower exists both in the publicly and the privately funded university systems. The challenge, therefore, remains to implement the mass preventive measures and to develop effective means to conduct research on the characteristics and patterns of the major oral diseases in certain sectors of the population. Coordination of abilities and resources is needed to develop health systems that will more efficiently utilize the available human resources to expand population coverage in oral health. It is this latter challenge that illustrates the need for the decentralization and regionalization of services and the effective implementation of local health systems (SILOS) in the next quadrennium.

Disasters

Natural disasters constantly threaten Latin American and Caribbean countries. During the past four years, earthquakes ravaged Chile, Mexico, El Salvador, and Ecuador. Mexico's devastating earthquake in 1985, for example, left more than 10,000 dead and thousands of dwellings destroyed. When the Nevado del Ruiz volcano in Colombia erupted in 1985, it unleashed an avalanche that buried the city of Armero, killing 23,000 persons. In 1988, Hurricane Gilbert buffeted the Caribbean, leaving hundreds of thousands of persons homeless in Jamaica before devastating Mexico's Yucatán Peninsula and the city of Monterrey. Barely two months later, Hurricane Joan left a path of destruction from coast to coast in Nicaragua and other Central American countries. Every year, one country or another is subjected to floods.

In September 1989, Hurricane Hugo battered the Leeward Islands, seriously damaging Guadeloupe, Antigua, Dominica, Montserrat, St. Kitts and Nevis, Anguilla, and Tortola. The hurricane's winds of up to 140 miles per hour also caused serious damage to the Virgin Islands and to Puerto Rico, finally hitting the United States' eastern seaboard, particularly the city of Charleston, South Carolina. Hurricane Hugo left a wake of demolished housing, interrupted communications, seriously damaged health installations, cut off water and electrical services, and, on several islands, completely destroyed agriculture.

On 17 October 1989, a strong earthquake registering 6.9 on the Richter scale struck the San Francisco area in California, leaving approximately 60 dead, about 2,500 injured, and damages estimated at more than $US1 billion. The epicenter was recorded in the vicinity of Santa Cruz, located some 78 miles south of San Francisco, along the San Andreas Fault. Although this earthquake did not cause many deaths, it was the most severe in the United States during the 1980s, and it caused more damage than the 1971 San Fernando, California, earthquake. The most severe earthquake in the history of San Francisco occurred in 1906; it registered 8.3 on the Richter scale and caused more than 500 deaths. Damage to homes was aggravated by fires due to escaping gas.

In the last 20 years, earthquakes, volcanic eruptions, hurricanes, floods, landslides, and droughts have left nearly 150,000 dead and approximately 500,000 injured in the Region of the Americas. Tables 99 and 100 list the most serious disasters that occurred between 1970 and 1989.

Vulnerability to technological disasters such as chemical accidents, exposure to toxic and radioactive substances, fire, and explosions is associated with industrial development and urban growth. Gas explosions and radioactive accidents in Mexico (1984), Brazil (1987), and El Salvador (1988) illustrate the vulnerability of populations unless adequate prevention and safety measures are undertaken.

Social violence, which affects several Central American countries, has forced hundreds of thousands of persons to seek shelter in neighboring countries or to live as displaced persons in temporary settlements in their own countries. Both situations aggravate the already precarious existence of these individuals, who usually come from rural areas, by separating them from family members and by exposing them to disease risks, overcrowded conditions, and insufficient access to basic services (Table 101).

Fortunately, large-scale disasters are infrequent. However, their long-term effects tend to be more significant in the context of socioeconomic development. This is particularly true of natural disasters which, in addition to causing human suffering and damage to physical infrastructure, lead to vast losses in agriculture and livestock, which constitute the economic foundation in many countries of the Americas. For example, approximately 60,000 head of cattle were lost in Bolivia during the 1978 floods, and agriculture in Jamaica and Nicaragua suffered losses from Hurricanes Gilbert and Joan.

Vulnerability to natural disasters is related to underdevelopment. On the one hand, in undeveloped areas (where there are no human settlements, infrastructure, or

TABLE 99

Major disasters, by country, 1970–1989.

Year	Country	Type of disaster	Deaths	Affected population
1970	Peru	Earthquake	66,797	3,139,000
1972	Nicaragua	Earthquake	10,000	400,000
1976	Guatemala	Earthquake	23,000	1,200,000
1980	Haiti	Hurricane Allen	220	330,000
1982	Mexico	Volcanic eruption	3,000	60,000
1985	Mexico	Earthquake	10,000	60,000
1985	Colombia	Volcanic eruption	23,000	200,000
1986	El Salvador	Earthquake	1,100	500,000
1988	Jamaica	Hurricane Gilbert	45	500,000
1988	Mexico	Hurricane Gilbert	250	200,000
1988	Nicaragua	Hurricane Joan	116	185,000
1989	Caribbean countries and the United States of America	Hurricane Hugo	25[a]	300,000[a]
1989	San Francisco (USA)	Earthquake	60[a]	10,000[a]

[a]Preliminary data.
Source: PAHO/Office of Emergency Preparedness and Disaster Relief. Agency for International Development (USA)/ Office of the United Nations Coordinator for Disaster Relief.

industrial installations) natural disasters potentially cause few human and material losses. On the other hand, ignorance and poverty increase the vulnerability of marginal groups because their housing is inadequate or built using faulty construction techniques and, above all, because their settlements are located in high-risk areas and the infrastructure is overburdened.

Disasters hinder development by destroying the infrastructure and by using up the health services' scanty resources for emergencies or rehabilitation. However, they also provide an opportunity to genuinely reform and improve the health system, because they encourage such changes as better distribution of services or a shift from large hospitals to comprehensive and decentralized health services. Such measures were adopted in Mexico City during the reconstruction of the hospitals destroyed by the earthquake.

Disaster preparedness is a catalyst for developing or improving public service and community activities that are needed in normal times. The humanitarian aspects of disaster preparedness and relief are universal, and preparing for such events provides the opportunity for cooperation among a country's ministries, government, and people.

The degree of preparedness depends on the organization and resources of the health sector. Consequently, the success with which a country's health services cope with disasters is a measure of the quality of these services and their capability to provide effective care and coverage under normal conditions.

Effects of Disasters on Health

PAHO defines a disaster or major emergency as a natural or man-made occurrence that produces a massive disruption in the normal delivery of health services and that poses such a great and immediate threat to public health that the affected country requires external assistance in order to respond to the situation. Emergencies may be acute (earthquakes, hurricanes, sudden floods, technological disasters) or chronic (droughts, slow floods, etc.).

The natural disasters that have recently struck countries have deeply affected the health services infrastructure, particularly hospital services.

According to available information, the combined damage of the earthquakes in Chile, Mexico, and El Salvador and of Hurricanes Gilbert and Joan, resulted in the loss of approximately 14,819 beds (Table 102). In order to recover these facilities at current costs, the health sector must embark on a significant investment. For example, the cost of the most urgent rehabilitation projects for hospitals and health centers damaged in El Salvador's

TABLE 100

Damage caused by Hurricane Hugo in Caribbean countries, September 1989.

Country	Damage[a]
Antigua and Barbuda	Electrical system interrupted; two deaths; 10%–15% of houses damaged; a hospital flooded; a health center damaged. Economic losses estimated at $US80 million.
British Virgin Islands	Five wounded; 25% of housing destroyed; damage to agriculture; minor damage to health services. Economic losses estimated at $US135 million.
Dominica	Damage to the highway infrastructure and the airport; minor damage to homes; agriculture destroyed. Economic losses estimated at $US20 million.
Guadeloupe	Seven deaths, 84 wounded; 12,000 left homeless; damage to agriculture.
Montserrat	Ten deaths, 40 wounded; 98% of homes damaged, 20% totally destroyed; one hospital and 12 health centers severely damaged. Economic losses estimated at $US240 million.
St. Kitts and Nevis	Two deaths, 6 missing. On St. Kitts, roofs damaged on 10% of houses; sugarcane crops destroyed; one hospital severely damaged; communications interrupted. On Nevis, 60% of houses damaged in some way; the hospital and the health center seriously affected. Economic losses estimated at $US45 million.
Virgin Islands (USA)	Fifty wounded; severe damage on St. Croix, moderate damage on St. Thomas and St. John; on St. Croix, 70% of dwellings and business buildings severely affected.
Puerto Rico	On the islands of Culebra and Vieques, 80% of dwellings sustained severe damage. The eastern part of the island of Puerto Rico suffered severe damage. About 50,000 persons sought shelter because of damage to their homes.

[a]Preliminary information obtained during the emergency situation.
Source: PAHO/Office of Emergency Preparedness and Disaster Relief. Agency for International Development (USA)/Pan Caribbean Project for Disaster Preparedness.

TABLE 101

Refugees and displaced persons in Mexico and the Central American countries.

Country	Refugees	Undocumented foreign Central Americans	Internal	Repatriated displaced persons
Belize	5,100	25,000	...	...
Costa Rica	40,800	250,000	...	...
El Salvador	500	20,000	400,000	13,000
Guatemala	3,000	220,000	100,000	13,500
Honduras	37,000	250,000	22,000	...
Mexico	53,000	128,000	...	...
Nicaragua	7,000	...	350,000	35,000
Total	146,400	893,000	872,000	61,500

Source: International Conference on Central American Refugees, Guatemala, May 1989.

TABLE 102

Hospitals destroyed or seriously damaged and hospital beds lost in natural disasters, by disaster and by country.

Type of disaster and country	No. of hospitals	No. of lost beds
Earthquake, Chile (central region, March 1985)	79	3,271
Earthquake, Mexico (D.F., September 1985)	13	4,387
Earthquake, El Salvador (San Salvador, October 1985)	4	1,860
Hurricane Gilbert (Jamaica, September 1988)	22	5,085
Hurricane Joan (Costa Rica, October 1988) (Nicaragua, October 1988)	4 1	... 216
Total	123	14,819

Source: PAHO archives.

1986 earthquake has been estimated by ECLA at approximately $US120 million, and the costs to fill urgent health infrastructure needs after Hurricanes Gilbert and Joan have been estimated at more than $US100 million for Jamaica and $US45 million for Nicaragua.

The leading cause of morbidity and mortality directly associated with acute disasters is related to injuries. Available information on events in recent years is incomplete and not specific regarding diagnosis; despite efforts, no reliable information systems have been developed that can function during emergencies and provide data that help to characterize the events by type of trauma, sex, age group, and other variables. Another important factor that hinders an improved analysis is the lack of data on the population at risk when a disaster occurs.

During the eruption of the Nevado del Ruiz volcano in Colombia, the leading causes of morbidity were fractures, puncture wounds, lacerations, burns, diseases of the respiratory tract, and ocular lesions. During the earthquakes in Chile and Mexico multiple fractures predominated, while in hurricanes morbidity was more related to acute enteric and respiratory diseases occurring in populations located in temporary shelters and associated with environmental and sanitary conditions. Tables 103 and 104 show some aspects of mortality and morbidity due to natural disasters.

Another critical aspect among the effects of acute disasters is the drinking-water supply. In all the disasters recorded in recent years, water systems have been seriously affected. For example, during the first three days after the earthquake in Mexico, seven million residents in the Federal District were without normal water supply, and 65% were without any water at all. Hurricanes Gilbert and Joan not only damaged water systems but also caused the sewerage systems to stop working or back up.

Other health aspects associated with disasters in recent years have had to do with mental health. Studies have been conducted in Ecuador, Colombia, and Mexico to better identify the problem and to provide early support for victims and their families. These studies have acknowledged that severe anxiety, depression, insomnia, anorexia, psychosomatic problems, and post-traumatic stress syndrome require support and early assistance.

The Countries' Response

Significant progress in disaster preparedness has been achieved in the last four years. Most Latin American countries have at least one health professional who works full-time in emergency preparedness and the coordination of disaster relief. However, a 1988 analysis conducted in the Andean subregion revealed that the legal, administrative, and budgetary situation of the emergency preparedness national programs is still precarious. Very few national programs can execute activities with the participation of various departments, and few have been given the power to coordinate activities.

In many cases, no specific budget has been allocated and no positions have been created for disaster preparedness. Save for rare exceptions, the programs currently are established on an *ad hoc* basis in the ministries of health, and their effectiveness depends mainly on the ability and dedication of the person in charge. The programs' continued existence if external aid is interrupted or if ministry of health authorities change is far from ensured. However, it should be emphasized that countries have expressed their commitment to these programs at different subregional meetings. Intercountry cooperation ventures have been discussed at technical meetings, such as those among neighboring countries, and subregional initiatives both for Latin America and for the Caribbean have been proposed. It is to be hoped that these initiatives will lead to concrete activities.

It might be necessary to review program objectives for the smaller Caribbean countries. Given their scarcity of human resources and their small territory, establishing a self-reliant preparedness program in the health sector, especially with a full-time health professional devoted exclusively to the program, may be an unreasonable goal. With very few exceptions, local activities are carried out only prior to the hurricane season. Intercountry cooperation as a way to respond to disasters may be a more viable alternative for small Caribbean countries. This was

TABLE 103

Deaths from trauma at the General Hospital, Mexico, 1985 earthquake.

Category	Total deaths	Injury		Injury site			
		No	Yes	Head	Thorax	Abdomen	Limbs
Patients	85	5	80	51	60	40	80
Newborns	94	32	62	42	40	25	53
Physicians	56	—	56	23	18	32	56
Nurses	37	11	26	12	15	18	24
Administrators	4	—	4	1	1	3	4
Service staff	16	8	8	2	4	3	7
Visitors	3	3	...	...	...	...	...
Total	295	59	236	131	138	121	224

Note: The 59 cases that were not studied were turned over to the Ministry of Public Health; the 236 studied cases were recorded at the Pathology Unit of the Mexico City General Hospital. Of these, 22 died from being crushed or dismembered.
Sources: Department of Social Work, Pathological Anatomy Unit, UNAM General Hospital, Ministry of Health, Mexico. PAHO records, 1985.

TABLE 104

Classification of wounded, by type of injury, Armero volcanic eruption, Colombia, 13 November 1985.

Type of injury	Men		Women		Total	
	No.	%[a]	No.	%[a]	No.	%[a]
Lacerations	310	70.3	268	68.2	578	69.3
Puncture wounds	173	39.2	170	43.3	343	41.1
Fractures	174	39.5	138	35.1	312	37.4
Ocular lesions and complications	152	34.5	120	19.1	272	32.6
Abrasions	90	20.4	66	16.8	156	18.7
Lesions and complications of the hearing system	32	7.3	24	6.1	56	6.7
Internal injuries	26	5.9	27	6.9	53	6.3
Tissue loss	26	5.9	27	6.9	53	6.3
Burns	18	4.1	23	5.8	41	4.9
Respiratory system lesions and complications	10	2.3	18	4.6	28	3.3
Luxations	14	3.2	13	3.3	27	3.2
Multiple injuries	7	1.6	14	3.6	21	2.5
Concussions	10	2.3	10	2.5	20	2.4
Gastrointestinal system lesions and complications	10	2.3	4	1.0	14	1.7
Nervous system lesions and complications	9	2.0	3	0.8	12	1.4
Genitourinary system lesions and complications	3	0.7	8	2.9	11	1.3
Other	23	5.2	20	5.1	43	5.1
Total number of patients	441		393		834	

[a]Patients with more than one lesion.
Source: M. Gueri, and L. J. Perez, *Disasters*. Vol. 10, No. 2, 1986.

demonstrated during Hurricane Hugo, when unaffected neighboring islands flew in technicians from various disciplines and contributed supplies.

The countries participating in the Pan-Caribbean Project for Disaster Preparedness and Prevention (all the islands and territories of the Caribbean, Belize, Guyana, and Suriname) have designated a general coordinator and a health coordinator in cases of disaster. However, only a few of these countries can give time to this additional undertaking.

National programs also have achieved noteworthy progress in interinstitutional cooperation, particularly with the social security institutions, which have expressed a growing interest in developing programs for emergency care and disaster preparedness, and with the national civil defense committees, other nongovernmental organizations, and the national chapters of the Red Cross.

Health manpower training remains one of the major activities carried out by the countries with PAHO's cooperation. Innovative aspects of these activities include providing training at the community level for active participation in emergency situations, as well as training in the basic education sector, where protective measures are being taught to schoolchildren. The local production of technical and training materials has gotten under way in several of the countries, among them Colombia, Costa Rica, and Mexico. At the higher education level, several countries have incorporated disaster training into the undergraduate and graduate curricula in the schools of medicine, of public health, and of sanitary engineering.

The countries' solidarity and international response in all the disasters that occurred should be highlighted. This assistance still needs to be directed toward the real needs of the affected countries.

Future Prospects

The countries must continue to try and make their disaster preparedness programs self-reliant and less dependent on international cooperation. National programs should be institutionalized and legally recognized, and should have their own budgets so they can meet their most urgent needs.

It is important to strengthen interinstitutional activities and intersectoral coordination, as well as to develop an awareness on the part of the public and the highest political, decision-making authorities, so as to promote new areas of knowledge to better manage disasters and to identify resources and institutions that will contribute to effective intercountry cooperation.

In 1987 the United Nations General Assembly approved a resolution designating the next decade as the International Decade for Natural Disaster Reduction. This means that all countries are expected to take special interest in developing or strengthening disaster preparedness programs. At the Latin American Meeting on Disaster Preparedness with Emphasis on Health and Other Social Sectors, held in Costa Rica in May 1989, the countries clearly expressed their desire to actively participate in this effort through a broad intersectoral effort in which critical roles will be played by the health sector, civil defense organizations, nongovernmental organizations, and the ministries of foreign affairs, and in which women will actively participate.

Violence

Several health indicators that reflect the Region's daily reality have shown troubling increases in the extent and variety of violence, as well as certain trends in its distribution. Because violence erodes the quality of life for vast segments of the population; exacts a high toll in lives, especially among teenagers and young adults; leads to social and economic costs; and further burdens the already stressed health services resources, it has come to rank as one of today's top public health priorities.

In order to address this problem, both WHO and PAHO have been recording and disseminating information on this subject, as well as emphasizing the need to better understand it through more thorough, ongoing studies. In particular, they have called society's attention to ways of dealing with the problem and of working to alter the conditions that continue to contribute to it.

The problem of violence is extremely complex: although there is no universal definition of violence itself, there are many interpretations on how it relates to health and there is much debate on how to observe and measure its quantifiable aspects. Since the purpose here is to summarize the magnitude and implications of these issues and to present possible areas for action, only aspects that are essential to understand this situation will be covered.

Basically, violence is the use of physical strength or of psychological or moral coercion by an individual or group against itself, objects, or another person or group; this aggression either destroys or damages the object or violates an established right of the victimized person or group. In general, this action arises from the desire to maintain, modify, or destroy a specific order or value system, and is triggered by serious inequities in established rights. Given this view, then, violence essentially is an activity of an individual within his or her society, and, consequently, the context, the intensity, and the forms of violence change from moment to moment, under different conditions, and within different forms of social organization. Physical violence is the most obvious form of assault, since it is manifested in visible injuries

and is a direct cause of disability and death. Its extreme and most devastating expression is war in all its forms, which causes great injury, uproots large groups of people, and generally lowers the quality of life.

It also should be emphasized that violence goes beyond the immediately observable, and usually tragic, violent act. It involves all the conditions that lead up to it, all its manifestations, and the direct and indirect consequences to both the perpetrator and the victim. In other words, rather than an isolated act, violence is a process, and, as such, manifests different types, moments, forms, and intensities. An approach to the problem, then, involves considering its causes, its different modalities, its concrete forms of expression, its perpetrators, its victims, its consequences, and its implications. And since all knowledge should be oriented toward bringing about improvements, a better understanding of violence will help reverse this troubling panorama in the Region.

By its very nature, violence affects many aspects of individual and social life and, accordingly, touches on different disciplines and fields of knowledge. Undoubtedly, health is one of the aspects most involved in the problem. However, it must be acknowledged that, despite the seriousness of the matter, the health sector's response generally has been passive and has been limited to a few specific areas, such as recording the violent acts that reach the health services, treating victims in emergency rooms, developing a medical and legal classification of violent acts perpetrated on persons injured or killed, and attempting to remedy the physical or psychological consequences of violence through rehabilitation services and psychiatric intervention. Despite their limitations, each one of the above-mentioned efforts increasingly drains human, technological, physical, and financial resources and requires the ongoing production of more adequate, timely, and efficient knowledge, methods, and tools with which to respond to the demands. Simultaneously, other sectors and society as a whole look to the health sector for an increasingly active, organic, and intersectoral response to violence. This is a challenge that must be met at once with creativity and adequate resources if society's needs are to be fulfilled and if some of the indicators that most obviously work against the goal of health for all by the year 2000 are to be reversed.

Despite the fact that only some aspects of violence are quantifiable and that the indicators and information available are limited, it is possible to approximate the magnitude and complexity of the problem, based on information recorded and provided by the health services. Practically all available data refer to violence that ends in death. Data on violence that results in varying degrees of physical and psychological damage are still scarce. As an official cause of death, violence is included under "deaths from external causes," which in the International Classification of Diseases (ICD–9) includes all accidents (E800–E949), suicide and self-inflicted injury (E950–E959), homicide and injury purposely inflicted by other persons (E960–E969), injury undetermined whether accidentally or purposely inflicted (E980–E989), and injury resulting from legal intervention (E970–E979) and operations of war (E990–E999).

Based on these data, the following four main types of indicators have been established: death rates (total by country and per year, and specific by age group, by sex, by country, and by year), percentage of total mortality due to external causes, ranking of mortality from external causes among the first five leading causes of death, and estimated years of potential life lost (YPLL) from such causes. The following observations refer to some of these indicators, based on data from the latest years reported by the different countries, with rates calculated per 100,000 population. Age-adjusted rates are used to offset the weight of differing age distributions in the countries and to permit more objective comparisons.

Death rates from external causes generally are high in most of the countries (Table 105), with variations that range, in countries with more than a million inhabitants, from a low of 29.4 (Peru, 1983) to a a high of 127.1 (El Salvador, 1984). Only four of the countries with more than a million inhabitants and with information available show rates lower than 40. These figures contrast, for example, with mortality from enteritis and other diarrheal diseases, which is now lower than 40 in almost every country, and with mortality from all the infectious and parasitic diseases, which is below 40 in 21 of the Region's countries and territories. Violence takes its greatest toll among males and in the age groups 15 to 54 years old. The highest total rate for men is 218.8 (El Salvador, 1984), whereas the highest rate for women is 40.1 (Cuba, 1986). When the rate is analyzed by age groups, the difference by sex is even more obvious: the highest figure for men in the age group 15–24 years old is 432.1 (El Salvador, 1984), while the highest rate among women in the same age group is 48.6 (El Salvador, 1984). These observations do not include the age group 75 years old and older, which is covered in the section on health of the elderly.

A more detailed view of the situation, and one that permits a more thorough analysis, emerges when the overall rate is broken down into its different components. For example, while in El Salvador the total mortality rate from accidents and violence (127.1) triples that in Canada (40.3), its suicide rate (12.2) is just slightly greater than Canada's (10.6). The difference between the suicide rates in Canada (10.6) and the United States (8.9) is not very great, but the homicide rate in the latter (7.5) is more than four times that in the former (1.8). On the other hand, the suicide rate in the United States is more than

TABLE 105

Age-adjusted mortality rate per 100,000 population from accidents and violence, in countries from the Region of the Americas with more than one million inhabitants, around 1987.

Country (year)	All accidents and violence (E800–E999)	Injury undetermined whether accidentally or purposely inflicted (E980–E989)	Homicides (E960–E969)	Legal interventions and injury resulting from operations of war (E970–E978, E990–E999)	Suicides (E950–E959)
Argentina (1986)	44.8	3.2	5.1	0.7	5.4
Brazil (1986)	63.7	10.3	13.3	0.0	2.8
Canada (1986)	40.3	1.3	1.8	0.0	10.6
Chile (1987)	61.0	30.8	2.3	—	4.6
Colombia (1984)	81.0	3.0	29.7	0.0	3.4
Costa Rica (1988)	40.3	1.9	3.7	0.0	4.5
Cuba (1988)	64.8	...	...	...	22.6[a]
Dominican Republic (1985)	35.0	3.6	4.9	1.0	2.1
Ecuador (1987)	63.1	0.2	10.1	—	3.9
El Salvador (1984)	127.1	26.2	41.6	0.0	12.2
Guatemala (1984)	54.9	31.5	3.6	0.2	0.6
Jamaica (1984)	18.7	1.2	1.3	0.5	0.2
Mexico (1986)	77.4	1.9	19.6	0.0	2.1
Panama (1987)	48.2	4.9	6.4	0.5	3.4
Paraguay (1986)[b]	40.0	1.5	6.5	—	2.4
Peru (1983)	29.4	3.5	2.0	0.1	0.5
Trinidad and Tobago (1986)	50.5	5.6	6.0	0.8	7.5
United States of America (1987)	48.4	1.0	7.5	0.1	8.9
Uruguay (1986)	43.1	0.0	2.4	0.1	5.3
Venezuela (1985)	59.9	0.4	8.9	—	4.4

[a]The crude rate was used because the age-adjusted rate was unavailable. (*Source:* Republic of Cuba, Ministry of Public Health, Annual Report, 1988. Havana.

[b]Information area.

double that in Ecuador (3.9), while the homicide rate in Ecuador (10.1) exceeds that in the United States.

Strictly speaking, not every accident is an act of violence, but many accidents hide masked or indirect forms of violence. It is extremely difficult, particularly from a legal standpoint, to separate accidents from violence. This situation, whose solution lies beyond the health sector but which nevertheless complicates the problem's analysis, becomes clearer when the available information is processed and interpreted. Without a doubt, many of the diagnoses that come under the heading "injury undetermined whether accidentally or purposely inflicted" (E980–989) should actually be listed as homicides, suicides, and operations of war, but it is impossible to determine the difference at the time the event is registered or when the data are being analyzed later.

In all the countries of the Americas, accidents as a whole are one of the five leading causes of death in the total population. When accidents are broken down by sex, they usually rank even higher among men. In a breakdown by age groups, accidents begin to play a role in early infancy, increase their effect after 5 years of age, and become the leading cause of death in the age group 15 to 24 years old in all the countries of the Region with more than a million inhabitants except Colombia (1981). In the age group 25 to 44 years old, accidents rank first among men and in the total population, but they begin to decline in the age groups older than 45. Clearly, ac-

cidents call for urgent preventive and educational intervention by society, and the health sector's responsibility in this area cannot be delayed. Given their importance within the general category, traffic accidents are analyzed in another part of this publication.

Homicides (E960–E969) are perhaps the most explicit and quantifiable product of violence, and mortality from homicides is a good indicator of the status of violence in the Americas. A comparison of available data with figures from previous periods shows a significant increase in homicides, which is associated with such factors as the aggravation of socioeconomic inequity, the direct and indirect effects of the crisis, the intensification of armed conflicts spawned either internally or internationally, and the increased availability and use of drugs in developed and developing countries.

Homicides are most frequent among men in the 15–24 and 25–44-year-old age groups; in the former they are the second leading cause of death in half the countries of the Region that have more than a million inhabitants (Table 106). In Colombia, homicides have been the leading cause of death in the age group 15 to 46 years old since 1981, both for men and for the group as a whole. In 17 of the 27 countries for which information is available, homicides are one of the five leading causes of death in the total population. In El Salvador (1984), the rate of homicides in men 15 to 24 years old was 144.4 per 100,000 population. The concentration of homicides and other forms of violence in younger age groups makes it the main cause of years of potential life lost in most countries of the Region, producing an average loss of between 30 and 40 years of life.

There are significant differences in the homicide rate among the countries of the Region (Table 105). El Salvador has the highest total age-adjusted homicide rate (41.6 in 1984), followed by Colombia (29.7 in 1984); Jamaica has the lowest (1.3 in 1984). It has been estimated that the probability of dying from homicide in El Salvador in 1984 was 200 times greater than in Guyana and 23 times greater than in Canada. Although the percentage of homicides relative to overall mortality varies markedly, increases have been noted in such countries as Colombia, Guatemala, El Salvador, Venezuela, and Panama. However, in others countries such as Canada and Uruguay, the proportion of homicide rates has stabilized at relatively low levels.

Suicides (E950–E959), although less frequent than homicides and other forms of violence, are beginning to command greater attention as a form of violence. Beyond efforts to understand the personality of the suicidal person, it is necessary to comprehend the structure and the dynamics of suicide as social pathology, and possibly relate it to processes such as the economic and political crisis, the values of different social groups, and, in some of the countries, the role and socioeconomic situation of the elderly.

Of the countries included in Table 105, Cuba has the highest overall suicide rate: 22.6 in 1988. Even though this is a crude rate, it still illustrates the seriousness of the problem; even if the figure were adjusted for age, Cuba would probably remain the country with the highest figure in the table. El Salvador had the second highest rate (12.2 in 1984), followed by Canada (10.6 in 1986) and the United States (8.9 in 1987). The lowest rates were in Guatemala (0.6 in 1984), Peru (0.5 in 1983), and Jamaica (0.2 in 1984). Among countries with fewer than one million inhabitants (not included in Table 105), Suriname has a particularly high rate: 20.2 in 1985.

Overall, the predominance of males in lethal violence carries over to suicides, but the difference with respect to females is less marked than for homicides and other forms of violence.

It is troubling to see that suicide appears among the first five causes of death in the age group 5 to 14 years old—a phenomenon already observed in Canada, the United States, Puerto Rico, Suriname, and Uruguay. In all countries, the problem is most serious in the age group 15 to 24 years old, declines slightly in the age group 25 to 44 years old, and is not among the first five leading causes of death in the age group older than 45 years old. However, there also are high rates of suicide among the elderly, especially those older than 75 years old, in some of the countries. This situation deserves special consideration, in that it raises additional social issues, from the family level up to the macroeconomic and political levels.

The foregoing data, although they only touch on violence that ends in death, show the problem's overall magnitude, its implications, and the need to pursue a range of activities to reverse it.

The connection between health and violence goes far beyond the mere recording of events. Violence threatens or negates the fulfillment of life or life itself, and the health sector's entire practice, from education to medical care, is devoted to fostering life for individuals and social groups. In addition to the mortality it causes, violence produces a growing number of injuries and disruptions that require emergency care and physical or psychological rehabilitation. These effects of violence are overloading the medical care centers and hospitals and place increasing demands on all types of resources. In addition to addressing resource issues, in the coming years the Region's health sector will need to bring about major changes in terms of policies, education, and care strategies. These changes should include the development of adequate indicators to detect morbidity from violence, the refinement of available indicators for the registration of mortality, the redesign of strategies for emergency care services, the relocation of services, and the reformulation of the con-

TABLE 106

Ranking of violence among the first five leading causes of death in the two most affected age groups, in countries with more than one million inhabitants, around 1986.

Country	Year	15 to 24 years old									25 to 44 years old								
		Accidents (E800–E949) and injury undetermined whether accidentally or purposely inflicted (E980–E989)			Homicide, legal intervention, and operations of war (E960–E978, E990–E999)			Suicide (E950–E959)			Accidents (E800–E949) and injury undetermined whether accidentally or purposely inflicted (E980–E989)			Homicide, legal intervention, and operations of war (E960–E978, E990–E999)			Suicide (E950–E959)		
		Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
Argentina	1985	1	1	1	2	2	—	5	5	5	3	1	4	5	4	—	—	—	—
Brazil	1986	1	1	1	2	2	5	5	5	—	1	1	3	3	2	—	—	—	—
Canada	1986	1	1	1	4	4	4	2	2	2	1	1	2	—	5	—	3	2	3
Chile	1986	1	1	1	4	4	—	3	3	4	1	1	2	—	—	—	5	4	—
Colombia	1981[a]	2	2	2	1	1	5	—	5	—	—	—	—	—	—	—	—	—	—
Costa Rica	1986	1	1	1	3	4	3	4	3	4	1	1	3	5	5	—	4	3	—
Cuba	1986[b]	1	1	1	—	—	—	—	—	—	1	1	1	—	—	—	3[c]	—	—
Dominican Republic	1985	1	1	2	3	2	—	—	5	—	1	1	4	5	3	—	—	—	—
Ecuador	1986	1	1	1	2	2	—	—	—	—	1	1	3	2	2	—	—	—	—
El Salvador	1984	1	1	2	2	2	5	3	3	1	1	1	2	2	2	4	5	4	—
Guatemala	1984	1	1	2	—	—	—	—	—	—	—	—	—	1	1	5	—	—	—
Honduras	1981	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Mexico	1983	1	1	1	2	2	5	—	5	—	1	1	2	2	2	—	—	—	—
Panama	1986	1	1	1	2	2	—	4	3	4	1	1	3	4	2	—	—	5	—
Paraguay	1986	1	1	2	2	2	—	5	4	5	1	1	5	5	2	—	—	—	—
Peru	1983	1	1	1	—	4	—	—	—	—	—	—	—	—	—	—	1	1	5
Puerto Rico	1986	1	1	1	2	2	2	5	4	—	1	1	3	2	2	3	—	—	—
Trinidad and Tobago	1983	1	1	2	3	3	—	2	2	1	1	1	3	—	5	—	4	3	—
United States of America	1986	1	1	1	2	2	2	3	3	3	1	1	2	5	5	5	4	4	4
Uruguay	1986	1	1	1	5	—	4	2	2	2	2	1	2	—	—	—	5	4	—
Venezuela	1983	1	1	1	2	2	—	4	3	5	1	1	3	3	2	—	—	5	—

[a]Includes the age group 15 to 44 years.
[b]Includes all accidents and violence.
[c]Includes the age group 15 to 49 years.

tent and methods in health education and manpower training in order to deal with the problem conceptually, programmatically, and operationally.

In some countries, the health sector itself increasingly suffers from the effects of violence, whether because its services are overburdened and/or its officials and workers are under psychological pressure, or even because its personnel are directly threatened by the complex web of confrontations. Each of these problems should be systematically studied in order to find ways to counteract them. Sometimes the health sector can become an agent of violence as well, as when medical or paramedical personnel impose hospitalization or certain procedures, when medical knowledge becomes arrogant and assumes the patient's ignorance, or when, for a variety of reasons, large sectors of the population are deprived of the right to health services. These potential problems also deserve to be studied and understood, so that they can be eliminated.

The fact that violence is a complex problem should not excuse passivity. This is not merely a matter of an additional fatality to be endured; rather, it is a social reality that can be changed and controlled through joint efforts at all levels and in different areas. The health sector should play a major role in reversing both the situation described above and that which, although not specifically reported, is becoming increasingly clearer in different countries through records, accusations, and investigations of child abuse and violent acts against women, the elderly, and workers. Interdisciplinary efforts, specific and rigorous research, individual and institutional attitude changes from the local level to national and international levels, redefinition of policies, allocation of resources, reorganization of services, interinstitutional activities, and assignment of priority to the subject are some of the efforts to be undertaken immediately by the health sector as its contribution to social conscience and as its response to the challenge being posed by violence throughout the Region of the Americas.

Food-Borne Diseases

The Joint FAO/WHO Expert Committee on Food Safety[48] has stated that food-borne illnesses constitute the most widespread group of diseases in the world. According to published data, more than one billion cases of diarrheal disease occurred in children under 5 years old in 1980, which means that contaminated water and food were mainly responsible for the high infant mortality recorded in the developing countries.

[48]World Health Organization, *The Role of Food Safety in Health and Development*, Technical Report Series No. 705 (Geneva, 1984).

The Surgeon General of the United States of America, in his report on nutrition and health,[49] points out that, "Despite high standards of sanitation in the United States, the incidence and costs of food-associated disease are considerable (although assessments of the magnitude of the problem vary widely due to difficulties with data collection and case reporting). . . . However, published estimates range from 24 to 81 million cases per year of gastrointestinal illness due to contaminated food or person-to-person spread.[50] In cases in which the causes were confirmed, bacterial pathogens accounted for approximately two-thirds of the outbreaks and chemical agents for about one-fifth."

The report goes on to say that, according to a recent analysis, the economic costs of food-associated illness may be as high as $US23 billion, excluding costs to industry (see footnote 50). Statements at the III Conference on Food Protection, held in the United States, affirmed that the direct and indirect costs of food-borne diseases can and indeed do amount to billions of dollars a year, but that more tragic are the chronic or even fatal results of these episodes, which sometimes affect vulnerable population groups such as the elderly and newborns.[51] It has been calculated that in the United States more than 9,000 persons die each year because of food-borne diseases,[52] and many more die from their complications or long-term consequences.

In Venezuela, the Division of Communicable Diseases and Accidents reported that during the period 1981–1985 food-borne illness accounted for 52.7% of all cases of compulsorily notifiable diseases, and that in more recent years the situation has gotten worse. In Chile, Cuba, and Mexico—countries in which efforts have been made to carry out epidemiological surveillance of food-borne diseases—the extent and severity of the problem is beginning to be known (Table 107).

A brief review of the major outbreaks of food-borne diseases in the Americas during 1985–1988 will be useful, although, of course, it is not exhaustive.

Food-borne Infections

Salmonellosis is unquestionably the food-associated infection that has caused the most concern in the countries of the Americas during the period 1985–1988. In addition to being one of the most frequent food-borne

[49]United States of America, Department of Health and Human Services, *The Surgeon General's Report on Nutrition and Health* (Washington, D.C., 1988).

[50]D.L. Archer and J.E. Kvenberg, "Incidence and Cost of Foodborne Diarrheal Disease in the U.S.," *J Food Prot* 48(10):887–894, 1985.

[51]S.A. Miller, "A New Manifesto for Food Safety," in C.W. Felix (ed.), *Food Protection Technology, Proceedings of the 1986 Conference for Food Protection* (Michigan: Lewis Publishers Inc., 1987).

[52]Report to the U.S. Congress.

TABLE 107

Number of outbreaks and cases of food-borne diseases in selected countries of the Region, 1985–1988.

Country	1985		1986		1987		1988	
	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases
Argentina[a]	...	17,468	...	18,228	...	14,403	...	23,548
Chile	...	...	49	455	129	949	117	1,559
Colombia[b]	...	6,967	...	7,512	...	8,424	...	8,668
Cuba	264	20,568	308	19,084	288	13,913	237	14,358
Jamaica	...	388	...	104	...	251	...	...
Mexico	25	8,323	27	27,149	15	34,100	22	36,016
United States of America[c]	495	31,079	467	12,781	387	16,500	...	...
Venezuela[d]	...	6,339	...	14,327	...	5,978	...	7,899

[a]Includes typhoid fever, hepatitis, hydatidosis, food poisonings, and trichinosis.
[b]Food-borne infections are reported; the authorities also include a number of cases of diarrhea and enteritis as diseases associated with food: 1985, 481,930; 1986, 423,754; 1987, 510,351; 1988, 577,289.
[c]Cases reported to the Centers for Disease Control.
[d]Includes only those cases studied and reported by the Rafael Rangel National Institute of Hygiene.

diseases, it has in some cases produced outbreaks of massive proportions. The worst in the history of public health in the United States occurred in April 1985. At least 16,284 persons are known to have been affected, but estimates place the true figure at as many as 25,000. Seven deaths were reported in connection with this outbreak, which affected persons in Illinois, Indiana, Iowa, Michigan, Minnesota, and Wisconsin. The etiologic agent, *Salmonella typhimurium,* which was resistant to several antibiotics, was traced to pasteurized milk from a single plant.

The eating of undercooked eggs or egg products has led to a number of serious outbreaks, with fatal cases, in Argentina and the United States. In Argentina, the number of salmonellosis outbreaks of food origin began to increase in 1986; the agent was *Salmonella enteritidis,* and it was traced to poultry products. Among the most serious outbreaks were one that occurred in January 1987 in Chapadmalal, Buenos Aires Province, which was caused by the consumption of contaminated chickens and affected more than 540 people; one in August 1987 in Rosario, Santa Fe Province, which was caused by the consumption of home-made mayonnaise and affected between 100 and 500 persons, resulting in at least two deaths; and one that took place in Córdoba in February 1988, which was also linked to mayonnaise and produced about 400 cases. In all, between 1986 and 1988 there were 39 documented outbreaks causing more than 2,500 cases and a number of deaths.[53]

In the United States the situation was similar: in September 1988 the Centers for Disease Control reported that during the period 1976–1986 the number of persons infected by *Salmonella enteritidis* had risen sixfold relative to previous periods, and that in the last two years the infections were associated predominantly, but not exclusively, with the eating of undercooked eggs. Between January 1985 and May 1987, 65 outbreaks of salmonellosis produced by *Salmonella enteritidis* were studied. An outbreak occurred in 1986 that affected 3,300 persons who had eaten pasta containing undercooked egg. In 1987 there were 43,000 confirmed human cases of salmonellosis, although the actual number that had occurred was estimated to be closer to half a million. In all these years, deaths have also been associated with salmonellosis. In Mexico a large number of cases of salmonellosis were reported during the 1985–1988 period, with an average of more than 40,000 a year.

Campylobacter infections appear to be spreading in the countries of the Region. In Peru, the etiologic agent was found in 15% of fecal samples from children with diarrhea

[53]T. Eiguer, M.I. Caffer, and G.B. Fronchkowsky, "Enfermedades transmitidas por alimentos: magnitud de los brotes por *Salmonella enteriditis* en Argentina," *Rev Argent Microbiol* 1989.

in Lima and 23% of fecal samples from children living in the city of Iquitos. The infection may have been associated with the eating of undercooked chicken or, particularly, with direct exposure to the feces of infected chickens.[54] In Ecuador, a study found *Campylobacter jejuni* in 23% of fecal samples from children under the age of 2 years who had diarrhea; in children 19 to 24 months old, the percentage rose to 35.3%.[55]

Since the pandemic of shigellosis caused by *Shigella dysenteriae* that ravaged Central America at the beginning of the 1970s, causing some 500,000 cases and more than 20,000 deaths, the number of cases of this disease has declined considerably. However, in 1988 numerous cases were reported, especially among U.S. tourists visiting the Yucatán Peninsula in Mexico. Coupled with the increase in shigellosis among the inhabitants of that region, this occurrence leads epidemiologists to suspect that a major new epidemic may occur in Central America.[56]

In California (United States) in 1985, there was an outbreak of listeriosis caused by *Listeria monocytogenes* in soft cheese. At least 86 cases were confirmed, and they resulted in 29 deaths and several abortions. Several other subsequent outbreaks were equally serious.[57]

Food Poisoning

Cases of botulism continued to occur frequently in Argentina. During the 1985–1988 period, outbreaks occurred in the United States, and many cases were reported in Canada. The first outbreak of botulism in Peru was studied and reported on. It caused at least three deaths, and 12 patients had to be hospitalized and treated. The food responsible was sausages, and *Clostridium botulinum* type B was the causative agent.

Staphylococcal toxicosis continues to be the most frequent form of food poisoning in Latin America, and the food that commonly causes this problem is fresh cheese. In Venezuela, 64.7% of the outbreaks studied by the National Institute of Hygiene between 1981 and 1988 corresponded to this etiology;[58] in Chile, it was the most frequent food-borne disease.

Cases of ciguatera, a debilitating disease caused by eating tropical fish contaminated with a toxin produced by algae, have increased in number and frequency, affecting tourism in the countries of the Caribbean area. In Cuba a recent outbreak affected more than 150 Canadian tourists; it was one of the largest single episodes reported so far.[59]

During the period several major outbreaks of paralytic shellfish poisoning occurred in Mexico, Argentina, and Guatemala, causing fatalities in the latter two countries. In Guatemala, some 300 persons were affected, 26 of whom died. The mollusks involved were shown to have one of the highest concentrations of saxitoxin ever described. As a result of these outbreaks, more attention has been given to the phenomenon known as "red tide," and other outbreaks have been studied in which diarrheogenic intoxication was traced to mollusks.

With regard to amnesiotoxicosis, during the winter of 1987 at least 150 persons who ate blue mussels cultivated in the Canadian province of Prince Edward Island experienced varying degrees of gastrointestinal and neurological dysfunction, and four of them died. Autopsies revealed cerebral lesions, and some of the survivors suffered permanent loss of recent memory. The causative agent was domoic acid, a substance that affects the central nervous system of mammals by altering normal neurochemical transmission in the brain when it binds to certain glutamate receptors on neurons. The domoic acid was synthesized inside the mussels by the diatom *Nitzschia pungens,* a common planktonic species in the coastal waters of the Atlantic, Pacific, and Indian Oceans. Because of this circumstance, it is feared that similar outbreaks may occur in other countries.[60]

Some outbreaks of poisoning have resulted from the consumption of food contaminated with pesticides. One of these, which took place in Jujuy, Argentina, in 1985, caused the death of several children in a neonatology service who had been bottle-fed with canned powdered milk that had been transported in a vehicle carrying phosphorous pesticides; one of the pesticide containers had come open in transit. The section on environmental problems affecting health provides more information on poisonings of this kind.

Finally, natural substances have produced several outbreaks of food poisoning during the period. One of them was linked to eating unripe akee harvested in Jamaica, and another, in Venezuela, to consumption of bitter cassava containing a high level of cyanide.

[54]O. Grados, N. Bravo, R.E. Black, and J.P. Butzler, "Diarrea pediátrica por *Campylobacter* debida a la exposición doméstica a pollos vivos en Lima, Perú," *Bol Of Sanit Panam* 106(3):205–213, 1989.

[55]R.H. Guderian, R.G. Ordóñez, and R. Bossano R., "Diarrea aguda asociada a *Campylobacter* y otros agentes patógenos en Quito, Ecuador," *Bol Of Sanit Panam* 102(4):333–339, 1987.

[56]J. Parsonnet, K. Greene, N. Strockbine, R. Tauxe, and J. Sepúlveda Amor, "Shiga Bacillus among American Tourists: Harbinger of a Central American Epidemic" (Centers for Disease Control and Expanded Program on Immunization, 1989).

[57]R.M. Twedt, "Multiple Aspects of Foodborne Listeriosis" (address to the Codex Committee on Food Hygiene, Washington, D.C., 1988).

[58]M. Perdomo, "Enfermedades transmitidas por los alimentos en Venezuela, 1989," in *Final Report of the I Meeting of the Working Group on Epidemiological Surveillance and Foodborne Diseases (VETA I), 1989,* Document HEV/FOS/89-005.

[59]C. Frenette, J.D. MacLean, and T.W. Gyorkos, "A Large Common-source Outbreak of Ciguatera Fish Poisoning," *J Infect Dis* 158(5):1128–1130, 1988.

[60]C.J. Bird and J.L.C. Wright, "The Shellfish Toxin Domoic Acid," *World Aquaculture* 20(1):4041, 1989.

Environmental Problems Affecting Health

Human health largely depends on environmental conditions, including the availability of drinking water, sewage and excreta disposal services, adequate housing, and the reduction of biological, physical, and chemical pollution.

Various diseases are associated with water, including those transmitted directly by biological or chemical agents through water (for example, cholera, viral hepatitis, amebiasis, typhoid fever, fluorosis, arsenic poisoning); those caused by inadequate hygiene due to lack of water (scabies, pediculosis, conjunctivitis); those caused by contact with water (leptospirosis, schistosomiasis, otitis); and those transmitted by vectors living in the water (malaria, schistosomiasis, onchocerciasis).

In Latin American and Caribbean countries, economic development and industrialization have brought with them new environmental health problems linked to additional industrial waste outlets that have increased the population's exposure to chemical substances, some of which can cause acute toxic effects or specific chronic diseases. This chemical contamination is added to the biological pollution from human wastes.

Toxic substances in runoff water and the underground infiltration of rainwater contaminated by contact with the soil and air also contribute to water pollution. Whatever the origin of the chemical contamination, the agents that cause the greatest concern include synthetic organic compounds and certain metallic ions.

In order to assess their impact on human health, chemical substances in drinking water have been classified into three categories. The first type include those substances that can cause acute or chronic toxicity (for example, certain metals, nitrates, and cyanide); the extent to which they harm health increases with their concentration in the drinking water, but it is not always possible to observe their damage below certain concentrations. The second category comprises genotoxic substances that can have carcinogenic, mutagenic, or teratogenic effects (for example, synthetic organic substances, some insecticides and pesticides, and arsenic). The final category involves essential dietary substances (for example, fluorine, iodine, and selenium).

Drinking Water and Sanitation

Ample evidence has shown how drinking water and sanitation affect health, particularly in terms of infant survival. Nevertheless, in order to reach the proposed health objectives, water and sanitation services must be coupled with health education, to enable the population to use water well and responsibly.

Sewage and excreta seriously threaten public health because they have high levels of pathogenic organisms and organic and inorganic chemical substances, some of which may lead to toxic, mutagenic, carcinogenic, or teratogenic consequences. The pathogenic organisms in excreta, sewage, or improperly treated sludge, including bacteria, viruses, protozoans, and helminths, pose the greatest risks.

Several highly significant diseases in terms of both public health and the economy, such as taeniasis, neurocysticercosis, ascariasis, and ankylostomiasis, are closely linked to poor sanitation, inappropriate excreta disposal, and lack of personal hygiene. Although these diseases have a low mortality rate, their morbidity is extremely high, leading to debility and lower productivity.

TABLE 108

Use of wastewater for agricultural irrigation in some countries of the Americas.

Country	City and area	Type of wastewater used	Crops irrigated and produced	Approximate area irrigated (hectares)
Argentina	Mendoza (city)	Primary effluent	Lettuce, onions, tomatoes, artichokes	2,000
Chile	Santiago (Zanjón de la Aguada)	70% of the wastewater from the city	Lettuce, cabbage, celery, grains, grapes	6,000
Mexico	Valle del Mezquital	Wastewater from Mexico City	Corn, wheat, oats, tomatoes, peppers, fodder	58,000
Peru	Country (as a whole)	Wastewater	Various crops	5,000–6,000
	San Martín de Porras (Lima)	Untreated wastewater	Tomatoes, radishes, spinach, fodder	1,500–2,000
	Ica (Cachiche)	Effluent from facultative pond	Cotton, corn, grapes	400

Source: IRWCD News No. 24, 25 May 1986.

TABLE 109

Coverage of drinking water supply and sanitation in 25 countries of the Americas, up to December 1988. (Population in thousands.)

				Drinking water supply							
				Total population served				Urban population served			
Country	Total population	Urban population	Rural population	With connection	With easy access	Total	% of country's population	With connection	With easy access	Total	% of urban population
Argentina	31,074	26,219	4,855	18,208	1,763	19,971	64.27	18,208	944	19,152	73.05
Bahamas	241	136	105	126	114	240	99.59	126	9	135	99.26
Barbados	253	89	164	87	165	252	99.60	87	2	89	100.00
Belize	175	90	85	70	65	135	77.14	70	5	75	83.33
Bolivia	6,928	3,471	3,457	2,311	898	3,209	46.32	2,311	374	2,685	77.36
Brazil	144,426	106,587	37,839	96,577	42,252	138,829	96.12	96,577	9,832	106,409	99.83
Chile	12,748	10,497	2,251	10,287	672	10,959	85.97	10,287	210	10,497	100.00
Colombia	31,200	22,100	9,100	14,500	12,800	27,300	87.50	14,500	4,900	19,400	87.78
Costa Rica	2,866	1,719	1,147	1,685	997	2,682	93.58	1,685	34	1,719	100.00
Dominican Republic	6,866	4,038	2,828	1,913	1,624	3,537	51.51	1,913	820	2,733	67.68
Ecuador	10,203	5,529	4,674	3,963	1,918	5,881	57.64	3,963	190	4,153	75.11
El Salvador	5,032	2,349	2,683	1,672	379	2,051	40.76	1,672	110	1,782	75.86
Guatemala	8,681	3,287	5,394	2,393	2,830	5,223	60.17	2,393	608	3,001	91.30
Guyana	756	246	510	196	413	609	80.56	196	34	230	93.50
Haiti	5,562	1,581	3,981	474	1,851	2,325	41.80	474	403	877	55.47
Honduras	4,625	1,947	2,678	1,600	1,747	3,347	72.37	1,600	140	1,740	89.37
Mexico	89,500	63,500	26,000	47,000	14,498	61,498	68.71	47,000	3,928	50,928	80.20
Nicaragua	3,622	2,109	1,513	1,436	492	1,928	53.23	1,436	206	1,642	77.86
Panama	2,282	1,111	1,171	1,063	823	1,886	82.65	1,063	48	1,111	100.00
Paraguay	3,900	1,733	2,167	866	420	1,286	32.97	866	260	1,126	64.97
Peru	21,256	13,890	7,366	8,679	3,743	12,422	58.44	8,679	2,100	10,779	77.60
Suriname	395	296	99	2	282	284	71.90	2	229	231	78.04
Trinidad and Tobago	1,230	840	390	730	450	1,180	95.93	730	110	840	100.00
Uruguay	2,990	2,607	384	2,387	152	2,539	84.92	2,387	132	2,519	96.62
Venezuela	18,757	15,604	3,153	12,142	4,614	16,756	89.33	12,142	1,814	13,956	89.44
Total	415,568	291,575	123,994	230,367	95,962	326,329	78.53	230,367	27,442	257,809	88.42

[a]Insufficient data.

Because of the Region's limited availability of water and the increasing water demand for the countries' socioeconomic development, in many parts of the Region, especially in highly populated arid and semiarid areas, domestic wastewater is widely used for agricultural irrigation (Table 108). This domestic wastewater often is used for agricultural irrigation without any prior control or suitable sanitary measures, threatening the health of farm workers, people living in the irrigated areas, and consumers of farm products.

Diseases related to contaminated drinking water and inadequate disposal of sewage and excreta are among the three leading causes of disease and death in the world. In several Latin American and Caribbean countries, gastroenteritis and diarrheal diseases rank among the ten leading causes of death and are responsible for about 200,000 deaths per year, excluding deaths from typhoid fever, hepatitis, and similar diseases.

In November 1980, the United Nations General Assembly proclaimed the International Drinking Water

TABLE 109 (cont.)

Coverage of drinking water supply and sanitation in 25 countries of the Americas, up to December 1988. (Population in thousands.)

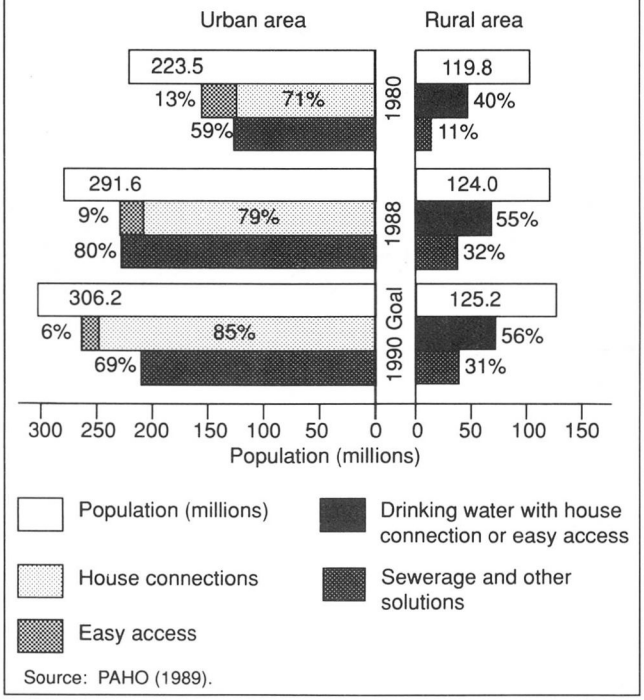
Rural population served		Sewerage and excreta disposal									
		Total population served				Urban population served				Rural population served	
Total	% of rural population	With connection	Other	Total	% of country's population	With connection	Other	Total	% of urban population	Total	% of rural population
819	16.87	10,261	17,379	27,640	88.95	10,261	15,958	26,219	100.00	1,421	29.27
105	100.00	22[a]	114[a]	136[a]	56.43[a]	22	114	136	100.00	0[a]	0.00[a]
163	99.39	18[a]	24[a]	42[a]	16.60[a]	18	24	42	47.19	0[a]	0.00[a]
60	70.59	20	107	127	72.57	20	55	75	83.33	52	61.18
524	15.16	1,394	960	2,354	33.98	1,394	520	1,914	55.14	440	12.73
32,420	85.68	45,000	68,155	113,155	78.35	45,000	49,896	94,896	89.03	18,259	48.25
462	20.52	8,654	1,983	10,637	83.44	8,654	1,843	10,497	100.00	140	6.22
7,900	86.81	12,000	8,300	20,300	65.06	12,000	6,700	18,700	84.62	1,600	17.58
963	83.96	722	2,063	2,785	97.17	722	997	1,719	100.00	1,066	92.94
804	28.43	882	3,220	4,102	59.74	882	2,209	3,091	76.55	1,011	35.75
1,728	36.97	3,441	2,317	5,758	56.43	3,441	719	4,160	75.24	1,598	34.19
269	10.03	1,339	1,706	3,045	60.51	1,339	671	2,010	85.57	1,035	38.58
2,222	41.19	1,617	3,325	4,942	56.93	1,617	741	2,358	71.74	2,584	47.91
379	74.31	70	577	647	85.58	70	138	208	84.55	439	86.08
1,448	36.37	0	1,228	1,228	22.08	0	650	650	41.11	578	14.52
1,607	60.01	1,178	1,709	2,887	62.42	1,178	539	1,717	88.19	1,170	43.69
10,570	40.65	33,518	6,917	40,435	45.18	33,518	4,689	38,207	60.17	2,228	8.57
286	18.90	685[a]	0[a]	685[a]	18.91[a]	685	...	685[a]	32.48[a]	0[a]	0.00[a]
775	66.18	805	1,104	1,909	83.65	805	305	1,110	99.91	799	68.23
160	7.38	437	1,810	2,247	57.62	437	510	947	54.65	1,300	59.99
1,643	22.31	7,640	1,223[a]	8,863[a]	41.70[a]	7,640	...	7,640[a]	55.00[a]	1,223	16.60
53	53.54	9	212	221	55.95	9	178	187	63.18	34	34.34
340	87.18	250	970	1,220	99.19	250	590	840	100.00	380	97.44
20	5.21	1,436	370	1,806	60.40	1,436	119	1,555	59.65	251	65.36
2,800	88.80	10,611	6,719	17,330	92.39	10,611	4,509	15,120	96.90	2,210	70.09
68,520	55.26	142,009	132,492	274,501	66.05	142,009	92,674	234,683	80.49	39,818	32.11

Supply and Sanitation Decade (1981–1990), which aimed at providing the world's population with adequate systems of safe water supply and sanitation by 1990. Table 109 and Figure 28 show the coverage achieved during the Decade's first eight years (1981–1988) in those countries of the Region that provided data. The urban population with water supply services increased from 186 million (84%) in 1980 to 257.8 million (88%) in 1988, and sewerage service coverage rose from 100 million (44%) in 1980 to 142 million (49%) in 1988. Water supply coverage in the rural sector increased from 49 million (40%) to 68 million (55%) and rural sanitation services covered 32% in 1988.

Although there are significant differences among the countries regarding services and progress, in overall terms, the urban sector has better water and sanitation services, and, in all instances, water supply coverage is better than that of sanitation. Also noteworthy is the urban population's strong growth, which burdens and deteriorates existing services. In 1987, four countries re-

FIGURE 28

Coverage of drinking water supply and sewerage and excreta disposal services in Latin America and the Caribbean, 1980 and 1988, and goals for 1990.



Source: PAHO (1989).

ported total drinking water coverage below 50%, and ten reported that the rural population coverage was below 50%. Figure 29 shows the water and sanitation coverage reported in 1987.

An evaluation conducted in 1985 showed that, of the 24 countries that set water supply goals for the rural sector, 12 were close to achieving them or had a good chance of doing so and 12 needed to increase their efforts significantly in order to meet these goals.

In general terms, progress in expanding coverage during the first eight years of the Decade has fallen short of expectations, and it will not be possible to achieve the urban water supply goal set for 1990 (91%). Neither will it be possible to reach the urban sanitation goal set for sewerage connections (71%). Water supply coverage in the rural sector would have to be increased by 1% to achieve the goal.

Nevertheless, several aspects of the sector's management have improved during the period: there is a greater awareness of the need to deal with these problems, an acceptance of the need to pay for services, additional incorporation of appropriate and low-cost technology, and more extensive community participation in the development of the services.

Quality of Services

Development and industrialization have created a conflict over the use of water resources in the Region's countries. The countries' water and sewerage sectors themselves have been largely responsible for the deterioration of the quality of services; it is estimated that in Latin America's urban centers approximately 90% of untreated sewage is emptied into surface streams. Most existing water supply systems have been designed to operate with higher quality untreated water than is currently found in them, but these systems lack the necessary operational flexibility to remove the contaminants they receive. Consequently, the water supplied to the population continues to move further away from established quality standards. Few countries in the Region have institutions that are responsible for controlling the quality of water for human consumption or for overseeing the corresponding monitoring programs.

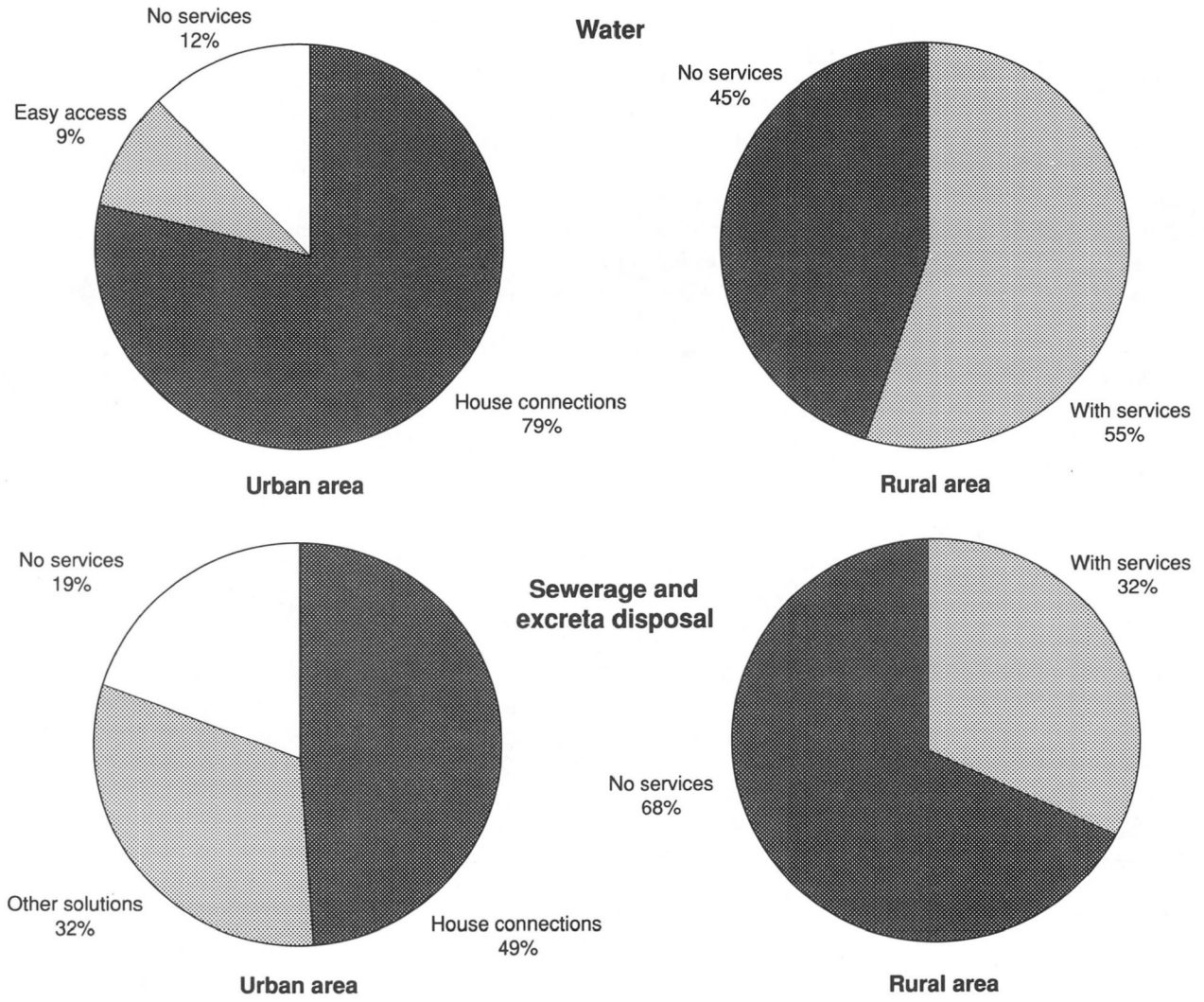
Continuity of water supply services, which is an important indicator of the performance of the systems, is a problem many of the Region's communities face. Demand beyond production capacity, operational problems, water losses and waste make many systems function intermittently, which seriously affects the well-being and health of the users. In most systems, operations and maintenance are not given enough attention. In general, the institutions responsible for water and sanitation management mostly operate as construction companies, emphasizing construction and improvements. Resources earmarked for infrastructure maintenance are mainly devoted to repairs and only rarely are used for preventive maintenance. A reliance on imported equipment and parts aggravates maintenance problems, particularly as countries face foreign exchange shortages, and causes frequent interruptions in service.

Operations and Maintenance

Given the economic and social situation in the Region's countries, the water and sanitation sector needs to explore alternative options in order to more efficiently develop the water systems' installed capacity. To expand coverage, the Region's water and sanitation institutions have concentrated efforts and resources on building new supply systems and on expanding the capacity of existing ones. Consequently, they set aside important matters such as operations, maintenance, management, and marketing of services, leading to inadequate and inefficient use of the systems and generating losses of up to 50% of the treated water. This can be confirmed by water consumption patterns in most of the capitals of the Latin American countries, where daily supplies exceed 300 to 400 liters per person. This excessive consumption is due, among other

FIGURE 29

Coverage of drinking water supply and sewerage and excreta disposal services in urban and rural areas of Latin America and the Caribbean, 1988.



Source: PAHO (1989).

factors, to rates that do not reflect the actual cost of the service, failure to measure consumption, and the slight regard for the resource.

With insufficient emphasis on operations and maintenance, the water services function inefficiently. Therefore, countries such as Brazil, Colombia, Mexico, and Peru, as well as the Central American countries, have undertaken efforts through operational or loss control programs. These programs seek to implement planned changes aimed at strengthening the management and operational capacity of the institutions responsible for drinking water and sanitation services through the harmonious and coordinated development of their various units.

The three main areas targeted by loss control programs are the control of physical losses from leaks/spills and of operational shortcomings; the control of commercial losses from free and clandestine consumption and erroneous measurements and calculations; and the control of the inefficient use of water, which directly affects the capability to expand the service.

It should be noted that some of the Region's countries are trying to develop new technology such as low-volume

toilets and flow-volume controllers, that would lead to a more efficient use of water and would avoid excessive consumption. It is also important to educate the community to save rather than waste water.

Collection and Disposal of Sewage and Excreta

In urban areas, 19% of the population lacks sanitation services, which poses a considerable risk to health and the environment; 49% have sewer connections and 32% have septic tanks and latrines that affect the quality of underground water due to the high density of the urban population. In rural areas, 68% of the population lacks services and 32% uses latrines and septic tanks, which constitute a viable alternative in the rural environment.

Urban Refuse Collection

It is estimated that in 1988, the 300 million urban inhabitants in Latin America and the Caribbean generated 225,000 tons of solid waste daily. Trash, which in the past mostly was organic and easily biodegradable, is now comprised of many different materials that increasingly include inorganic substances and even toxic contaminants.

Almost all the large cities of the Region have marginal areas, where 20% to 30% of their urban population lives, and these areas have no regular refuse collection services. Trash then accumulates on the streets or in vacant lots, leading to unpleasant odors and a proliferation of known disease vectors such as flies and rats.

Data are insufficient to establish a direct link between trash and disease. However, it is known that trash is an ideal environment for the reproduction of many vectors, such as flies, mosquitoes, cockroaches, and rodents. An additional problem is the feeding of garbage to edible animals, with the ensuing incidence of certain diseases, such as cysticercosis.

Moreover, trash gathered by the collection service generally is dumped in open-air pits on the outskirts of the cities, usually without a sanitary landfill. This practice also encourages the proliferation of insects and rodents and becomes a source of air pollution (as trash is accidentally or intentionally burned) and water pollution (as percolated or leached liquids produced during decomposition reach surface or underground streams that are often sources of drinking water).

Since the adequate management of the generation, storage, collection, and final disposal of refuse minimizes the above-mentioned threats, it is imperative that those officials in charge of refuse collection, as well as the population at large, be aware of and actively engaged in solving the problem.

Statistical data on coverage of the services in the Region's countries are either lacking or extremely difficult to obtain. Moreover, when such data are available, they may vary extensively over a few years. The trucks and tractors used for collection have very short service lives, and if a city with an adequate collection service does not replace vehicles that are taken out of service, coverage will deteriorate greatly in a few years.

Most of the Region's countries have no laws or regulations to govern the use of packaging and nonreturnable containers or disposable articles. While in developed countries each inhabitant generates between 2 kg and 3 kg of refuse daily, between 0.5 and 1.0 kg are produced in the Region's developing countries. Table 110 shows refuse collection coverage in a sample of 17 cities with more than one million inhabitants, where 60% of the population that resides in cities of this size lives.

Another way to help solve the problem of lack of infrastructure for collection and final disposal of refuse is to recycle, since this makes it possible to reduce the amount of trash while saving natural resources. In several countries unofficial recycling is carried out by trash separators or the collection service workers themselves, and in some countries trash is sold by the truckload to swine raisers. However, this sort of recycling is not really hygienic. Efforts often have been undertaken to redress this situation; trash recycling plants that produce fertilizers are the most common examples, since it is estimated that in the last 30 years 20 such plants have been installed in the Region. However, 90% of them shut down because they failed to conduct marketing studies at the outset. Colombia has been more successful in establishing a recycling program that deals with the most important aspects of this problem.

Refuse collection coverage is 81.7% (see Table 110). This means that 18% of the trash is not picked up, mainly in the marginal areas, where it is more difficult and expensive to provide service due to lack of roads and to the residents' inability to pay. This underlines the importance of basic sanitation programs and projects that include the use of simple technology, community participation, and health education.

Pollution of Water Resources

Latin America and the Caribbean are rich in water resources, and South America is the most favored region in the world in terms of fresh water per capita. Although the water is not uniformly distributed among the countries, or within national boundaries, most of the population has an abundant amount of water to meet its needs.

This essential natural resource is not well managed or protected. The pollution rate is much higher in Latin

TABLE 110

Coverage for collection and final disposal of solid wastes in some Latin American cities with over one million inhabitants, 1985–1988.

Metropolitan area/city	Population (millions)	Garbage (ton/day)	Coverage (%)	Final disposal condition (%)			Responsible	Municipal service or contracted out	Income/ cost[b]	Number of employees
				Good	Fair	Bad				
Mexico City metropolitan area	20.0	15,000	80	20	40	40	Municipality	Municipal	Bad (0%)	17,000
São Paulo metropolitan area	16.0	10,000	90	65	10	25	Municipality	Private	Good	
Buenos Aires metropolitan area	12.0	8,000	96	100	—	—	Municipal Sanitation Company	Mixed	Good	
Lima metropolitan area	6.0	3,500	60	60	10	30	Municipal Sanitation Company	Municipal	Bad (25%)	
Rio de Janeiro	5.0	5,000	95	—	100	—	Municipal Sanitation Company	Municipal	Fair	10,000
Santiago metropolitan area	5.0	3,200	99	98	—	2	Municipal Sanitation Company	Private	Good	
Caracas metropolitan area	4.3	4,000	95	—	100	—	Municipal Sanitation Company	Private	Bad (15%)	7,500
Havana metropolitan area	2.0	1,400	100	—	100	—	Municipal Sanitation Company	Municipal	—	1,800
Santo Domingo	2.0	1,250	78	—	—	100	Municipality	Municipal	Bad (20%)	
Medellin	1.6	750	95	100	—	—	Municipality	Municipal	Good (100%)	750
Montevideo	1.3	900	95	—	—	100	Municipal Sanitation Company	Municipal	—	
Quito	1.3	900	70	—	—	100	Municipality	Municipal	Bad (13%)	750
Guatemala	1.3	940	66	—	—	100	Municipality	Private[a]	Good	
La Paz	1.0	600	50	50	50	—	Municipality	Municipal	Fair	900
San José	1.0	800	80	100	—	—	Municipality	Municipal	Good	
Managua	1.0	600	70	—	—	100	Municipality	Municipal	—	
San Salvador	1.0	650	70	—	70	30	Municipality	Municipal	Fair (60%)	1,115
Average			81.7	34.9	28.2	36.9				

[a]Service provided by informal private collectors.
[b]Bad: 0 to 33%; fair: 34 to 67%; good: 68 to 100%.

America than in other regions of the world. Calculations show that South America pollutes nearly 11 times more freshwater on a per capita basis than Europe. This figure is not surprising, since less than 10% of the municipalities of Latin America and the Caribbean treat sewage adequately before emptying it into natural watercourses.

Underground Water

This important resource is currently exploited for municipal water supplies, industrial use, and irrigation. It is estimated that 50% of the Latin American and Caribbean communities use underground water as their primary water source, and most of the large cities, such as Buenos Aires, Mexico City, Lima, Santiago, and São Paulo, also make use of underground water from wells located throughout the distribution network. Improper disposal of sewage, together with municipal and industrial wastes, threatens this important resource. Contamination from the leaching of landfills and the improper discharge of industrial wastes, especially those containing organochlorine compounds, are reasons for concern in the principal cities. Some organochlorines are known to be mutagenic and carcinogenic.

In rural areas, generalized and indiscriminate use of agricultural chemicals, especially nitrates, also has been identified as a potential source of underground water pollution. Nitrates in drinking water can cause meth-

emoglobinemia. Contamination of domestic septic tanks with both nitrates and bacteria is also a serious problem.

Since it is almost impossible to deal with polluted underground water on a cost-efficient basis, and since over the long term a contaminated aquifer is a condemned aquifer, prevention of its contamination through appropriate measures for control and monitoring is a matter of high priority.

Surface Water

Latin America has vast resources of rivers and lakes, although often they are not located in the areas of greatest demographic concentration.

The intensive use of surface water has reduced its quality considerably, as many studies have shown. The most serious problem is the deterioration of drinking water quality due to the various chemicals, wastes, pesticides, solvents, and other products. Pollution of a water source with harmful substances that resist normal water treatment processes, such as arsenic, soluble forms of heavy metals, numerous pesticides, insecticides, rodenticides, and organochlorines—many of which are highly carcinogenic, mutagenic, or teratogenic—can have a serious impact on health.

Biological Pollution

Biological pollution of the natural lakes and artificial reservoirs also causes similar problems for the water supply intakes, but they are frequently overshadowed by other problems related to eutrophication caused by the nutrients in sewage discharge and agricultural surface runoff. The eutrophication causes the formation of trihalomethanes and objectionable tastes and odors; it can also cause fish die-offs.

Only a very small percentage of the coastal cities treat municipal sewage before discharging it into the ocean, and the treatment is often inadequate to prevent biological contamination. When the sewage is taken far enough from the coast and released deep enough, the ocean itself, by dilution and through its absorption capacity, can carry out a waste treatment function, but this practice is the exception rather than the rule. Most often, untreated sewage is discharged into rivers and streams that empty into the ocean (Table 111), or it is discharged directly into the ocean through a short outlet. Many beautiful beaches close to large cities are polluted with fecal coliforms, viruses, and even hospital wastes. Consumption of mollusks and crustaceans harvested in contaminated areas has caused outbreaks of diseases such as typhoid fever and hepatitis.

Chemical Pollution

Through the Regional Program for Evaluation and Management of Toxic Substances in Surface Waters, PAHO sought to identify problems in this area by means of a survey conducted in various countries. The data received by the Organization do not allow concise assessment of the situation in Latin America and the Caribbean. The information presented below is a preliminary, qualitative, and, in some instances, limited review of the problems, and should not be considered complete for any country.

In Argentina, the Reconquista and Matanza-Riachuelo rivers, which flow through the Buenos Aires metropolitan area, receive huge amounts of heavy metals and organic

TABLE 111

Fecal coliforms in rivers analyzed by the Global Environmental Surveillance System.

Number of fecal coliforms per 100 ml	Number of rivers in each Region[a]			
	North America	Central and South America	Europe	Asia and the Pacific
10	8	0	1	1
100	4	1	3	2
1,000	8	10	9	14
10,000	3	9	11	10
100,000	0	2	7	2
...	0	2	0	3
Total no. of rivers	23	24	31	32

[a]No reported data exist for Africa.

compounds owing to the discharge of industrial wastes. Large amounts of pesticides enter the Negro River, although their concentrations do not greatly surpass international standards.

In Bolivia, the Choqueyapu River in La Paz is the destination of the untreated effluent of the mining industry.

The Tieté River, in the São Paulo metropolitan area of Brazil, receives large waste discharges of industrial and urban origin. Despite the industrial and agricultural effluents that enter the Paraíba River and the chronic toxicity identified there, levels of metals and pesticides appear to be within international standards.

In Colombia, the Bogotá River receives untreated effluent from the petrochemical and textile industries, tanneries, and other sources. Concentrations of heavy metals in excess of international standards have been found. The Magdalena River receives effluent from various industrial complexes in addition to the runoff containing pesticides and fertilizers.

The main problem in Costa Rican rivers consists of heavy metal and agricultural chemical pollution.

In Chile, the Bío-Bío River receives considerable discharges of effluent from refineries, in addition to heavy metals and pesticides. Industrial mining wastes are discharged into the Elqui, Malo, and La Ligua rivers. The Aconcagua River receives discharges of pesticides and fertilizers. In the Maipo River, as in some of its tributaries, industrial pollution, heavy metals such as copper and iron from mining operations, and pesticides are problems.

The Guayas River in Ecuador, on whose banks the city of Guayaquil is located, receives untreated industrial effluent containing metals and pesticides.

The untreated effluent from 14 tanneries poses a potential problem for rivers in El Salvador, as do heavy metals and pesticides in the Nazas, Lerma, Conchos, Colorado, Coatzacoalcos, Pánuco, and San Juan river basins of Mexico.

In Panama, serious problems have been detected as a result of the discharge of industrial and domestic wastes into the Curundú, Juan Díaz, Matías, Hernández, Tapia, Bajo, Chilibre, and Chilibrillo rivers.

The Rímac and Mantaro rivers of Peru receive large discharges of zinc, copper, silver, cadmium, and lead from the extensive mining industry in the valleys.

In Venezuela, the Tuy River, which is close to Caracas, receives effluent containing metals from the metallurgical and chemical industries; pesticide pollution is also a possibility.

Most of the rivers mentioned above supply water to large metropolitan areas. The conventional treatment plants are not designed to eliminate the growing amount of toxic substances, and the economic crisis has made the task of improving treatment systems, and thus reducing the risk to health associated with this pollution, even harder.

The Pan American Center for Sanitary Engineering and Environmental Science (CEPIS) has had a Program for Evaluation and Management of Toxic Substances in Surface Waters since 1984. The project has had far-reaching results, ranging from risk evaluation and management to a policy on control and development of technology.

Given the importance of tourism in many countries of the Region, the pollution of beaches is a matter of concern. About 85 underwater outlets are in operation, under construction, or in the final stages of design in Latin America and the Caribbean. However, only 18 of them serve cities of more than 100,000 inhabitants, and these cities are only partially served. Most of the sewage generated by the coastal population is discharged untreated along or very close to the beaches, frequently causing aesthetic, public health, ecological, and economic problems.

The coastal population of the Region is expected to increase from 58.1 million in 1983 to more than 110 million in the year 2000. This size would result in an effluent rate of approximately 250 m^3/sec, and its appropriate disposal will be critical to the Region's future.

Air Pollution

Urban air pollution, caused by industrial activities, motor vehicles, electricity generation, and the service industries, is a mixture of carbon monoxide, sulfur dioxide, dust and smoke, nitrogen oxides, and a number of volatile organic compounds. In the countries of Latin America and the Caribbean in which tetraethyl lead is added to gasoline, the air also contains fine particles of lead. Moreover, air pollution involves photochemical reactions that produce ozone, a highly reactive and toxic substance.

It is estimated that at the present time the air breathed by 60% to 80% of the people living in urban areas throughout the world is of marginal or unacceptable quality. The health effects are substantial in high-risk groups, such as small children, the elderly, and persons with heart conditions or respiratory diseases such as asthma and emphysema. Children are very sensitive to lead present in the air, and it is believed the lead they ingest affects learning ability. Ozone and, to a lesser degree, nitrogen dioxide, are notorious for their ability to damage pulmonary tissue.

In some countries air pollution began to be recognized as an environmental problem in the 1950s and 1960s. At that time, the problem was thought to be limited to the urban areas of the industrialized countries, and it is

only in recent years that it has been recognized as a problem of regional and international importance.

Air quality problems are present in nearly all the major cities of Latin America, most notably Caracas, Mexico City, Lima, Rio de Janeiro, Santiago, and São Paulo. The Region's share in world air pollution problems is increasing: according to data published by the World Resources Institute, Latin America's contribution to total carbon dioxide (CO_2) emissions resulting from human activities was 1% in 1950, 3% in 1965, and an estimated 4.7% in 1983. This increase is due to population growth, especially in the urban areas, which brings with it higher energy consumption, more motor vehicles, and more industrial activity.

According to available data, 15.3 million persons in Latin America were living in cities of more than one million inhabitants in 1950. This figure increased to 101.3 million by 1980 and is expected to be 232.2 million by the year 2000. Moreover, in 1984 the gasoline used in the Region contained the highest levels of lead in the world: 0.64 to 0.84 g/l, compared with 0.15 to 0.40 g/l in Europe that same year.

Cases of Air Pollution

The metropolitan area of Mexico City has a serious air pollution problem. Annual average concentrations of sulfur dioxide (SO_2) particles in suspension in the atmosphere have increased considerably from 1974 to 1984 due to urban growth, industrial activity, and increased motorized transport. The northeast and southeast areas are the most affected by suspended particulates: the annual average concentration in the northeast area rose from 65 $\mu g/m^3$ in 1974 to 400 $\mu g/m^3$ in 1984; in the southeast area, the increase was from 65 $\mu g/m^3$ to 340 $\mu g/m^3$. The area most affected by SO_2 is the center of the city, followed by the northwest and northeast areas, where most of the factories are located. Annual average concentration in the central area rose from 60 $\mu g/m^3$ in 1974 to 120 $\mu g/m^3$ in 1984.

Table 112 shows the percentage distribution of values of the metropolitan air quality index in the five areas of Mexico City from 26 November 1988 to 16 January 1989, based on data reported by the Air Quality Monitoring Network of Mexico City. It is important to point out that these values reflect Mexican air quality standards, which are not as strict as those used in some other countries of the world. Under the standards proposed by WHO, more than 50% of the values would have been in the 201 to 300 range, or even higher (301 to 500).

The most frequently reported pollutant during the sampling period was ozone, which surpassed the standard of 0.11 ppm in close to 90% of the samples taken in 1986 and 1988, and in more than 70% in 1987. Between 1986 and 1988, the level of ozone in the atmosphere over the Valley of Mexico rose from 0.05 to 0.17 ppm, with a constant mean of 0.16 ppm. This pollutant surpassed international tolerance standards an average of 5 to 6 hours per month in the initial reports and 35 in the most recent ones. This situation is believed to be the result of the type of gasoline that has been in use for some years.

TABLE 112

Percentage distribution of values of the metropolitan air quality index in five areas of Mexico City, 26 November 1988 to 16 January 1989.

Area	0–50 (%)	51–100 (%)	101–200 (%)	201–300 (%)
Northwest	5.88	31.37	60.78	1.96
Northeast	3.92	62.75	33.33	0.00
Center	3.92	70.59	25.49	0.00
Southwest	1.96	5.88	76.47	15.99
Southeast	0.00	72.55	27.45	0.00

In Brazil, the metropolitan area of São Paulo suffers from serious air pollution problems, although control programs have succeeded in reducing some of the pollution indexes, such as that of SO_2. The data on suspended particulates show that average annual and 24-hour values exceed the quality standards at all monitoring stations. This type of pollution stems mainly from diesel vehicles and the dust raised along traffic corridors, as well as from fixed sources. Reduced emissions resulted in a clear downward trend in SO_2 levels from 1973 to 1986.

Carbon monoxide values exceed air quality standards for eight hours per month at almost all monitoring stations. However, the maximum values have been declining in recent years, especially as a result of the program encouraging the use of alcohol as fuel in vehicles. This program has also reduced the lead content of the air from 1 $\mu g/m^3$ in 1978 to 0.3 $\mu g/m^3$ in 1983. Nevertheless, the use of alcohol creates a new concern, namely, the addition of aldehydes to the air. Concentrations of ozone, its hydrocarbon precursors, and nitrogen oxides continue to be extremely high, especially in the case of hydrocarbons.

Pesticide Use

In Latin America and the Caribbean the most urgent problems in this area are related to acute poisonings of workers and others who are exposed to these substances. Publications on the chronic effects of the accumulation of organochlorine insecticides in maternal milk and adipose tissue, the neurotoxic effects of certain organo-

phosphate insecticides, and the pulmonary effects of some dipyridilium herbicides can be found in the countries. Nevertheless, in view of the inadequate data available, PAHO has been cooperating during the past three years in conducting situation studies in several of the Region's countries and has gathered reports directly.

Analysis of the data available from Brazil, Colombia, Costa Rica, Guatemala, Nicaragua, Trinidad and Tobago, and Venezuela with regard to substances used, poisonings in the exposed population, and biological monitoring indicate that most poisonings occur in workers 15 to 29 years of age and are associated with exposure to organophosphate insecticides and carbamates. Most of the deaths are due to nonwork exposure, often suicidal, and are linked to organophosphate insecticides and dipyridilium herbicides. Some countries have information available on food contamination by pesticide residues.

It is difficult to obtain current and reliable information on the magnitude and severity of problems caused by pesticides. Studies conducted by universities and the health and agriculture authorities, many of them supported by PAHO, have provided data to guide the governments in initiating priority prevention and control measures. Since these chemicals affect the enzyme systems of persons exposed, pesticides can cause acute poisoning and death, chronic conditions affecting the skin or lungs, neurological sequelae, and even teratogenic and mutagenic effects. Moreover, arsenical pesticides are known to be carcinogenic to humans.

Since substances classified as extremely toxic or highly toxic by WHO in 1984 are in use in the countries of Latin America and the Caribbean and are applied with little supervision, the Region's most urgent problems are related to acute poisonings, and most of the information presented here is related to effects of this kind. Nevertheless, much concern exists over the chronic effects associated with the persistence (in adipose tissue or maternal milk) of organochlorine insecticides, which are still used in several countries, and there is also concern over the appearance of neurotoxicity among Central American workers exposed to certain recently synthesized organophosphate insecticides.

Food contamination by residues of organochlorine insecticides and certain herbicides also is a source of concern. The fact that farmers get no guidance from agricultural authorities or from those who sell agricultural chemicals contributes to the unsafe use of these substances. An additional problem posed by the use of pesticides in Latin America and the Caribbean is that health personnel have little training in diagnosing and treating poisonings, which often occur in places far away from health services.

In 1985, the United Nations Environment Program (UNEP) estimated that approximately 30,000 (2%) of the two million tons of pesticides used in the world were used in Latin America. Most of these are herbicides, organophosphate insecticides, chlorines and pyrethroids, and fungicides, especially parathion methyl, paraquat, aldicarb, carbofuran, and phenoxyacetic derivatives. The amount of pesticides used varied according to a given region's crop, price of the product, and climatic features. Price increases have tended to reduce the amount of pesticides used in the countries.

In Costa Rica, the statistical summary of work-related injuries for 1982–1985 includes information on the total number of pesticide poisoning cases up to 1985. During those four years, 3,948 cases were recorded, of which 1,239 (31.4%) were due to herbicides, 523 (13.2%) to organophosphate insecticides, and 394 (10%) to organochlorines. It is striking that during this period there were no carbamate poisonings, since 1,603 cases (40.6%) are classified under "other unspecified." An analysis of the annual variation shows an increase in poisonings from 461 in 1982 to 1,185 in 1985, an increase that occurred as poisonings by herbicides, organophosphate insecticides, and compounds included under the heading "other unspecified" (Table 113) rose.

In Guatemala, a study was conducted from June to August 1988 in two localities devoted to raising garden produce for domestic consumption in the departments of Zacapa and Quetzaltenango. The study identified 12,950 persons with various degrees of exposure to pesticides at work or at home, and 115 poisonings were found in the hospitals of the two localities. There were 371 cholinesterase examinations conducted in accordance with the Mitchel technique for total blood, and decreases in activity were found in only 11 (2.96%).

TABLE 113

Occupational pesticide poisonings, Costa Rica, 1982–1985.

Substance	1982	1983	1984	1985	Total
Organochlorine insecticides	119	153	46	76	394
Organophosphate insecticides	95	80	130	218	523
Carbamates	—	—	—	—	—
Mixed insecticides	—	4	12	—	16
Other insecticides	—	11	25	12	48
Herbicides	171	403	342	323	1,239
Fungicides	12	12	37	52	113
Rodenticides	1	—	1	—	2
Fumigants	1	4	4	1	10
Other unspecified	62	514	524	503	1,603
Total	461	1,181	1,121	1,185	3,948

The number of poisoned workers seen at the Guatemalan Social Security Institute (IGSS) indicates that from 1977 to 1980 an annual average of 1,229 cases were reported, with a maximum of 1,339 in 1979, which declined to 620 in 1986 (Table 114). These figures include poisoning cases treated at IGSS hospitals and clinics throughout the country. The decrease in number of poisonings is associated with a reduction in the amount of pesticides used between 1975 and 1982, largely due to a decrease in the cotton farming area, where many of the pesticides are used.

In Mexico, agricultural authorities estimate the annual consumption of pesticides according to data supplied by pesticide producers; consumption for 1988 was estimated at 53,514 tons (Table 115), although this figure may increase or decrease by as much as 15%, according to different factors.

In Nicaragua, pesticides are used intensively to cultivate cotton, coffee, and garden produce. Over the last five years, the Ministry of Health, with the support of international experts, has established programs to train and to conduct epidemiological surveillance of exposed workers. It can be said that pesticide poisonings are the biggest safety problem in rural areas and that underregistration is significant. Most poisonings are work related and vary from health area to health area. They occur mostly in the winter and in the age group 15 to 35 years old; 15.7% of work-related poisonings involve minors. The products most used are carbamates and organophosphorous compounds. Gramoxone (paraquat) is the product most often used in suicides.

In the Caribbean, given the countries' extensive agricultural activity, the use of pesticides also has led to involuntary poisonings and suicide attempts. In 1984, the poisonings treated at Trinidad and Tobago's three main hospitals were reviewed. The review confirmed that of the 762 poisoning cases, 245 (32.2%) were caused by pesticides and that paraquat was the most frequent substance involved. There were 120 deaths among the 245 cases, 93 of which were from paraquat; 90% of all deaths were attributed to suicide.

In 1987, at the request of the national health authorities and the State of Mérida, the Organization participated in an epidemiological study on agricultural pesticide poisonings in Venezuela, and national data on the magnitude of the problem were obtained.

TABLE 114

Cases of pesticide poisoning, Guatemala, Guatemalan Social Security Institute, 1972–1986.

Year	Cases
1972	2,313
1973	1,621
1974	946
1975	1,042
1976	1,144
1977	1,129
1978	1,292
1979	1,339
1980	1,160
1981	787
1982	613
1983	768
1984	636
1985	796
1986	620

TABLE 115

Estimate of pesticides used in Mexico (tons), 1988.

Type of pesticide	Manufactured nationally	Imported	Total
Insecticides and tickicides	10,466	1,412	11,878
Herbicides	25,585	1,251	26,836
Fungicides	12,231	1,434	13,665
Fumigants and nematocides	226	710	936
Rodenticides	27	164	191
Molluscicides	—	8	8
Total	48,535	4,979	53,514

Source: General Directorate of Health and Agricultural and Forestry Protection, National Qualifying Committee for Inputs, Mexico, 1988, and Secretariat of Agriculture and Water Resources.

Management and Handling of Hazardous Toxic Wastes

Many industrial establishments and other facilities, such as power plants, petroleum refineries, and hospitals, produce toxic wastes, including sludge, oily residues, disposable chemical solutions that contain many hazardous substances, and a wide range of disposable materials. For example, radioactive waste from nuclear facilities, research institutions, and hospitals constitutes a special category, as was demonstrated in Goiânia, Brazil, in 1987, when a teletherapy machine was found to be the source of a release of cesium-137. Although it is estimated that between 1% and 4% of all industrial wastes are toxic, in the Americas few facilities recycle or safely eliminate hazardous wastes. The current practice of disposing of these wastes along with the safe wastes cannot be tolerated much longer, and the necessary measures to deal with this situation must be taken at both the national and international levels.

Chemical substances in toxic wastes can harm health. For example, the chemical substances most frequently found at the disposal sites are lead, trichloroethylene (trichloroethene), chloroform, toluene, benzene, polychlorinated biphenyls, phenol, arsenic, cadmium, and chromium, all of which harm health after prolonged low-level exposure. Seven of these ten substances can cause cancer, seven may cause birth defects, and five may cause genetic damage. The International Program on Chemical Safety has compiled available information and has assessed the effects on health of the above-mentioned 10 substances, along with another 60 substances and chemical compounds.

An important aspect of the problem is the international transport of hazardous wastes from developed to developing countries, mainly under marketing systems handled by private enterprises. There have been attempts and proposals to unload hazardous wastes in some countries, such as Costa Rica, Chile, Guyana, Haiti (where a partial unloading occurred), and Panama. In 1989, under the sponsorship of the UNEP, an international agreement was reached that safeguards against the international transport of these substances.

Accidents Caused by Chemical Agents

The Region's scientific and technical progress during this century's last four decades has brought with it the production, handling, storage, use, and transport of a broad range of chemical products, most of which harm the environment and humankind. This situation is not restricted to the developed countries, but also exists in the developing nations as a result of investments made there by third countries.

Chemical accidents in Mexico (1983 and 1984), Canada (1988), and Brazil (1988) have led the Region's governments to confront these potential dangers and to try and establish effective planning and precautionary mechanisms for such accidents.

Food Contamination

Chemical and biological food contamination continues to be a serious problem in the Americas, and the deterioration of the situation has coincided with the unfavorable economic situation affecting most of the countries in the Region. Although several governments have initiated actions aimed at improving their food protection activities—in particular those related to evaluation of the situation, review of existing legislation, and improved control of food produced industrially on a large scale—the limited resources assigned to protection programs have not allowed the deterioration to be halted. It should be emphasized, however, that there is an awareness, and an almost unanimous conviction, that the establishment of national food protection programs is indispensable.

In rural areas, control of the hygienic conditions of the food being distributed is very difficult, and in many urban areas of the Region, there is also a lack of sanitary monitoring, often making it impossible to advance beyond the control of "gross filth." In addition, shortages of refrigeration facilities, adequate roads and other means of transport, and treatment plants contribute to a high percentage of food spoilage, thus aggravating the problems of scarcity and malnutrition.

For these reasons, the degree of biological contamination of food in most of the countries is alarming, as borne out by surveys conducted by national specialists. Almost all the causative bacteria of food-borne diseases are found with great frequency in both raw and processed foods. The microbial burdens are high, and intestinal parasitic helminths and protozoa, or their infective forms, are also present in the food. Although extensive research has not been done, there is reason to suspect that viral contamination is also frequent in the food from the Region's countries. It may be considered that the foods act as virtual sentinels of the contamination found in the environment, water, and animals.

Because of climatic conditions and poor management of harvests, a high proportion of food from the countries of the Region is contaminated with fungi, especially in moist, hot areas. Some fungi destroy the commercial value of the food, while others produce dangerous mycotoxins. Many harvests are lost as a result of this cause

and numerous food lots are rejected by importing countries because they are contaminated with fungi or mycotoxins. Contamination with fungi and their toxins is one of the main problems faced by producers of grains and oleaginous products in the countries of the Americas.

Climatic and ecological changes are, in turn, generating chemical and biological changes in the oceans, which bring with them increased contamination of seafood, especially mollusks, with microbial biotoxins. These changes are reflected in the increased frequency of "red tides" and similar phenomena, which result in, among other things, the contamination of mollusks with highly dangerous toxins. In addition, ciguatoxin-producing agents in Caribbean waters may be on the increase.

Chemical contamination of food is also a problem. The massive use of agricultural chemicals, coupled with poor agricultural practices, in some cases produces high levels of chemical waste. The same is true of the increased use or manufacture of other chemical substances. Natural disasters and natural or artificial ecological changes can cause an increase in the risks of chemical contamination.

With regard to food contaminated with radionuclides, the situation is quite different. Several countries of the Region have rejected cheese, meat, powdered milk, and potatoes coming from Europe because these products contained radionuclide levels in excess of the countries' allowable limits. It is still possible, however, that a few lots of food from areas affected by the Chernobyl accident (April 1986) in the U.S.S.R. have slipped past the controls imposed by customs and public health authorities in the countries of the Americas. For example, in June 1987 the U.S. Department of Agriculture's Food Safety and Inspection Service discovered a sample of meat extract from Brazil containing levels of cesium-134 and cesium-137 equivalent to 649 Bq/kg, which exceeded the permissible limit (370 Bq/kg) for radionuclides in Brazil. The cesium-137/134 ratio was 2.87, pointing strongly to the possibility that the meat from which the product was made had come from animals contaminated in the Chernobyl accident, since the Brazilian packing plant that produced the extract indicated that the meat could have been imported from Poland, Ireland, or Denmark. The Department of Agriculture has continued its investigations,[61] and samples from new lots of the extract have still shown high levels of contamination. The radiological accident that occurred in Goiânia, Brazil, in 1985, did not lead to any major problems with regard to the food supply.[62]

Biological or physicochemical contamination of food has caused heavy economic losses for the countries of the Region during the period. A preliminary study done by PAHO in Colombia[63] found that the quantity of food lost each year from spoilage after it had entered the commercial market was worth $US600 million. This calculation was based solely on the figures published by government agencies, and the study concluded that the actual amount was much greater. Conservative estimates, done later, indicate that monetary losses from food that spoiled after entering the commercial market in Latin America and the Caribbean are as high as $US40.0 billion per year. Another negative economic impact of food contamination in the countries of the Region is the rejection of exported food products by other countries. Not including red meat and poultry, 5,417 shipments of food products from Latin America and the Caribbean were impounded or rejected by the United States in 1988.

Health of Workers

In order to understand the extent of workers' health problems, it is necessary to review information about those diseases that have been linked to work by epidemiological studies. Moreover, it is necessary to consider those who work in small businesses or in the informal sector of the economy, the unemployed, and the underemployed, who receive no health care. It is important to analyze what is happening in the Region in this regard.

In Mexico, 87% of businesses employ fewer than 15 workers. Brazil has one million businesses in which only the proprietor and sometimes his or her family members work, and in which workers sometimes rely on third-party service contracts; the country also has 610,000 businesses with fewer than ten employees, and only 190,000 businesses have ten or more employees. In Colombia, at least five of every nine workers in the large cities work in small businesses with fewer than ten employees. In some countries, such as Peru and the Dominican Republic, more than 60% of the working population works in the informal sector of the economy. In general, small-business employees lack easy access to health benefits, and, like the unemployed and the informal sector workers, they are not covered by the health services.

Currently, some countries are devoting special attention to the economy's informal sector and to the working population without coverage. For example, of the economically active population in Colombia, which repre-

[61] R.E. Engel, V.W. Randecker, and W.J. Franks, "Lessons Learned from Chernobyl: Public Health Aspects," (Paper presented at the 91st Annual Conference of the Association of Food and Drug Officials, Tulsa, Oklahoma, 21 June 1987).

[62] International Atomic Energy Agency, *The Radiological Accident in Goiânia* (Vienna, 1988).

[63] N. Troiano, "Pérdidas económicas por descomposición de alimentos ingresados al circuito de comercialización en Colombia," PAHO consultant report (Bogotá, 1987).

sents 34% of the country's total population, 67% is concentrated in urban centers, with only 33% living in rural areas; nationwide, it is estimated that 3,500,000 minors are working. The groups of workers that have been identified as requiring urgent occupational health care are small-business employees; agricultural, mining, and construction workers; and those working in handicrafts and in family-based enterprises. These groups include large and vulnerable population groups such as minors, youth, women, and the elderly, who generally earn less than the minimum wage and come from the lower social strata. In 1985 the working population older than 12 years of age amounted to 9,147,391, of which 6,149,790 were men and 2,997,601 were women. A high percentage of the urban labor force (54%) works in the economy's informal sector. The rural labor force (33.17%) mainly works in agriculture and does not have access to a satisfactory health system. Some groups, such as those who work in modernized coffee production (60% of the total 379,400 coffee production workers), have somewhat better coverage, although their preventive care is inefficient or virtually nonexistent.

In most of the Region's countries, social security coverage is scant and uneven. The working population without coverage varies from 4% to 98%. Only in 6 of 20 Latin American countries are more than 50% of the workers covered.

Regarding occupational risks, the Colombian Agricultural Institute in Colombia reported that pesticide sales in 1986 amounted to more than 17 tons of solid products and 22,500 liters of liquid formulations, which suggests the magnitude of the poisoning risk in the rural environment, where insecticides, fungicides, herbicides, and other pesticides are often unsafely used.

In Costa Rica, the Costa Rican Social Security Fund reported between 400 and 500 pesticide poisonings per year in 1980–1986, with a mortality rate of approximately 9%. However, the number of poisonings is far greater, given the many emergency room consultations from this cause and the number of work-related poisonings reported to the National Insurance Institute. According to a review conducted in four hospitals, only 8% of the patients treated for pesticide poisoning were hospitalized. An analysis of adipose tissue and maternal milk showed high levels of organochlorine residues. Noteworthy among cases of chronic effects reviewed and indemnified by the National Insurance Institute is the case of banana workers who were left sterile after exposure to dibromochlorophenol.

In Guatemala, during the 1986–1987 biennium, 2,534 pesticide poisonings (1,081 in 1986 and 1,453 in 1987) were seen at the Ministry of Public Health's service network and at the Guatemalan Social Security Institute, with a 3.23% mortality rate (82 cases). Most cases were in men, and most occurred from May to October, which coincides with the rainy season planting time. These figures do not include cases for which medical care was not sought or those cases treated at private institutions.

In Bolivia, the National Institute for Occupational Health estimates that 509,600 workers are exposed to occupational risks, and that the rate of reported silicosis, about 7%, represents a significant underregistration. The Institute identified lead and mercury poisonings, and, in a study on pesticide poisoning, found an index of reduced cholinesterase in 47% to 62% of the exposed population.

In virtually all the countries of the Americas, accidents are the leading cause of death in the age groups 15 to 24 and 25 to 44 years old, and death rates from accidents are much higher for men than for women. This cause of death includes work-related accidents; domestic accidents, many of which stem from household work; and accidents caused by motor vehicles, many of which occur when people go to and from the work place, go on work-related travel, or transport merchandise.

In Guatemala, work-related accidents seen at the Guatemalan Social Security Institute are underregistered. In 1985, among 631,654 affiliates, 81,495 (12.9%) work-related accidents and 45,795 (7.3%) other accidents were registered. In 1987, among 678,995 affiliates, the figures were 90,559 (13.3%) and 54,001 (8.0%), respectively. Given this, efforts are being made to improve the statistics in order to better understand the extent of the problem. Other countries continue to improve the compilation of data on work-related accidents and occupational diseases. In Brazil, for example, a system for the compulsory reporting of occupational diseases has been instituted.

PART III

HEALTH SYSTEMS INFRASTRUCTURE

This part of the present volume deals with that set of resources which, systematically organized, results from a cumulative social process—cognitive, physical, and instrumental—the purpose of which is to serve health promotion, maintenance, and recovery. The term *infrastructure* is defined as "the underlying foundation or basic framework [as of a system or organization]," a definition that reflects the concept of resources organized in a systemic context.

Traditionally, the health services production complex has been regarded from the perspective of old-line administration, i.e., as a material process with a physical component at its center (hospital, physician's office, health center, etc.), which behaves as the "factory" element. From this perspective, the organization is seen as a production line: at one end are the inputs (human, physical, and financial resources, knowledge, etc.); the "factory" sorts them out and combines them in such a way as to transform them into an object for use or consumption (service); and the potential beneficiaries are prompted to turn to it either because they need to or because they are attracted by various types of incentives.

The emphasis on medicalization and specialization has fostered the development of this type of organization and has helped to give primacy to disease over health, and to a center-based structure over the dynamic and changing needs of a demanding society.

A new dimension in the organizational field—one that favors the development of programs and gives priority to systemic articulation of the input-output complex—makes it necessary to find intervention strategies that will ensure greater effectiveness, efficiency, and equity.

Thus, the center of the organization has shifted from structure to infrastructure. The axis of knowledge development, displaced to both ends of the line, makes it possible to see more clearly the need to deepen and expand the scope of research to include social man, his habitat, and his interrelationships, on the one hand, and inputs (knowledge, tools, skills, resources) in their qualitative and quantitative sense, on the other.

The object is the health of social man, taken as a whole. As a result, the "factory" (structure) loses its exclusive role as the producer of services and becomes, instead, part of a systemic complex in which each component has a role of its own, but one that can be performed only in balance with the rest.

Within this conceptual framework, the key elements in the formation of the health services system, in the infrastructural sense, are the development of knowledge and skills for the establishment of policies, strategies, plans, and programs; the field of training, utilization, and management of human resources; the application of epidemiological methods to the analysis and forecasting of health conditions; the physical and organizational development of health services; and the generation and dissemination of information.

The situation posed by the Region's need to adjust to the economic crisis, together with its repercussions for the health sector, should be considered in the broader framework of its relationship to the challenges posed by development.

At the same time, the countries' need to rethink their development strategies, linked to the survival and the strengthening of democratic systems at the highest political levels, is jeopardized by the persistence of inequities in the adjustment effort, of delays in tackling the accumulated social debt, and of lagging development due to continuing negative health indicators in the general population, and particularly among the economically active population and mothers and children.

The health sector—limited in its capacity to finance through public spending, poorly represented at the time when social policies are being defined as part of planning for new development schemes, and dependent on a State with doubtful ability to serve as an administrator and direct supplier of services—faces ever-increasing difficulties in proposing solutions, providing leadership, and ensuring that the entire population has access to the health services system.

On the other hand, it does not appear likely that the challenge of universal coverage can be met in the short term using the classical mechanisms of services extension—nor, from the technical standpoint, does this appear to be the best road to take, judging from the results of recent experiences.

In light of the situation described above, many of the countries of the Region are undertaking a transformation of their health services system based on the primary care

strategy and using the tools of decentralization and the strengthening of local health systems. In this transformation process, the systemic dimension of infrastructure takes on an important role. Only through a comprehensive understanding of the sector's needs and its ability to respond to the growing demands being placed on the services system will it be possible to maximize the impact of the actions being undertaken.

POLICIES AND STRATEGIES

Institutional Organization of the Health Sector

During the past three decades parallel plans for providing services (ministries of health, social security) have been developed in the public sector in Latin America and the Caribbean, and their inadequate functional and operational coordination has aggravated the inequity of the population's access to services. As a result, preventive services have been separated from curative services, ambulatory care from institutional care, and health services from other essential community services. There is no coordination between the mechanisms relating to the various patterns of quality and regulatory systems, there is unnecessary duplication of facilities, and at times expensive resources are underutilized.

In the beginning, the establishment of this institutional duality was characterized by two basic trends: greater governmental involvement in organizing, administering, and directly financing the services, and establishment of mandatory social security as a result of direct action by labor unions and political negotiations between governments and the working class. In this way the two major health care plans that would characterize the future organization and delivery of personal health services in the public sector were individualized in most of the countries of Latin America and the Caribbean. In addition, other determining events occurred that would later significantly influence the services' dynamics.

In the first place, the existing dissociation between preventive and curative activities was consolidated despite the fact that both the hospitals and the health centers already came under the ministries. In the second place, the policy of differentiating "separate clienteles" was instituted for public sector agencies; this policy was helped by placing social security within the administrative sphere of the ministries of labor and by the notion of "charity services," which characterized and continues to characterize the services provided by the ministries of health. In the third place, a distinct subdivision was created between public health specialists, who were located in the ministries, and other medical groups, who remained in hospitals or were incorporated into social security institutions or medical schools. The different interests and orientations of these various medical groups would later have major repercussions on the forms of service organization and delivery.

Since the end of the 1970s the governments' efforts have aimed at structuring national health systems by guiding the disjointed operation of these various plans, adopting integration or coordination measures to remedy unnecessary duplication in facilities and services, and correcting the anarchic and inefficient use of resources.

As a result of these advances, in some of the countries these systems can now be seen within a sectoral framework that takes account of needs for coordination with other institutions that are not directly related to services delivery but whose activities are aimed at promoting health. Recent legal measures recognize the multisectorality of the factors that govern health; consequently, they provide guidelines that tend to locate health activities within the sphere of national planning and that seek to interrelate services with other sectors.

Over the last ten years, some of the countries, either tacitly or explicitly, have moved toward the creation of the sector ministry and sector health councils. Within this orientation, the authority and competence of the ministries of health have been reaffirmed as the agencies that direct the system and, as a consequence, health policy and activities; however, at the same time there has been a trend toward better identification of three major areas of institutional activity: provision of health services, protection and development of community public health, and the strengthening of so-called social or social welfare services. These three areas constitute national health care systems. Seemingly, the requirements for appropriate conduct of these complementary health activities are contributing to a better definition of responsibilities and areas of institutional competence.

As for social security, significant changes and events also have taken place. The first such change is an internal movement toward coordination and even integration into a single institution; this change began some years ago and has continued to show important manifestations to date. Early examples of such processes are the creation of the National Institute of Social Welfare in Argentina, the Bolivian Social Security Institute in Bolivia, and the Directorate General of Social Security in the Ministry of Labor and Social Security in Uruguay; the incorporation into the Mexican Social Security Institute of several medical services of decentralized enterprises in Mexico; and especially the fusion first of many funds into seven large funds and then the consolidation of these plans (1977) to form the National Social Welfare Institute of Medical Care in Brazil.

The National Health Insurance Law in Argentina, the reference to health in the new constitution in Brazil, the processes whereby services are functionally integrated in Honduras and Peru, the National Health System Law in Venezuela, and legislation in other countries are other recent examples of this trend. In 11 of the 16 countries in which social security administers health services, there is, practically speaking, a single main social security agency providing such services, whether directly or indirectly.

The second important change involves the social security concept itself. In recent decades, the emergence of a new social security doctrine has been noted in several countries of Latin America and the Caribbean. As a result, the original, limited idea of mandatory social insurance is gradually evolving into a broader concept of comprehensive social security programs or systems that are national in scope. This trend toward horizontal extension, at least in the health field (protection of new population groups), has been clearly and progressively affirmed in a number of the Region's countries.

The third significant fact, which relates to the foregoing, is the greater participation of social security health care programs in the overall provision of services. In 6 of the 16 countries (Argentina, Brazil, Costa Rica, Mexico, Panama, and Uruguay), the different social security plans have, on the average, responsibility for the health care of nearly 70% of their populations. This extensive participation is probably related to the countries' degree of development, expressed as a function of their gross domestic product; however, it is also an outgrowth of the State's ability to participate in the financing of the corresponding plans (principally in Brazil and Costa Rica, but also in Mexico, which serves as administrator of federal funds for a special program).

Another aspect that should be noted is the participation and influence of the private sector in the makeup of health systems, either directly or indirectly through its relationships with social security agencies. In recent years in several countries, but especially in Argentina, Brazil, Colombia, Peru, and Venezuela, by means of prepayment or private insurance programs, various plans have arisen to organize health care activities that are significant components of the health services systems in those countries.

Although the individuality of these national processes is recognized, in order to establish an analytic framework it is necessary to attempt some grouping by using the predominant function of public sector agencies as a criterion. Still, in all the countries there is a fundamental component of services in the nongovernmental sector, especially in the private sector. On this basis, the countries can be categorized into three groups:

- Countries in which responsibility for providing services belongs exclusively or fundamentally to the ministries of health. (This group consists of Cuba and Nicaragua, which have unified and integrated systems, and Chile, where social security contributes to financing the system but does not provide services; a broader viewpoint would also include Haiti and the English-speaking Caribbean countries.)
- Countries where social security is responsible for the health care of most of the population. (Seven countries are included in this group: Argentina, Brazil, Costa Rica, Mexico, Panama, Uruguay, and Venezuela, whose financing schemes, based on individual contributions or mutual benefit quotas, are fairly similar to social security.)
- Countries in which responsibilities for caring for the population are greater for the ministries of health or are shared in varying proportion with social security, which covers less than half the population. (This group includes nine countries: Bolivia, Colombia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Paraguay, and Peru.)

The 16 countries composing the last two groups are those in which social security has a defined involvement in providing health services, either in its own facilities or through contracts with private sector agencies. In several of the countries, most of the contracting is undertaken with the private sector (Argentina, Brazil, Peru, and Venezuela), and at times the volume of services offered is fairly great. This trend will increase absolutely or relatively as the public sector shrinks because of economic and financial crises within the countries or as credit agencies impose adjustment policies in external debt negotiations.

In this overall framework the countries' economic and social reality demands new approaches to defining institutional functions and assigning responsibilities with respect to the population. The operational growth of the private sector requires better coordination with public agencies. In addition, there must be coherence among institutional programs within health service systems. Despite the fact that these aspects have been examined only intuitively and episodically, the following trends have been noted:

- Gradual extension of social security coverage to the entire population as a way to prevent the creation of "separate clienteles" for ministry of health and social security programs, and to achieve universal health care coverage and establish a national policy of genuinely integrated health care based on the strategy of primary health care and the principles of the goal of health for all by the year 2000.
- Improved efficiency in the use of resources through the formulation and adoption of joint investment plans;

information, programming, and budgetary processes; selection, incorporation, and use of medical technology; organization of supplies, maintenance, and other support components; and promotion of functional integration between the ministries of health and social security by establishing common systems of organizing and administering services at the local level.

- Rational use of health sector financing through coordination of resources provided by social security contributions and public sector budgets.
- Study of options that make it possible to increase ways of financing, in view of the sector's growing costs.
- Joint efforts to strengthen the health infrastructure through development of a firm policy of decentralization that permits the use of financing at the local level and participation by the public, private, and teaching sectors in order to achieve functional integration of the services network and compatibility of its prospects according to each country's characteristics.

Health Legislation

Advances in health legislation in the Americas during the past five years have been vast and varied. This has been evident in both the sphere of constitutional law and in other legislation (laws, decrees, regulations, etc.). Changes in legislation have been multisectoral, covering many areas related to health. Such legislation has also shown the reaffirmation of an ideal expressed both in constitutions and in international legal instruments before 1985—recognition of the right to health. As a counterpart, recognition has been given to the position of the individual and the community with respect to health and the importance of their participation as active agents responsible for its protection and promotion.

Four constitutions promulgated during the last five years recognize the right to health: those of Brazil, Guatemala, Haiti, and Nicaragua. The most recent of them, the 1988 constitution of the Federated Republic of Brazil, provides that health is a right of all and a duty of the State guaranteed through social and economic policies directed at reducing the risk of illness and enabling equal and universal access to activities and services promoting health. The constitution gives health activities a public character and assigns to government the power of their regulation, auditing, and control.

The constitutional framework goes beyond simply recognizing health as a right. Thus, the constitution of Brazil stipulates that matters of health care and public welfare are the "common domain" of the Union, states, Federal District, and municipalities. It also establishes that public health services form a regionalized network and hierarchy and constitute a unified system organized on the basis of the principles of comprehensive decentralization and community participation.

With respect to the Unified Health System, the constitution stipulates that among other functions it is responsible for the control and auditing of health procedures, products, and health-related substances; participation in the production of drugs, equipment, immunobiologicals, blood derivatives, and other supplies; participation in drawing up and executing basic sanitation policies; supervision and inspection of food (including control of its nutritive value and of beverages and water for human consumption); and collaboration in protecting the environment. Finally, the constitution provides that the law will govern conditions and requirements that facilitate removal of organs, tissues, and organic fluids for transplantation, research, and treatment, as well as the procurement of blood for transfusions and preparation of blood derivatives.

The 1987 constitution of the Republic of Haiti recognizes that the State has the duty to guarantee the right to life and health and respect for the individual without distinction and in agreement with the Universal Declaration of Human Rights. Among others, it recognizes the right to nourishment and social security, and stipulates that it is the obligation of the State to ensure all citizens the necessary means to guarantee them health protection through creation of hospitals, health centers, and dispensaries.

The 1987 constitution of Nicaragua recognizes the right to health for all Nicaraguans. It establishes that it is the State's duty to provide basic conditions for its promotion, protection, recovery, and rehabilitation; to direct and organize health programs, services, and activities; and to promote popular participation in the defense of health. Citizens, in turn, have "the obligation to respect the sanitary measures that are determined."

From another perspective, the constitution guarantees that Nicaraguans have the right to live in a healthy environment, and that it is the State's duty to protect, conserve, and restore the environment and natural resources. It also stipulates that the State will endeavor to formulate programs benefiting the handicapped as to their physical, psychosocial, and occupational rehabilitation and their occupational placement, and it confers special protection on human reproduction. It gives women the right to special protection during pregnancy and to paid leave and adequate social security services. No one can deny employment to women because of pregnancy or dismiss them during that or the postnatal period.

The 1985 constitution of the Republic of Guatemala recognizes that enjoyment of health is a human right, without any discrimination whatsoever. It establishes that the State will guard the health and social welfare of all inhabitants through activities to promote health, recov-

ery, and rehabilitation and to ensure the most complete physical, mental, and social well-being of the people. It also recognizes that the health of the individual is a public good and that all persons and institutions are bound to guard its conservation and recovery. It stipulates that the State is responsible for social and nutritional welfare, protection of the environment, and control of the quality of food, pharmaceutical, chemical, and all other products related to health and human well-being. It further provides that the law will regulate protection of working women's maternity and that no work may be required of them demanding effort that might endanger their pregnancy.

As stated above, recognition of the right to health by national and international legislation is not confined to this half-decade, but has followed a gradual evolution centered chiefly on the concept of health. Thus, the original idea, which limited health to preventing illnesses, contagion, and the propagation of communicable diseases, has become a concept of health which goes beyond the simple sanitary aspect to enter into the sphere of broader considerations which make health a legally protected asset and a basic element for safeguarding human dignity. In this respect, it is interesting to mention that in 1989 the Pan American Health Organization published a treatise that analyzes the evolution of recognition of the right to health in the constitutions of the Region's countries.[1]

It should be noted that health is addressed not only in the constitutions of the World Health Organization (1946) and the Pan American Health Organization (1947), but also in other international human rights instruments. Among them are the Universal Declaration on Human Rights (1948), the American Declaration of the Rights and Duties of Man (1948), and the International Covenant on Economic, Social, and Cultural Rights (1966).

At the national level, the constitutions of Bolivia (1967), Chile (1980), Cuba (1975), Dominican Republic (1966), Ecuador (1978), El Salvador (1983), Guyana (1980), Honduras (1982), Mexico (1917), Panama (1983), Paraguay (1967), Peru (1979), Uruguay (1967), and Venezuela (1961) refer explicitly to health. The basic health principles in these constitutions embrace a varied range of aspects, from assigning to the State the obligation to provide health services to guaranteeing that health is a social right and public good and recognizing the importance of the individual's participation in its protection and promotion. More specifically, one or more of the constitutions mentioned ensures protection of maternity; reduction of childhood mortality; environmental protection; elimination of alcoholism and other drug addictions; control of food, chemical, pharmaceutical, and biological products; and protection of workers, minors, and social security.

The remaining constitutions of the Region's countries do not refer explicitly to health, perhaps because of the historical time in which they were drafted or because of the legal tradition to which they belong. Nevertheless, some of them contain provisions on social security protection and public welfare provisions. Such is the case with the constitutions of Argentina (1853), Costa Rica (1949), and Colombia (1886). Others, such as most of the constitutions of the English-speaking Caribbean countries and that of Suriname, deal with the possibility of restricting certain rights and liberties for public health reasons. The same may be said of the constitution of Aruba[2] (1986) and that of the Netherlands Antilles (1955). The constitution of Aruba further stipulates that the Government shall take measures to promote the health of the population, and that of the Netherlands Antilles provides that control of public health and aspects related to the practice of medicine, surgery, obstetrics, and pharmacology are subject to federal regulation. The French Antilles and French Guiana are departments of France, and the French constitution of 1958 therefore applies to them. The constitution of Belize (1981) mentions health simply by declaring in its preamble that the people consider that a just system should be ensured to provide education and health without discrimination. The constitutions of Canada (1867) and the United States of America (1787) do not mention health. Nevertheless, the absence of specific mention of health as a right in those constitutions has not hindered the advance of legislation applicable to its protection and promotion.

Constitutional guarantees referring to health have been enacted through statutes. In some cases there is explicit recognition of that purpose. In Chile, for example, Law No. 18,469 of 1985 regulates the exercise of the constitutional right to health and creates a health services system, and in Mexico the General Health Law of 1984 regulates the right to health protection in the terms fixed by Article 4 of the constitution.

In other instances, reference to the constitution in ordinary legislation has not been direct. Nevertheless, such legislation has in one way or another reflected the constitutional ideal. This is true of measures to protect maternal and child health through the creation of institutions and programs aimed at caring for mothers and children, prevention of illness in the newborn, nutrition guaran-

[1] H. L. Fuenzalida Puelma and S. Scholle Connor, eds., *The Right to Health in the Americas: A Comparative Constitutional Study*, Scientific Publication No. 509 (Washington, D.C.: Pan American Health Organization, 1989).

[2] Some provisions of Aruba's 1986 constitution will take effect one to five years after its promulgation.

tees, free infant care, and establishment of day-care centers; to establish programs for combating alcoholism, smoking, and consumption of drugs and psychotropic substances, providing comprehensive care and rehabilitation to addicts of such substances, and preventing alcoholism, smoking, and drug addiction in elementary and high schools; to regulate renal dialysis centers and the transplant of organs, tissues, and human fluids; to provide environmental protection; to ensure occupational health; to control blood and blood products; and to establish measures to rehabilitate and train handicapped persons.

Health legislation has also dealt with subjects that reflect contemporary reality. This is evident from measures to prevent and control acquired immunodeficiency syndrome (AIDS), matters related to emergency preparedness and disaster relief situations, and efforts to promote women's well-being.

Finally, during the past five years the Organic Health Law of Peru and its complementary decrees (1985), the Organic National Health System Law of Venezuela (1987), the decree creating the Program for Developing Unified and Decentralized Health Systems in the States of Brazil (1987), and the Social Works and National Health Insurance laws in Argentina (1989), were promulgated. The main objective of these measures is to ensure the entire population's access to health care.

Nonetheless, health legislation has not managed to solve the complexity of health problems. The situation has been aggravated by the economic and social crisis affecting most of the Region's countries. In addition, because of contemporary reality and new situations created by advances in medical technology and research, health legislation needs to be extended beyond traditional areas and to deal with topics which at present have been studied little or not at all, or whose treatment is controversial. Such is the case, for example, with the problems of abortion, euthanasia, the definition of brain death, and various issues stemming from genetic engineering. Despite such limitations, a basis already exists on which to build and carry out pertinent policy through the principles contained in health legislation.

Priority Policies and Programs

Although the present economic crisis continues to expose the vulnerability of development models that have been drawn up by countries in recent decades, democratic trends noted since the middle of the 1980s are at the same time being strengthened through the rise to power of governments that are committed to redressing, at least in part, social inequalities which were aggravated by the crisis. Nevertheless, although conditions would appear to favor more progressive social policies, many obstacles remain which limit the possibilities for success of the governments and social groups interested in more equitable development.

The situation with respect to health policies in Latin America and the Caribbean seems likely to continue during the coming biennium. The direction of these trends will determine the role of health among national development objectives, as indicated by the priority and resources which societies and governments are ready to devote to realizing health objectives. Regardless of the priority assigned to these objectives, a struggle among different groups for available resources has been increasingly seen in the Region, not only between those who have and those who do not have access to health resources, but also between interest groups organized around the production and consumption of health goods and services. This conflict of interests is often a powerful factor governing health policies and in many instances distorts their objectives, limits their effectiveness, and reduces their equity. Consequently, investments in health are not always directly related to the priority problems of the population at large, especially those affecting the most vulnerable social groups. Overcoming this problem is urgent, given the limited short-term possibilities for significant increases in health-sector resources.

Many countries are making efforts to reorganize State institutions and to redefine their functions. In the health field, the trend is to extend the transfer of executive responsibilities and resources to subnational levels of government (departments, provinces, states, and municipalities). At the same time, the organization of central governments is being revised to integrate the ministries of health with social security and public welfare agencies. Recognition is also growing of the importance of the public sector as a provider of services or even as an indirect executor of health policies. In this context, the readaptation of central-level agencies gains relevance for carrying out new sector policy and operating functions, relating with private service providers, and coordinating with other sectors in support of health policies. Further, the trend of health systems toward decentralization challenges the executive abilities of local governments and imposes substantive changes on their relationships with the central government.

Research on health policies, through review of documents and interviews, was conducted in 1989 in 15 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guyana, Jamaica, Mexico, Nicaragua, Peru, Trinidad and Tobago, Uruguay, and Venezuela). The objectives of this research were to identify the most relevant policies in the countries' health sector during the 1980s; to describe the relationships among the many institutions involved in and affected by those policies, as well as the spheres and forms of their interaction; and,

finally, to determine how the subjects identified are dealt with in the fields of research and teaching in those countries. A summary of the findings from these investigations is presented below.

Argentina. The investigation noted as the most relevant aspect the markedly democratic nature of the framework in which the State now operates. In that context, the health policy seeks equity in access to quality services by guaranteeing broad participation of the population and the sectors involved. In addition, although financial restrictions condition the prioritization of expenditures in carrying out social policies and programs, there is much room for negotiation and reconciliation in an effort to meet the challenges.

The proposal for structurally reforming the health system was consolidated with the National Health Insurance Law, which mobilized most of the social entities and revealed the sector's sharpest conflicts. This proposal appears to be an important conceptual advance in that it declares that health is a basic right of all inhabitants in the country, provides for a basically preventive approach, and makes the State the agency responsible for fulfilling that right by acting as financier and economic guarantor of a unified and egalitarian system for all citizens. Furthermore, an attempt is being made to revitalize the State's institutions by strengthening the State's negotiating and executive capacity through an expansion of its convening authority and by bringing together institutions with common concerns.

The Secretariat of Health has encountered difficulties—both economic and political—in remedying the fragmentation of institutions in the health sector and in integrating the public, private, and social security subsectors. On the one hand, the support link with the provinces is weak, and the State is unable technically and economically to supervise the allotment of national funds assigned to support provincial programs. On the other, the provinces are autonomous within the federal structure, and thus national policies have only guideline value.

Bolivia. Up until 1982, the year in which a democratic government was inaugurated which undertook fundamental changes in the area of health, official policies in this sector were characterized by a biological, traditional, and curative approach. Since then the health policy has been guided by the principle of universalization and the people's right to health.

The bases of the Government's health policy were approved in 1983, indicating that the following activities should be carried out immediately: installation of popular national, regional, and district councils; ratification of the strategic role of the Ministry of Social Welfare and Public Health in putting the health system into practice; allocation of an increase in the health budget; rationalization, integration, and increase of international cooperation; conduct of a university research program; development of a planning system; promotion of intersectoral participation in financing; organization and centralization of drug and medical input supplies; and support of a decrease in the high mortality rate.

In 1985, a cycle of neoliberal policies was inaugurated, including price freedom with regard to wages, foreign exchange, and free trade; an opening abroad (free exportation and importation, capital mobilization, and reduction of customs duties); decentralization of public enterprises; a decrease in government expenditures; privatization of the economy; free contracting and freezing of civil service wages; and relocation of public employees. As for health policies, the previous Government provided a framework of action for the new Government since its initial documents maintained a similar policy that stressed participation, comanagement in health, and execution of the primary care strategy. Decentralization of health services is stressed as the basic means of improving the efficiency and efficacy of services.

The Ministry of Health notes that the health care model will be based on the principles of universalization of services as a constitutional right; integration of preventive and promotional activities; progressive integration of hospitals in the network of services; and popular participation and social mobilization.

A new democratic government was inaugurated at the end of the decade that is committed to increasing investment in social programs to decrease negative effects in the most underprivileged sectors of the population. The role of the State is seen as manager, standard setter, and formulator of public policies, and as the entity responsible for paying the social debt accumulated during the decade.

Brazil. The investigation noted the centralization of policy decision-making authority during the 1970s because of the military government's need to adjust the format of its relationship with subordinate levels, while the social policy apparatus comes to have a fundamental policy importance as a mechanism of institutional normatization.

As for health policies during the 1980s, State intervention was characterized as:

- being centralized as to financial and operating decisions;
- favoring ways of financing that involved collecting revenues independent of the formal budget through social contributions;
- crystallizing unintegrated networks—the public health network, which suffered from a scarcity of re-

sources, and the hospital network, which expanded its operational capacity;

- privatizing and favoring the creation and expansion of a medical-industrial complex;
- contributing to the deterioration of the public sector's installed capacity, since it did not assign resources for maintaining or reequipping existing care networks;
- tending to expand coverage, although segmenting and differentiating access for different population groups;
- facing ever more difficult planning, management, evaluation, and control because of a care model and management practice that allowed little control over operating costs and that was hard to rationalize; and
- showing little awareness of the main disease problems of the population in different parts of the country, as well as of needs related to access to and quantity and quality of the services.

The 1980s were marked by a political and economic crisis with structural characteristics that triggered a deterioration of the State's ability to orchestrate national development and of its intervention in social matters.

The transition from a military regime to a democratic government occurred without break with the previous institutional order. In the field of social policy, the greatest challenge was overcoming a general pattern of centralized health care that was financially self-sustained by workers, organizationally fragmented, and privatized, and that maximized special and short-term interests.

Priority problems during the decade were inequality in access to health services, the underorganization of the network, low resolution capability and productivity of existing resources, an inadequate sector-financing structure, the absence of integrated activities, and the multiplicity and lack of coordination among sector institutions, associated with excessive centralization in the decision-making process.

Sector and Ministry directives stressed the need to favor State and local services as well as basic health activities. Interinstitutional integration was sought to achieve maximum organization of the services in a unified, hierarchical, and regionalized network by making use of all installed capacity in the public sector. That sector should be responsible for formulating, carrying out, and controlling activities. The private sector would deal with demands that could not be met by the public network.

Several measures were taken to make the changes effective: at the policy and institutional level, the universal right to health care was decreed and supported by a set of normative measures that guarantee access by any person to public health services and their concessionaires; the national health law was revised; a national health conference was called; and the National Health Fund was reformulated. In addition, the sector and the Ministry began to widely promote decentralization.

Around 1987 the Unified and Decentralized Health System was established through agreements with the state governments. The National Health Care and Social Welfare Institute lost its function of providing services and became an agency controlling and cofinancing the health system. The principles of universalization, integration, integrality, prioritization, regionalization, resolution capability, and social control are priority objectives aimed at increasing the health system's efficacy in the short run.

Chile. In the field of social policies, the State has fulfilled a subsidiary role since 1973 by assuming responsibility only for those activities which private or intermediate agencies cannot assume. Furthermore, in response to policy orientations, the health system was adapted to a free-market economy by stimulating private sector participation and expanding its demand. In this scheme, social policies—among them, health policies—comprise a collection of activities that the State undertakes to benefit those groups which, given their level of income, do not have access to the market and, by so doing, tends to compensate the social cost of the economic policy.

The National Health Services System, composed of the Metropolitan Region's Environmental Health Service and 26 units that operate in a relatively autonomous fashion, was created by law in 1979. Decentralization is perceived as a necessary process for achieving efficacy and efficiency in health management. In the Ministry of Health this process began to be put into effect through regionalization. In 1981, gradual municipalization began at the level of primary care services. This process was completed in 1987, and, within the framework of the Ministry's standards, plans, and programs, it makes municipalities responsible for all activities conducted by establishing ambulatory primary care according to level of complexity.

Financing the municipal services depends on local taxation, and, in general, differences have been noted between municipalities with a socioeconomic composition whose level is inversely proportional to the demand for services. The results of the investigation indicate that despite the State's efforts to direct its health activities at the most disfavored segments of the population, access to highly complex health services continued to be limited to the population with high income, while public services for the majority have deteriorated.

According to opinion surveys, health is a subject of priority concern to the population, and this problem is expected to be solved during the country's current transition to democracy. Discussion is centered on the role of the State, expenditure on health, the role of the private sector, and the community's role and its participation.

Colombia. The investigation showed that caring for

the population's basic needs is the most important health priority postulated in recent development plans. Among the health policies formulated to meet the population's needs, significant ones are primary care and community participation, training of human resources, rationalization of financial and physical resources, intra- and intersectoral coordination, and decentralization of services.

During the period 1978–1982 a National Integration Plan was drawn up whose objective was to extend health services to rural and marginal urban areas in order to guarantee access in the short term to health care for most of the population in need. Between 1982 and 1986, in the context of the national plan aimed at equity in health, improvement in the coverage, efficiency, equity, and quality of health services became the most important objective. This plan introduces concepts related to the structuring of local services necessary to change the content of the policies of decentralization and community participation. Further, there is explicit recognition of the need to coordinate the work of other sectors whose activities affect people's health conditions.

The worsening of those conditions, according to the present Government's Social Economy Plan, stems from the lack of health coverage for 35% of the population, regional inequalities, and the persistence of malnutrition in children. The plan identifies sector policies for promoting universalization of coverage and promoting community participation in seeking solutions to people's health problems. Decentralization of services to the local level through inclusion of municipalities in the National Health System assigns major responsibility for health to this level of government.

The National Health System is composed of the public, private, and social security sectors. Although the three sectors are administratively independent, they should adhere to the standards in health matters set by the Ministry as the system's governing body. The Consolidation Program of the National Health System, financed in part by the World Bank, has as its objective developing the National Health System with emphasis on operating-level institutions. The system's organization embraced the Intersectional and Intersectoral Coordination Committees for operational integration of the institutions having some responsibility for preserving and improving the community's health conditions. The program, which began in 1987, has contributed significantly to intra- and intersectoral coordination, especially at the operating level of the poorest regions in the country.

Nationally, a consensus has been reached favoring the policy of decentralization. The decentralizing process was started at the beginning of the 1980s and gathered strength with the constitutional reform that institutionalized the popular election of mayors, as well as citizen consultation for the most important elections in municipalities. In 1986, several measures regulated citizen participation in municipal agencies charged with providing public services and increased participation by the municipalities in the Value Added Tax by authorizing redistribution of national functions to the bodies benefiting by the cession of the yields from this tax. Nevertheless, decentralization is slow since it involves transforming the administrative and institutional systems. The investigation indicated that the Ministry of Health must adopt a leadership role to bring about approval of the National Health System Reform Law.

The study noted that emphasis should be placed on the need to guarantee technical assistance to the municipalities so they can fulfill their new responsibilities; that the administrative structures of the municipalities are not adequate for discharging assigned functions; and that the restricted content of the reform bills presented to the Congress may be an expression of resistance to the process under way.

Costa Rica. The Government's concern has been to maintain health levels; thus, between 1982 and 1986 an effort was made to compensate for the impact of the economic crisis by aiming nutrition programs at low-income sectors. Integration of the services of the Ministry of Health and the Costa Rican Social Security Fund was stressed. Between 1986 and 1989 the goals of containing the deterioration caused by the crisis were reaffirmed, and an effort was made to regain health levels. Achieving universal coverage remains a major goal, and priority is given to activities directed at the dispersed rural and marginal urban populations and, among them, at families exposed to major risks of becoming sick and dying.

The deconcentration and decentralization of services is now the main health policy, and strengthening local health systems has been adopted as the operating modality. In this sense, consolidation of the National Health System is progressing. In addition, a trend is perceived of privatizing the services of the Costa Rican Social Security Fund (CCSS) and the Social Security Institute through purchases of services from private clinics and medical cooperatives with the head tax as a cost containment mechanism.

The country has long experience in both primary health care and health system integration, and the 1986–1990 National Health Plan continues to focus on consolidating the national health system and restructuring the sector. Nevertheless, institutional problems persist because of the institutions' interest in maintaining their administrative, normative, and financial autonomy and because of the weakness of mechanisms for discussing the proposals.

The regulations of the National Health System, drawn up under the direction of the Ministry of Public Health,

are being considered. They provide that all health institutions form part of the system and that the existence of two subsystems will guarantee integral functionality. Three care levels are defined; it is indicated that among the system's basic functions is decentralization; interinstitutional coordination is provided for the different levels of the National Health System; and it is stipulated that the system's organizational basis will be local health systems. These are defined as "the set of facilities and representatives of the organized community, located in a defined geographic population area, which use their resources rationally and coordinate their activities in accordance with a local plan and fundamentally based on the strategy of primary care."

Three priority problems are identified in the health sector: the present situation of the services, the work force, and consolidation of the National Health System. As for the situation of the services, their deterioration in quality, aggravated by the lack of financing confronting the CCSS, is notorious. The work force faces serious problems that threaten institutional stability because of pay reductions, the decrease in personnel owing to establishment of retirement at age 60, emigration to more industralized countries, and worker unionization. The CCSS supports the strengthening of local health systems, a process that has advanced since 1988, but this project faces problems having to do with the sector's structure. First, it is necessary to replace the present organization, which favors curative, depersonalized, and high-cost care, with a system oriented toward preventive and participative health care. Second, it is thought that the structural readjustments at work in the country since the 1980s will probably continue to reduce the budget assigned to social programs and policies. Finally, national health sector institutions have historically operated rather autonomously, which may hinder the sector's integration.

Ecuador. Those interviewed in the investigation noted that malnutrition is the country's principal health problem and preparation of the National Health Plan its most important activity. The priority assigned to malnutrition has in recent years been reflected in the formulation and execution of several health policies to solve this problem, basically in the area of maternal and child health.

The 1989–1992 Health Plan declares the following to be priorities: comprehensive family health care, nutritional improvement, basic sanitation, drug supply, and hospital improvement. The plan states that the new health policy is part of the National Development Plan and is one of the components of paying the social debt which the Government has called a main objective. This commitment by the Government implies that the economic and productive sectors orient programs and resources toward caring for the most disadvantaged sectors of the population. Broad mobilization of the population in participation and concurrence activities and decentralization are considered critical strategies for achieving more efficiency and efficacy in the provision of health services.

The study also showed that the Government continues to be concerned about health services coverage and, in light of budgetary reductions, is looking for modern mechanisms to reduce costs. Toward that end it has begun to prioritize the services it provides the population.

Guyana. The health policy investigation indicated that the basic frame of reference is the change in the structure of the government, which was transformed through the 1980 constitution from a cabinet system with a prime minister to a presidential system. In the new presidential system, the power structure consists of a group of subordinates including several vice presidents, a prime minister, several assistants to the prime minister, ministry heads, ministers of state in the ministries, and other assistants and advisers.

Another important feature of the 1980 constitution is the institutionalization of the regionalization process, by which the country is divided into ten semiautonomous regions. The aim is to facilitate deconcentration of services and administrative functions and to carry out and publicize decisions and policies so that they reach most of the population, thus allowing for a more equitable distribution of resources and services.

Those interviewed in the study said that despite the fact that the Government is committed to promoting preventive health services, a concentration of curative and emergency services has resulted from the economic crisis that affected the country throughout the decade. In addition, deterioration of the physical infrastructure of Georgetown Hospital and other health facilities appears to be a problem requiring urgent attention.

Jamaica. The investigation showed that the goals and objectives of the health plans since at least the 1970s have been similar; all have been based on the primary care strategy and its principles. The goals have been to ensure accessibility to health services and institutionalization of a broad and comprehensive health care system. Also recognized are the need for investment in human resources and the importance of community participation in planning and conducting health services. At the same time, intersectoral coordination has been strengthened as a management strategy for primary health care.[3]

The economic difficulties that peaked between 1985 and 1986 led to the present health policies. Although the Government is committed to applying the primary care

[3]National Health Development, 1982; Health Policies, 1989; and economic and social surveys in Jamaica.

strategy, the issue of cost containment aroused great concern, which had two main consequences: concern about maintaining and rationalizing the physical infrastructure and administration of existing resources, and the weakening of policy formulation structures and processes.

The functions of the health care system were reviewed, and the main ingredients of the health policy were defined as follows: privatization of nontechnical hospital support services (laundry, food); privatization of hospital management, with a very close relationship between care providers and those financing it; more cost recovery from service consumers; and contraction of the Government's duties in the direction of policy formulation, quality control and monitoring, and primary care activities.

Nevertheless, although the Government tried to maintain direct responsibility for the poor and indigent, financial limitations reduced its options. The resulting effect was emphasis on provision of basic services and their physical facilities. The Social Well-Being Program, which recognized the deteriorating impact of adjustment programs on social services, was created in 1988. This plan establishes the need for base hospitals, service coverage areas, and geographic and demographic rationalization of different levels and kinds of services.

A new government assumed power in March 1989. Although it is clear that existing economic difficulties, recognition of the importance of cost recovery, and contractual obligations and agreements will impose a degree of continuity, the new policy reveals that different answers and solutions are being sought to solve these problems. This policy has two main purposes. One is to establish closer links between the health sector and development plans. In that sense, plans already exist to link the policies and activities of the Ministries of Agriculture, Youth, and Community Development with those of the Ministry of Health.

The other important purpose of the new policy is development of human and physical resources. Targets are improved working conditions and training opportunities for professionals and rationalized management systems. With regard to the latter, the solution includes service regionalization and localization. Local hospital boards will be created in which the local interests of the community, public and private, will be represented, as well as those of health and others. Five regional councils will supervise these boards, which will also be responsible for primary care activities in their geographic area of responsibility.

The new governmental policy proposes to establish a Health Foundation whose most important tasks will be to serve as liaison between the public and private sectors and to act as adviser to the Government.

Mexico. The 1984–1988 National Health Program was formulated on the basis of the contributions of health sector institutions, chiefly through interinstitutional groups, as well as those of other sectors, expressed through popular consultation on democratic health planning carried out at the beginning of 1983.

The Health Program's main objective was making effective the right to health protection. In addition, it represented a policy commitment by the federal Government which, based on the State's governance, made effective the participation of health sector institutions in the federative bodies through unified development agreements and of the society itself through coordination of activities.

This program also established the following general objectives: to provide medical care services with special emphasis on the first level of care, improving their quality, and to provide social assistance to unprotected groups and support the development of the family and community by promoting education for social integration.

Health Program strategies focused on establishment and consolidation of the National Health System, as well as fulfillment of health sector programs, which in turn required adoption of five instrumental strategies: decentralization, sectorization, administrative modernization, intersectoral coordination, and community participation. In accordance with the general health policy defined by the General Health Law, 13 action programs (medical care, maternal and child health, mental health, disease and accident prevention and control, health education, nutrition, occupational health, addictions, environmental health, sanitation, health monitoring and surveillance, family planning, and social assistance), as well as four support programs (research, human resources training and development, information, and health inputs) and five instrumental programs, were organized.

Development and consolidation of the national health system have required renovation of sector institutions and creation of means for their better coordination and operation. In this process the Secretariat of Health and Welfare has strengthened its normative functions of planning, evaluation, supervision, and financial management while gradually transferring operation and administration of the health services to the states and Federal District.

Decentralization of the health services was accompanied by extensive legal support, which implied the formulation of state laws and made use of mechanisms for federal-state coordination through agreements for program coordination, system integration, sanitary regulation, cofinancing, public works, logistical support, and delimitation of responsibilities.

Administrative modernization of the Secretariat implied transforming a service-providing agency into the present agency responsible for operating the National Health System. The Secretariat reduced the number of central general directorates (from 38 to 22), reshaped its

internal regulations, and made health services, sanitary regulation, and research and development substantive areas while simultaneously consolidating support areas.

Intersectoral coordination became a major resource for dealing with and solving certain health problems in which other sectors intervene. Activities related to community participation were demonstrated in such achievements as social mobilization on national vaccination days, the organization of municipal health committees, and the creation of the Mexican Health Foundation.

A unified health services model is in place in all of the country's states, the basic features of which are universality, accessibility, and efficiency, based on care levels. This model comprises the concepts, procedures, and methods for providing services, on the one hand, and the human resources and infrastructure needed to operate them, on the other. In accordance with this model, health care jurisdictions were strengthened to improve their organization, administration, and infrastructure, as well as their service systems, through the establishment of general systems of service administration.

In May 1989 the National Development Plan for 1989–1994 was drawn up, and later the National Health Program for 1990–1994 was launched, which takes into account the basic health policy definitions set forth in the National Development Plan.

Nicaragua. According to the investigation, health policies were strongly influenced by the country's economic, political, military, and social situation. During the first years after the change in government in 1979, guidelines were established for the sector that defined health as a right of the whole population and in which the State assumed responsibility for ensuring necessary services and their accessibility. The Unified National Health System was then created under the responsibility of the Ministry of Public Health as the appropriate instrument for achieving the objectives noted.

Between 1980 and 1985 a general process of national reactivation began in the framework of popular mobilization around the National Literacy Campaign and People's Health Days, and public investment was aimed at constructing the economic and social infrastructure. During that period People's Health Councils were created and a network of health agents was set up to support the Days. In 1983 the Health Plan defined the primary care strategy as the tool for achieving national objectives, and special attention was paid to preventive activities, especially the tasks of immunization, environmental sanitation, prenatal care, control of malnutrition, malaria, tuberculosis, diarrhea, and health education. At the same time, work began on designing the Integrated Health Area Activities Plan to convert it into an instrument for coordinating the programs of the Ministry of Health. Extensive regionalization of the health sector also began, together with the political and administrative reorganization of the State into six regions and three special zones.

This stage terminated at the end of 1985, and a crisis was evident in the health system as a result of contradictions and conflicts among established objectives, the structure developed, and the economic and political conditions of the country at the time. The war situation intensified other problems related to the destruction and deterioration of health units and logistical resources. The primary care model based on preventive activities and community participation was also threatened, since care of the wounded reinforced medical practice based on hospital care.

Beginning in 1988 a national action plan was launched, starting with annual plans that guarantee flexibility and provide appropriate responses to situations of uncertainty. The national plan establishes activity guidelines that define care of the handicapped, combatants, persons with tropical diseases, and mothers and children. It also proposes certain changes in the health system in order to extend decentralization and promote primary care, including a campaign to defend the well-being of children that involves all sectors, and decentralization through the municipalization process.

Peru. Although the two governments during the 1980s were democratic, the period was distinguished by a series of serious social conflicts and crises. At the same time, those years witnessed marked economic crisis, with only two periods—1979–1980 and 1986–1987—in which there was a slight economic improvement. The policies of the two governments differed: the first adopted an orthodox economic policy, which resulted in a serious recession toward the end of its regime; the most notable feature of the second was reduction of payments on the external debt to 10% of exports.

The Organic Health Law, promulgated in 1985, stressed the democratization of health by facilitating equitable access to health and promoting popular participation. Policy guidelines stemming from this law included social mobilization and participation, effective decentralization of services, multisectoral activity, development of new approaches and technologies for solving health problems, adaptation of the sector and its institutions to the policy guidelines, recognition of the leadership role which the Ministry of Health should have in drawing up health policies, and achievement of health for all by the year 2000 through sector activities.

The study noted that in 1985 the Government began an extensive regional development project in which 57 hospital areas (basic administrative units of the Ministry) were established; the number of administrative areas was reduced to 28 in 1986.

The achievement of established objectives has been hindered by difficulties with respect to the quantity and quality of existing resources, little flexibility of the administrative systems, lack of continuity in policy decision making, and maintenance of rigid concepts with respect to planning and management of health services.

Some of those interviewed during the study noted that the public health sector is to a great extent being displaced by private medicine. In this sense, recognition must be given to the activity of nongovernmental organizations in Peru (120 in Lima and 240 nationwide). The Church also conducts health activities through people's pharmacies linked to parishes and health education activities throughout the country.

Trinidad and Tobago. Despite the economic crisis that affected the country during the decade, the Government remained relatively stable. The health sector does not seem to have been affected in the same way as other sectors. For example, while the functional allotment of the central Government's recurring expenditures remained stable and even increased, expenditures on general services, such as the treasury and defense, declined. A recent report on the impact of the adjustment policies and health financing programs[4] concluded that between 1980 and 1987 the Ministry of Health's budget increased at an annual rate of 15.7%. (The pattern is basically the same in other Caribbean countries.) Nevertheless, this budget increase was due mostly to increases in salaries and not in goods and services.

Acceptance of the primary care strategy, defined as an increase in access to basic health services, continues. In addition, the Government pursues its efforts to strengthen coordination between the various sectors whose activities affect health. Further, support has recently been given to the strategy of strengthening local health systems, although regionalization is not clearly defined, and there are difficulties in describing its form and functions in order to determine the manner in which health services will be improved.

Uruguay. During the past 20 years, health has not been given priority among public expenditures; in 1974 the health sector received 8.1% of the central Government's outlay, while in 1982 it received only 3.8%. During this period there was a major increase in the resources assigned to the health institutions of the armed forces and police and a decrease in those assigned to the Ministry of Public Health. This budget reduction had a real impact on the quality of care and on the population's health situation since the decrease coincided with an increase in the user population. In addition, the wage contraction of 54% between 1972 and 1983 resulted in large groups of workers having limited access to the services of the private mutual-benefit subsector, turning them into potential users of the public sector.

To use resources more efficiently, an effort was made to supervise the activity of the private sector by assigning it responsibilities by type of task and geographic area, accompanied by a program of support to collective medical care institutions (formerly known as mutual-benefit societies). In 1983 a coherent policy was put into effect, containing these guidelines and the Ministry exercised the function of controlling the private mutual-benefit subsector, generating at the same time a demand through the purchase of services. Other mechanisms that promoted private activity were authorizing private personnel to provide highly specialized services and increasing partial insurance policies, which grew in number from 1981 onward by covering unattended areas in the institutional public and private sectors.

The democratic period in the country began in March 1985. During this presidential term (1985–1990), several plans for reorganizing the sector were put forward, one of which is the draft bill for creating a national health system drawn up by a Ministry of Health commission. The document, "Preliminary Aspects, Policy, and Strategy," published by the Ministry of Health in 1985, cited the following as the country's priorities: satisfaction of the needs of unprotected groups through the strategy of primary care, formulation of intersectoral policies, and coordination and integration of the services.

The study identified three orientations during this period: a trend toward strengthening the private subsector, deconcentration and decentralization of services, and sector restructuring through integration and coordination actions.

Toward the end of 1987 the State Health Services Administration was created; this agency was charged with direct administration of the services, leaving the Ministry the chief duties of policy formulation, standard setting, supervision, and control of the sector.

Departmental Health Committees were created in the interior of the country that relate to such different operational agencies as the Ministry of Public Health, intendancies, and other local authorities (police, church), and that work with the Federation of Medical Agencies of the Interior, which represents the institutional private subsector.

The investigation also noted that primary care is an incomplete experiment in Uruguay since significant community participation has not been achieved and curative activities predominate.

[4] L. Taylor, *Economic Adjustments and Health Care in the Caribbean,* PAHO/CARICOM Secretariat, 1988.

Venezuela. The focus of health priorities and policies cannot be separated from a general perspective of the evolution of the political system, from historical circumstances closely linked to the country's role as an oil exporter, and from the impact which that economic structure has had on its social structure. Beginning in the 1980s the flight of capital increased, which has significantly reduced Venezuela's international reserves, and the Government has been obliged to reduce public expenditures and, as a result, social programs.

The most important problems in the field of health identified in the investigation's interviews are the recrudescence of diseases that supposedly had been eradicated or were under strict control (such as malaria and leishmaniasis) and the care crisis—especially manifest in the lack of minimal resources in public hospitals, as well as the increase in fees for private services.

The investigation indicated that putting the national health system into effect and the process of approving the corresponding Organic Law (1987) are now the health sector's most important policy problems. The main objective in creating the system arises from the need to increase the efficiency, accessibility, and quality of services, since the problems identified in the health sector seem to derive, among other things, from administrative inefficiency, the weakness of the leadership role of the Ministry of Health and Social Welfare, and deficiencies in the use of human and financial resources.

There are several interest groups in the country's health scenario. Some believe that the problem of accessibility has priority, and they stress the need to attain high levels of efficiency to achieve adequate coverage. These groups have stated that decentralization appears to be necessary, since such a process would "solve" the problem of care costs by transferring their payment to regional, state, and municipal tax collections. Other groups think it better to try to maintain the levels achieved by starting with the development of the care institutions already in existence. They thus believe that it is not advantageous for the Ministry of Health to be the institution charged with total administration of the services.

Health Care Financing

There are three principal mechanisms by which health care is paid for in the Region. One, typical of ministries of health, is general tax revenue, sometimes including earmarked taxes. A second is prepaid plans, which range from social security schemes with obligatory participation to private insurance, health maintenance organizations, or other voluntary arrangements. In prepaid plans, revenues may be raised as payroll taxes or as voluntary contributions, and may be proportional to incomes or fixed in amount. The third mechanism is out-of-pocket payments of the cost of care, as occurs in the traditional private sector. These payments may cover the full cost of care, or may be minor sources of payment in tax-financed or prepaid schemes. Both open, public institutions and social security schemes may, like some private insurance arrangements, charge user fees or require copayment for services; these charges typically cover only the least expensive elements or only a nominal share of costs for more expensive kinds of care, such as hospitalization.

The discussion of the political, social, and economic context of health in the Americas (Part I) reviewed briefly the level of central government expenditure on health for those countries for which data are available on an approximately comparable basis. (See Annex Tables I-7, I-8, and I-9.) Spending by central governments, however, is a highly variable fraction of total resources devoted to health care, and while in some countries it is the major share, in others, government spending accounts for less than half of total expenditure. Moreover, governments often pay for health care they do not provide directly, by transferring resources to private providers or to institutions at other governmental levels, as when central agencies serve as conduits for resources to state or provincial and municipal public health institutions. Even spending by the central government through its own facilities can vary greatly, as, for example, between the ministry of health or similar agency, which in principle always covers the entire population, and social security or other insurance schemes, which—again in principle—offer care only to an enrolled population, whether or not enrollment is voluntary. And apart from the question of which agencies spend or receive funds are the questions of how revenues are generated and on what inputs or programs they are spent. This subject is too complex to allow for more than a cursory review here. Attention will focus on some of the principal financing features of the Latin American and Caribbean health care sector and on some of the most notable changes it has experienced in recent years.

Expenditure in the public sector is easier to estimate than spending that passes through the private sector, except where the latter is financed by government transfers. Most truly private spending is out-of-pocket, with very little of it being financed by insurance in most countries. The exceptions to this rule are Argentina, Brazil, and Uruguay: private individual or group insurance and prepaid medical care through health maintenance organizations are relatively important in Brazil, whereas in the other two countries much medical care is provided by schemes that are essentially like social security but are either voluntary or are associated with particular professions, enterprises, or sectors, rather than being universal for the entire formal labor force. Chile is also exceptional in this regard, since as part of the privatization of the

economy during the 1970s and early 1980s, a system of private health insurance organizations (the ISAPRES, or Instituciones de Salud Previsional) was created in 1981, and workers were allowed to transfer their health insurance from the Government-operated system to these new institutions.[5] These private insurance schemes can be either open in their enrollment (like traditional private insurance) or closed (like social security schemes or the mutual associations of Argentina and Uruguay).

[5]For a review of recent changes in the Chilean health care system, see Tarcisio Castañeda, "The Chilean Health System: Organization, Operation, and Financing," pp. 3–25 in *Health Economics: Latin American Perspectives* (Washington, D.C.: Pan American Health Organization, 1989).

Table 1 gives an idea of the relative importance of different subsectors of the health sector in five countries studied in an analysis of the impact of the economic crisis, other data from which were presented in Part 1 of this volume. One feature that is evident from this comparison is that the relative sizes of the public and the private sectors vary greatly: the private sector accounts for roughly half of total health care spending in Brazil and Mexico, but a mere 11% in Ecuador and only 31% in Uruguay (the social insurance schemes mentioned above are counted in the public sector for this calculation; if they were treated as private, that sector would increase to 74%).

The two principal determinants of the role of the pri-

TABLE 1

Structure of the health sector in five countries: percentages according to various physical and financial indicators, 1985.

Country and indicator	Public care[a]	Social security[b]	Total public sector	Private sector	Total health sector
Mexico					
Value of gross product	14[c]	39[c]	53	47	100
Fraction of public sector	26	74	100	..	..
Gross domestic product	...	...	49	51	100
Central government expenditure	26	74	100	..	..
Honduras					
Central government expenditure	70	30	100	..	..
Consultations	78	22	100	..	..
Uruguay					
Consolidated expenditure[d]	27	43	69	31	100
Ecuador					
Health establishments	62	27	89	11	100
Fraction of public sector	70	30	100	..	..
Hospital beds	...	...	83	17	100
Outpatient consultations	71	29	100	..	..
Brazil[e]					
Central government expenditure	15	30	46	54	100
Fraction of public sector	34	66	100	..	..
Hospital beds	...	...	25	75	100
Outpatient consultations	50	22	72	28	100
Fraction of public sector	69	31	100	..	..
Hospitalizations	35	2	37	63	100
Fraction of public sector	95	5	100	..	..

[a]Ministry of Health and related institutions; in Uruguay and Ecuador, includes the medical services of the armed forces, police, etc.

[b]The figure for Uruguay includes the Consolidated Medical Care Institutions (IAMC), usually classified as a "mixed sector."

[c]The breakdown between "public care" and "social security" assumes the same proportions as for the expenditure of the central government, that is, 14:39 = 26:74.

[d]Equivalent to the value of the gross product.

[e]With the exception of the distribution of hospital beds, the data refer to care financed by, but not necessarily provided in, their own facilities. "Private sector" refers to services contracted with private suppliers, excluding services purchased directly by consumers. "Public care" includes contracted services, including those provided outside the central government at other levels of the government or with nongovernmental, nonprofit institutions.

Source: Table 2–1 of Philip Musgrove, ed., "Economic Crisis and Health: The Experience of Five Latin American Countries," Document CD34/24, Annex II, prepared for the XXXIV Meeting of the PAHO Directing Council, Washington, D.C., September 1989.

vate sector are the average wealth of the country, since higher incomes allow people to purchase more services at full cost, and the degree of transfer of public funds to private institutions through contractual or insurance arrangements. It is rare for the central government to have a virtual monopoly on provision of medical care, as is the case in Cuba. Elsewhere, a small private share generally reflects poverty, so that the vast majority of the population relies on subsidized, public care.

Within the public sector in health, there is much variation in the balance of expenditure between "open" institutions, such as ministries of health, and "closed" institutions, such as the social security institutions. In richer countries with a large organized labor force, such as Mexico and Brazil, social security accounts for two-thirds to three-quarters of public spending on health care; this share falls to one-fourth or less in countries where only a very small portion of the labor force is covered by such schemes. In the Caribbean, social security is generally insignificant in health care financing, and essentially all public expenditure is via ministries of health or similar "open" bodies. As a rule, more is spent per beneficiary or per patient in social security systems, which are financed by earmarked contributions deducted from salaries, than in ministry of health systems, which depend largely if not entirely on general tax revenue. Thus, the share of expenditure through social security is larger than the share of patients seen or population "covered."

A second feature evident in Table 1 is that the pattern of expenditure among the different subsectors may or may not correspond to the allocation of physical resources (infrastructure) or to the allocation of output of the sector (consultations and hospitalizations). In Brazil, which is perhaps the extreme example in the Region (apart from Canada and the United States), the central Government spends slightly less than half the money, owns only one-fourth of the hospital beds, provides 37% of the hospitalizations, but accounts for nearly three-quarters of the ambulatory care. Thus, the public sector is relatively specialized in ambulatory consultations, generally of low cost, and the private sector is specialized in hospital care, generally of high cost. This arrangement is due entirely to the transfer of public funds to private hospitals—an arrangement which has been scaled back somewhat in the years since 1985—and is the opposite of what is observed in countries where such transfers do not exist. In such countries, even poor people must pay what are for them considerable out-of-pocket sums for drugs and for inexpensive consultations, while as a rule only the rich can afford private hospital care. As a result, the private sector tends to specialize on the lower-cost elements and the public sector on hospitalization, even if the public sector also provides a large volume of ambulatory care. Where the private sector is small, the public sector tends to provide comparable shares of all the components of care—Ecuador and Honduras are examples of this more typical pattern. Canada represents the extreme of public financing relative to public provision of health care in the Region: a national, universal health insurance scheme is supervised by the federal Government and financed by both the federal and the provincial governments, with revenues being transferred almost in their entirety to private providers. The federal Government imposes separate controls on the construction and equipping of hospitals, to avoid the creation of supplier-induced demand for services.

Traditional financing of health services via taxation, while it has contributed to marked improvement of health status and has made services available far more equitably than would occur in a purely market, fee-for-service environment, has nonetheless come under increasing criticism in recent years. The World Bank summarizes the reasons for this as financial stringency, meaning that many governments are not financially able to sustain the existing public systems, much less continue to expand them; inefficiency of many public programs; and inequitable distribution of the subsidies.[6] The first of these problems is, of course, largely attributable to the economic crisis of the last decade, and public financing of health care would certainly not be in such difficulty if substantial economic growth had continued since the late 1970s. The third argument, of inequity, applies more to certain other public programs, particularly education, where subsidies go preferentially to the less needy. In fact, studies of the distribution of public subsidies to various areas of "social" expenditure in 1982 in five Latin American countries (Argentina, Chile, Costa Rica, the Dominican Republic, and Uruguay) found that health care spending was as equitable as any public expenditure, by the criterion of net subsidy from the well-off to the poorest members of society.[7] In any event, problems of resource shortage and of wasteful or ineffective expenditure are enough to cause increasing dissatisfaction with this traditional way of paying for health care, leading to a search for alternatives which could increase efficiency without sacrificing equity. Chief among these options are privatization of the delivery of services, even when government continues to pay for them or to assure their financing through payroll deductions, and the imposition of user fees at public facilities. Both these mechanisms were discussed briefly in Part I, and they are the subject of an increasing literature

[6] *World Development Report 1988* (Washington, D.C.: The World Bank, 1988), p. 132.

[7] A. Humberto Petrei, ed., *El Gasto Público Social y sus Efectos Distributivos* (Rio de Janeiro: Programa ECIEL, 1987).

and of experimentation in various countries, sometimes at the urging of national or international donor agencies.[8]

The most substantial changes in health care financing in the Region in recent years have been the creation of private health insurance schemes financed by payroll taxes, as occurred in Chile (described above); the transfer of substantial fiscal responsibility from central to state and municipal governments as part of a policy of decentralization, as is under way in Brazil;[9] and the introduction or increase of user fees at public health facilities in a number of countries. A still more substantial change, which is largely complete in Costa Rica and has begun in Brazil, is the elimination of much or all of the traditional distinction between the ministry of health's open, general-revenue–financed system, and the social security system's closed, payroll-tax–financed system. This integration is equivalent to enrolling (virtually) all the population as beneficiaries of the social security system, and leaving to the ministry of health chiefly those health care activities that are not directed to individual patients (vector control, environmental sanitation) or that are purely preventive in nature (vaccination).

Changes in the way that health care is financed can occur in response to different and possibly contradictory pressures, and can pursue different and possibly incompatible objectives. This is perhaps most clearly the case with changes designed to shift more of the cost to the consumer, where the goal may be to raise more revenue, to deter utilization that is considered "excessive" relative to medical needs, or to create incentives for better use of resources by allowing those in charge of health facilities some discretion in the use of the fee-generated revenue. Unquestionably, much of the pressure for change derives from the perception that medical care costs are increasing or "out of control," although it is difficult to disentangle the contributions of inefficiency, technical progress, and financial incentives to this state of affairs. Because of an emphasis on cost control—whatever the reason for the costs in the first place—the preoccupation with how money is raised to pay for health care translates into a preoccupation with the way that money is spent or allocated to different inputs, programs, or medical problems. This concern with costs is also largely attributable to the economic crisis, and like the concern with payment mechanisms it has begun to generate a substantial literature.[10] Unfortunately, data on costs of providing specific services or achieving specific health-status results are not collected regularly or compatibly in the Region; most estimates come from detailed studies at individual facilities and cannot readily be generalized. It is therefore not possible to review in this publication how expensive health care is or how economically resources are being used in the countries of the Region. At best, one can look at aggregate data on expenditure, of the sort reported here and in Part I, and the data on health status in Part II, and note how weakly they are associated: paying for health care is not, in any uniform or simple way, the same as buying health.

Intersectoral Coordination

The establishment of effective intersectoral links is one of the vital components of the primary care strategy. During the 1980s the crisis and the dimensions of its effects made clear the importance of the interrelationship between health and other sectors (agriculture, education, water and sanitation, housing, construction, transportation, etc.), as well as the impact of those factors on the population's health. In addition, even when there is a trend toward decentralization, the extreme centralization and sectoralization of policy authority limit coordination and integration and, as a result, hinder linkage of the different sectors.

Despite the major financial restrictions and the generalized social crises, the countries continue their efforts to strengthen intersectoral coordination. In the Caribbean, for example, one notes the usefulness of national intersectoral working groups, which facilitate the exchange of ideas, involve sectors related to health, and act as a catalyst of programs of this nature. Several of the subregion's countries have intersectoral committees to draw up policies and plans in areas related to health.

In addition, as a contribution to these efforts, several investigations promoted by PAHO and the Latin American Institute of Economic and Social Planning have been carried out in Brazil, Peru, and Venezuela to increase knowledge of the nature of the ties between health and the broader processes of socioeconomic development so

[8]Among other sources, see Geoff Hoare and Anne Mills, *Paying for the Health Sector: a Review and Annotated Bibliography of the Literature on Developing Countries*, EPC Publication No. 12 (London: Evaluation and Planning Center for Health Care, London School of Hygiene and Tropical Medicine; Winter 1986); Robert Robertson and Dieter Zschock, *Guidelines for Analysis of Health Sector Financing in Developing Countries*, DHEW Publication No. (PHS) 79-50087 (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of International Health, 1979); Logan E. Brenzel, *Planning the Financing of Primary Health Care: Assessing Alternative Methods* (Arlington, Va.: Resources for Child Health Project (REACH), John Snow, Inc., March 1987); and Maureen Lewis, *The AID Experience in Health Care Financing, 1978–1986* (Arlington, Va.: Resources for Child Health Project (REACH), John Snow, Inc., 1987).

[9]For a summary of Brazilian health care financing prior to this reform and a discussion of the principal changes since 1985 and their initial implementation, see André Cézar Médici, "The Financing of Health Policies in Brazil," pp. 26–50 in *Health Economics: Latin American Perspectives* (Washington, D.C.: Pan American Health Organization, 1989).

[10]See, for example, Robert L. Robertson, "Review of Literature on Costs of Health Services in Developing Countries" (Washington, D.C.: The World Bank, Population, Health, and Nutrition Department, 1985); and Patricio V. Márquez, "Cost Control in Health: an Overview of Country Experiences in the Americas" (Washington, D.C.: The World Bank, Brazil Country Department, 1989).

that formulated public policies contribute to improving the population's quality of life and promote equity in the system. The studies identified the socioeconomic factors that affect health status in order to determine appropriate intersectoral interventions.

In Brazil, one of the three research teams examined the relationships of the agricultural structure, the Government, and food and nutrition policy to the health of vulnerable groups. The second team examined urbanization and its consequences for health in the São Paulo metropolitan area. The third team reviewed the industrial policy and its application with respect to the availability of pharmaceutical products and other health sector inputs.

The study done in Peru examined housing, educational, and agricultural factors in regionalization and decentralization in relation to certain urban districts in Lima and other areas.

The study in Venezuela focused basically on analysis of three problems: the impact of social policy, especially on housing and health; the specific impact of certain macroeconomic standards; and available sources of information about the repercussion of other health sector activities. An attempt is being made to articulate intra- and intersectoral programs and institutions, and, at the same time, to support public decentralization. The model coincides with securing the national health system, structuring the social security system, decentralization, and efforts to overcome extreme poverty. The model has been established and tried in several parts of the country, and it is hoped that it will be applied in different regional jurisdictions during the 1989–1994 governmental term.

The three studies found a lack of coherence among most of the programs (for example, limited coordination between housing and health or between education and health programs); established the need to improve the capability to collect intersectoral information at the state level; pointed up differences in morbidity and mortality indices by occupation and geographic area; recognized difficulties in ensuring control of technology and drug production and distribution; and highlighted the importance of singling out health's priority in development within the decision-making process.

A recent example of intersectoral coordination is the Comprehensive and Community Family Health Program carried out in Ecuador since mid-1989. Participating in it are the Ministry of Public Health, which coordinates the program, the Ecuadorian Social Security Institute, and the Ecuadorian Sanitary Works Institute, as well as other sectors of the Ministries of Education, Social Welfare, and Labor. Universities and the medical, nursing, and pharmaceutical professional associations also participate.

Decentralization and Development of Health Systems

In recent years, the governments of the Region have given increasing attention to political, administrative, and territorial decentralization. They have recognized that the democratic processes currently under way in most countries of the Americas depend on effective decentralized decision making and resources administration.

Effective decentralization enables local authorities to respond to the needs of individuals, families, and the community in their area of responsibility in a better and more timely manner than when the process is directed and administered from the central level. This improvement results from a more accurate and prompt assessment of problems and solutions that takes into account the specific characteristics of the local social groups that make up the overall national society.

For their part, the ministries of health perform a leadership role in the decentralization of health systems, in recognition of its importance in achieving the goal of health for all by the year 2000 through primary health care. Thus, in some countries the health sector has directed the processes of decentralization, while in others it has played a decisive role in effecting the changes necessary for transforming the national health systems.

Decentralization and deconcentration are under way at a time when the countries of the Region are experiencing one of the most difficult periods in recent decades owing to the economic crisis and its many attendant uncertainties. At the same time, many of the countries are reestablishing or initiating processes of political democratization that favor decentralization of the power of the State. In response to ever-increasing social pressures for fuller participation in decision-making processes, governments have turned to deconcentration and decentralization as means of improving the accessibility, efficiency, and effectiveness of social services in general and of health services in particular.

The processes of decentralization are complex and imply major political and social consequences. Yet governments tend to consider them only in their political dimension, as a means of conferring legitimacy and stability to their administration through greater social participation in political activity. These processes, however, take on their full meaning only when they become instruments for the redistribution not only of political power but of administrative and technological power from the central level to regional, peripheral, intermediate, and local instances.

In the health sector, decentralization translates as the need for governments of the Region to organize local health services at the municipal level (or the equivalent

level in each country), although—depending on the specific circumstances of the country and the region—municipalities may be part of larger units, or there may be subdivisions within a single municipality.

Decentralizing health services generally involves difficult and slow processes that entail laborious negotiations. The countries that have already initiated these processes face difficulties arising from the intransigence of Latin American bureaucracies, which can frustrate new institutional objectives. Another constraint is the limited availability of financial resources for transforming the base of material support so that decentralization can be carried out as effectively as possible given the knowledge currently available.

Local Health Systems

During the period 1985–1989, the countries of the Region undertook a bold effort to develop local health systems. Resolution XXI of the XXII Pan American Sanitary Conference (1986) singles out as a priority the importance of strengthening the health sector infrastructure, which comprises the strategies of primary care and decentralization, including social participation, intersectoral articulation, and priority provision of care to high-risk groups and those whose social needs heretofore had not been met. Two years later, the need to transform national health systems by developing local health systems to promote the primary care strategy and achieve the goal of health for all by the year 2000 was reaffirmed, for both the countries and the Organization, in Resolution XV of the XXXIII Meeting of the PAHO Directing Council (1988).

Local health systems take different forms and characteristics in different countries, depending on national circumstances and historical and political development. However, the existence of a local health system requires the formal political decision to define and implement such a system and to establish criteria that recognize the political-administrative, geographic, and community conditions in which it operates.

In that context, local health systems were the subject of a series of subregional meetings. Below is a summary of the situation with respect to the transformation of national health services in the countries of the Region, grouped by the meetings in which they participated.

Central American Isthmus. In this subregion, made up of small unitary republics, the ministries of health are promoting processes to transform the national health systems, based on criteria that take into account people's accessibility to services and the epidemiological risk conditions, as well as administrative and technical criteria aimed at maximizing the resolution capability and efficiency of the services. In these processes, international cooperation as part of the Plan of Priority Health Needs in Central America has been crucial, and efforts have targeted dovetailing external financing and health programs with the aim of assuring broader permanent and coordinated development of the health services infrastructure. The countries' interest in strengthening local health systems has been addressed explicitly in recent years during the Special Meetings of the Health Sector of Central America. The following is an analysis of the situation in the countries of this subregion.

Belize. There are six health regions, which correspond to the country's six political-administrative districts. The Ministry of Health has adopted a policy of strengthening the national services network, which is made up of health centers and district hospitals. The health regions play a major role in the managerial aspects of this process, which in turn are considered to be essential for developing and consolidating local health systems.

Costa Rica. The deconcentration of health services has been under way since 1985, based on delegation of authority and assignment of responsibilities for local programming; management; control of inputs; and financial, accounting, and human resources administration. This process encompasses all levels of the national health system. Eighty-nine local health systems have been organized through coordination of the activities of the Costa Rican Social Security Fund and the Ministry of Health. The area of coverage of the local systems has been defined, taking into account people's access to services and the country's political-administrative jurisdictions. One of the most important aspects of interinstitutional coordination is joint local programming, which is enhanced by social participation through the establishment of Local Technical Councils.

El Salvador. There are 14 departmental health units (corresponding to the country's 14 political-administrative departments), which are grouped into five health regions that have been defined according to various administrative criteria. Departmental units are responsible for local management and can themselves be considered local health systems, as set forth in the policy formulated by the Ministry of Public Health and Social Welfare.

Guatemala. Operational decentralization is under way, fostered by the Ministry of Public Health and Social Welfare, which includes defining 24 health areas for the country's 22 political-administrative departments. These areas are grouped into eight regional health units and subdivided into 384 health districts.

Honduras. The Ministry of Public Health and Social Welfare has divided the country into eight health regions or local systems, which in turn break down into 34 health areas and 650 health sectors. In defining these units, the political-administrative divisions were not taken into account; rather, they were defined on the basis of demographics, service accessibility, resource availability, and, especially, epidemiological considerations.

Nicaragua. Health services are being reorganized at the national level, comprising six regions and three special zones, with a total of nine regional health units. These units encompass 110 health areas, organized on the basis of the 132 municipal systems, which constitute the basic units of the country's political-administrative structure.

Panama. The country's 12 health regions coincide with the provinces. To facilitate local administration, they have been divided into approximately 300 health sectors that, in some cases, are grouped into health areas. As part of the decentralization strategy, the Ministry of Health is experimenting with the organization of local health systems at the metropolitan level, encompassing 13 health sectors. Drawing from this experience, local health systems are expected to be extended to the entire country.

Brazil and the Southern Cone. The countries that make up this area differ markedly—in their form of government (federal in Argentina and Brazil, centralized in Chile, Paraguay, and Uruguay), population size (approximately 140 million in Brazil, some 3 million in Uruguay), and area—and how they are implementing local health systems reflects these differences. Some of the municipalities of these countries have come to play a major role in national affairs, in large part because of the size of their economies and population, the cultural and political importance of their social organizations, or a combination of all these factors. Many such municipalities—which are politically, financially, and administratively self-reliant and which are largely autonomous—have developed health systems, which serve as models for the development of local health systems. The following is an overview of the situation with regard to local health systems in these countries.

Argentina. Beginning in 1985, the role of the State has undergone a reformulation: strategies have been adopted for transforming, decentralizing, and incorporating new forms of social participation, in which the intermediate organizations play a major role, and for democratizing and modernizing basic social services. A federal health sector policy has been adopted that targets support to the provinces so that they can establish comprehensive health systems. This federal system of organization has energized the processes of municipalization. Numerous experiences exist in the management of local health systems, several of which have been in place for some time.

Brazil. The 1988 constitution established the legal bases for restructuring the national health system, in accordance with the principles of the broad national movement known as the Health Reform. According to the new constitution, public health activities and services form a decentralized single regionalized and layered network system, with a single directing body in each sphere of government, each offering comprehensive care and stressing preventive activities and community participation. The new models of health care are based on the municipalization of services, by establishing what in some states have been called health districts, which constitute the basic element of the Decentralized and Unified Health Systems. The several local health systems in operation adopt different forms depending on the state in which they operate.

Chile. In 1981 a process of deconcentration of the health sector was begun, with some primary health care establishments being transferred to the municipalities. Chile has 26 deconcentrated health services, operating in a scheme of technical and administrative regionalization and decentralization. These services are subdivided into 335 operational units that coincide with the communes, which are the basic political-administrative form of organization in Chile.

Paraguay. The country is carrying out activities in a framework of regionalization and local programming, in an effort to integrate the health services. These activities may facilitate the definition of areas of responsibility and services networks, in preparation for establishing local health systems that promote deconcentration of the central level. Sixteen health regions have been defined as bases for the local health systems, and the National Health Council considers local programming a key to attaining interinstitutional coordination.

Uruguay. Since 1985, the Ministry of Public Health has reoriented its activities, based on the primary care strategy. Responsibility for administering and managing health services, as well as for coordinating with other State and private services, was assigned to the State Health Services Administration (ASSE), created in 1987. The ASSE is empowered to transfer health services to the municipalities. The Ministry of Public Health is responsible for formulating health policy and for standardizing, supervising, and controlling the sector. Local health systems are operating in 4 of the country's 19 departments and in one neighborhood of the department of Monte-

video. The rest of the departments are expected to gradually incorporate local health systems.

Andean Subregion. This subregion is made up of Venezuela, whose governmental system is federal, and whose central and state governments both participate in health sector management, and four republics—Bolivia, Colombia, Ecuador, and Peru—with similar characteristics in terms of the structure of the executive branch, in which ministries of health are responsible for organizing the sector nationwide. The following is an overview of the situation in the countries of the subregion.

Bolivia. In late 1986 the National Health Project assumed a management strategy based on popular participation, sectorization, institutional strengthening, and financial rationalization, which made it possible to begin decentralizing health services. The health sector is organized at various levels—national, departmental, health units, and districts—which broadly correspond to the country's political-administrative organization. There are 90 local units, corresponding to the districts, which are distributed in 11 regions. In each of these regions, at least one local health system is being organized and implemented.

Colombia. Since 1985, the country has been undergoing a major modernization of the structure, organization, and operation of the health sector, as part of a national process of administrative decentralization. The National Health System is being consolidated, with decentralization and strengthening of municipal units that will assume responsibility for local programming. The health system is organized at national, sectional, and local levels. Delimitation of the jurisdictions that make up each of these levels follows administrative, health, and epidemiological criteria. At the local level, the size and coverage of the health systems are being studied, with the aim that they conform to political and administrative changes under way in the country as a result of municipalization. Seven local health systems are operating in Cali.

Ecuador. Health sector regionalization is based largely on political-administrative criteria, with the sector subdivided into provincial and cantonal health units, in accordance with the country's political organization. Further decentralization of the health system is under way in an effort to strengthen the 80 cantonal units.

Peru. Although the 1979 Peruvian constitution envisioned a regionalization of the country with the aim of achieving effective decentralization, the Organic Health Law was not promulgated until 1985. This law includes, among the State's objectives, mobilization and full participation of the people and decentralization with delegation of authority and responsibility so as to make it possible to reach the most remote local establishments. Accordingly, decentralization will be launched in the regions to strengthen most of the departmental health units. The Ministry of Health is organized into 25 health units, which are structured along the lines of the 24 political-administrative departments of the country. The regions, in turn, are divided into 125 areas.

Venezuela. Since 1969, health service regionalization has been a political priority, making it possible to undertake different forms of decentralization. In the VI National Plan for Social and Economic Development, decentralization is considered both an objective and a strategy for increasing participation of the regions in decision making and implementation of activities that affect the country's development. In 1987 a law was approved creating a national health system and recommending elimination of the regional level structure of the Ministry of Health and Social Welfare. The country's health system is organized into 25 subregional offices, 23 of which correspond to the states, and 130 districts, which correspond to municipalities and parishes. The latter are considered local health systems.

English-speaking Caribbean. In a meeting on primary care held in Saint Lucia in 1981, the countries of this subregion committed themselves to implementing the primary care strategy with an interdisciplinary, intersectoral, and community-oriented approach. In the last five years activities to strengthen local health systems have intensified, while decentralization has been promoted. The countries agree that decentralization of the political and normative aspects will enable the sector to distribute its goods and services equitably among local systems.

In 1989, the Declaration of Tobago reaffirmed the commitment to achieve health for all by the year 2000 through the primary care strategy and indicated that the provision of quality health services appropriate to the needs of the population will be achieved more efficiently by developing and strengthening the local systems.

In all the countries of this subregion, the political-administrative units (parishes) and the health districts are examples of local development and constitute the nuclei for establishing the local health systems. In the smaller countries, the deconcentration of activities to defined geographic areas has served as the basis for preparing proposals on how to organize the local health systems.

The situation with regard to local health systems in some countries of the subregion is as follows: *Barbados* has 11 local health systems, corresponding to the areas covered by the various polyclinics; *Guyana* has 10 decentralized administrative regions, which include health

services; *Jamaica* has four regions with 14 parishes; and *Trinidad and Tobago* has nine counties that are subdivided into health districts.

North America and the Latin Caribbean. The diversity of the countries making up this area, as well as the variety of experiences currently unfolding, precludes the identification of a common strategy. All the countries, however, are undertaking the development of local health services, aimed at achieving equity and improving the efficiency of national systems. An overview of the situation in each country follows.

Canada. The local organization of health services is based on the private and social security health services, in coordination with the provincial services, adapted in each province and in each municipality to their respective peculiarities and specific health needs. This experience makes it possible to observe the operation of integrated health care models with the participation of the private subsystem, social security, and the State, in which the local community plays an important role in management of the services.

Cuba. This country's model of health care, which is based on decisive participation of the State in planning and managing services, has resulted in broad coverage of the population and major improvements in health. Recently, the model has been completed with the incorporation of the family physician as the key factor in providing good, adequate, and efficient services. The health team, organized around the family physician and in close contact with the community, is coordinated at the municipal level and supported by the polyclinics and reference hospitals.

Dominican Republic. The health system is organized into eight health regions, which are called health areas. Strategies set forth by the national authorities include administrative deconcentration and decentralization and regionalization and strengthening of local health services. The country is experimenting with defining, formulating, programming, and evaluating the local health system development in three health regions; that process is expected to be extended to the remaining regions.

Haiti. The health system is organized into four health regions, which cover the nine political-administrative provinces into which the country is organized. These regions are divided into 15 districts, some of which are subdivided into subdistricts. Regionalization has been in effect since 1983, when decentralization was initiated to achieve more rational resource distribution and utilization. Successes include intersectoral integration and community participation.

Mexico. Restructuring the legal framework of the health sector began in 1982, and the General Health Law was promulgated in 1984. The main strategy is to strengthen the states' activities through gradual decentralization of responsibilities from the central level. Decentralization of the Secretariat of Health had been extended to 12 states by 1988; in this process health care services were gradually transferred to the states.

In each state activities have been deconcentrated to the health jurisdictions created, which are based on the municipalities. Thus, there are 245 jurisdictions that can constitute local health systems; at present, 32 have been selected to further the experience.

United States of America. State and especially county services have undertaken major public health activities, targeting health promotion and protection. The central level coordinates with social security and private institutions as part of negotiations on financial issues. Organizations that promote health, along with service providers oriented to comprehensive care and to highlighting promotion and prevention for defined population groups, can be considered alternatives, in some circumstances, for achieving equity, efficiency, and effectiveness in the local health systems.

Community Participation, Health Promotion, and Health Education

The aim of community participation, health promotion, and health education is to provide people with the means to exercise greater control over their state of health in a manner that permits them to build the kind of life they desire. When people have increased control over their own resources and those in their environment, they also are able to gain more control over decisions that directly affect their lives.

The process of community participation in countries of the Region has been influenced during the last quadrennium by increasing democratization. At the same time, economic conditions have led to greater inequality in the distribution of resources, with the result that the largest and poorest segment of the population has little or no access to formal health care services. Countries, therefore, have focused their primary health care efforts on an attempt to bring basic health services to all people, using community participation both to reach people more effectively and to stimulate a sense of individual and community responsibility for preserving and improving health. Recent government policies have demonstrated a

recognition that the goals of health for all cannot be realized through the efforts of the health sector alone, and the governments have developed policies and programs to strengthen delivery of services that will affect health conditions at the local level. Health promotion activities are increasingly concentrated at the community level in support of the following basic principles: the right to be healthy, equity in health, community participation and intersectoral collaboration in health promotion, and participatory research. Health promotion has been one of the major catalysts in efforts to mobilize all relevant institutions and the people themselves on behalf of better health in its broadest sense.

In line with these ideas, the "Ottawa Charter," which was drafted at an international conference on health promotion in November 1986, advocated movement toward "a new public health" by encouraging the building of "healthy public policy." Strategies to achieve this goal include increasing intersectoral collaboration, creating supportive environments through a socioecological approach to health, strengthening community action by empowering communities to take greater control over their own endeavors and destinies in relation to health, and developing personal skills to increase people's options regarding health.

In order to reinforce the primary health care approach, Member Countries have recommended a strengthening of local health systems, with particular attention to community participation efforts. Great importance has been placed on the need for health services to respond more adequately, both quantitatively and qualitatively, to local needs. Countries expect that the formal health sector will be the catalyst for those processes.

The principles of mutual responsibility and accountability for health are applicable to every country, and the health promotion concept has great relevance to the countries of Latin America and the Caribbean. During the last few years, 15 countries of the Region (Barbados, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guyana, Honduras, Jamaica, Mexico, Trinidad and Tobago, and Venezuela) have cooperated in the collection of baseline information about the situation of community participation in health. This information has been very helpful in determining what factors have the greatest impact on community participation and what issues are most important for the countries of the Region to confront in order to make community participation a viable component of strategies to improve health conditions at the local level. These countries have contributed to our knowledge about types and degrees of community participation in activities that meet community needs and priorities; about the characteristics of communities that promote or inhibit community participation; and about the dimensions of community participation. These subjects are discussed in more detail below and in Tables 2 and 3.

Types of community participation include planning, implementation, and evaluation of activities. Planning involves definition of needs, objectives, and strategies; adoption of decisions with regard to services; and determination of ways to obtain and use resources. Implementation means administering resources and personnel, as well as obtaining resources and helping to carry out activities. Evaluation may include either formal or informal ways of finding out the community members' opinions with regard to health activities.

The degree of community participation in health can be classified in one of three general categories:

- *Utilization:* Use of the institutional health services by the community, without it having any direct input into or providing feedback about their design or implementation. In and of itself, utilization is not true participation, but it is a prerequisite for it; if services are not being used, the possibility of participation is remote.
- *Cooperation*: Cooperation of the community with health initiatives that are planned by an "outside" agency or institution (one that is not composed of people who live in that particular community). Community cooperation may include freely giving labor, funds, or materials, as well as assisting in carrying out plans and programs that already have been developed by the mentioned agency or institution.
- *Intervention in decision making*: Community participation in the planning, administration, and implementation of health activities and programs. Implied in this type of community participation is a certain degree of commitment by the community to take responsibility for identifying health-related problems and contributing to the development and implementation of solutions. In this case, the role of the "outside" agencies and institutions is that of cooperating with community initiatives.

Inherent contradictions exist between the orientation and structure of most government health systems and the conditions necessary for community participation. Most health systems are based on a medical concept of treating patients and curing disease, which assumes a paternalistic doctor-patient relationship and deals with individual cases. A participatory health care and health promotion system implies utilization of a preventive approach, consideration of environmental and social conditions, incorporation of group action, and development of a partner relationship between health personnel and communities. It remains to be seen how such contradictions can be resolved.

There are substantial differences between the policies developed to promote and support community partici-

TABLE 2

Dimensions of community participation (CP).

Dimension of participation	Type of community	
	Some degree of participation	Participation limited to cooperation and utilization
Mechanism and form	Mechanism is created or accepted by community and accessible to it.	Mechanism is absent or, if it exists, is imposed, inadequate, or inaccessible to community.
	Participation predominantly collective.	Participation predominantly individual.
	Participation continuous.	Participation sporadic or only at initial stages.
	CP spontaneous and requested by community.	CP only at request of the health system or authorities.
Breadth	Women's role important.	Women's role only as users of health services.
	Mechanisms exist for wide participation (e.g., assemblies, etc.).	No mechanisms exist for wide participation in health field.
Fields	Community plays some role in planning and decision making.	Minimal or nonexistent role in planning and decision making.
	Community has a role in administering activities, resources, and/or community health workers, as well as providing resources, spreading information, and constructing installations.	Community role largely limited to providing resources, spreading information, and helping in construction of installations.
	The system considers the community's opinions.	The opinions of the community have no effect on the system.

TABLE 3

Factors that influence community participation (CP).

	Encourage CP	Impede CP
Health system factors	Favorable attitude of personnel toward CP.	Negative attitudes of personnel; cultural insensitivity.
	System provides training to members of community health committee on group dynamics and administration.	Lack of understanding of the objectives of CP.
	Sufficient personnel and resources.	Insufficient personnel and resources.
Community factors	Recognition by the community of its responsibility for health and development.	Attitude on the part of the community that health is the domain of experts and that government alone is responsible.
	Presence of dynamic managers.	
	Consciousness of the community of its rights.	

pation and the reality expressed in activities, approaches, technologies, and attitudes of the various social and health institutions. There also seems to be a lack of agreement between the stated policies on community participation and the understanding of these concepts on the part of health personnel and members of different institutions and social groups.

In principle, most countries agree that the community should play an active role in planning, implementing, and evaluating health activities. However, in reality, com-

munity participation is seen by most health personnel as a supplement to the health care system—a means to enlist additional cooperation and resources to support the system's objectives and program, on its terms and under its control. At the same time that these systems recognize the need for greater community responsibility for health, most of them are still not prepared to promote or, in some cases, even to accommodate such participation.

Another major issue is that of reconciling the priorities of the community and those of health professionals, for in many cases the health system's assessment indicates urgent health problems which are not recognized by the community. The reverse can also be true. Ways to resolve this dilemma need to be explored, as imposed solutions to unrecognized problems are not usually effective.

Many people working with the health services in the countries have begun to recognize that a relatively long period of time will be needed to achieve effective community participation. Substantial costs will also be involved, occasioned by needs for training and supervision, as well as an inevitable increase in demand for health services.

One of the implications of decentralization of health services is a reallocation of resources at the local level. It will be important to observe how much flexibility local centers are given in setting priorities, in responding to community priorities, and in developing participatory needs assessments as a part of the decision-making process of resource allocation.

Communities can be characterized as to whether there is active or passive participation, based upon factors inherent in the particular community and in the way the health system is structured. In communities where there is more active participation, governments have identified within their health systems a policy that favors community participation and a structure to support it. In almost all the countries, grass-roots organizations exist that are willing to discuss health problems and solutions with people in the health systems. Each community has its own organized mechanism: an "integrated committee" (Mexico), "development council" (Colombia), or "health committee" (Costa Rica, Dominican Republic). Many countries have done inventories of all the local community groups and organizations in selected areas, which will serve as the basis for developing collaborative efforts in health. In actively participating communities, participatory methodologies are being applied, and health personnel are trained in their use. Frequently, in such communities, the health care system personnel are from the community in which they work, and they are responsible to their communities for their actions. These communities also demonstrate that health is among their priorities. There is significant participation on the part of women, and the community has a role in planning, implementing, and/or evaluating health activities and programs. Such communities are likely to be urban or recently established.

In communities where the participation of the population is limited solely to cooperating with or utilizing the health services, the health system is characterized by not having implemented community participation policies or by having a structure that is inconsistent with such policies. The health personnel tend not to have been trained in participatory techniques, and they tend to live outside the community in which they work. The communities tend to either have their health needs met or simply do not consider health among their most pressing priorities. Participation of women is solely in the capacity of users of the health services, and the community does not play an active role in planning, implementing, or evaluating health activities or programs. This pattern often applies to rural and/or traditional communities.

Community participation is most likely to occur when there is congruence between the health system's and the community's interest. It is furthered when the system helps the community solve its own problems by increasing access to resources and knowledge and by reinforcing the permanence and self-sufficiency of health promotion efforts by working through the community's own mechanisms. Most health systems assume that it is the community that must change its behavior—the health system is credited with the successes and the community is blamed for the failures.

Although the new emphasis governments are placing on the strengthening of local health systems is helping to encourage local responsibility, more attention should be given to local policy and structural changes in the health systems. This implies a change in the local health power structure in order to guarantee agreements between the institutional and community systems on interests, perceptions, and expectations. Only in this way will long-lasting impact, permanence, and relevance to the special characteristics of each population be achieved. This task will be most difficult in those countries with large indigenous populations or with very distinct social classes based on ethnic, religious, cultural, or economic characteristics. However, countries are beginning to recognize that *ad hoc* community participation—although it can develop spontaneously in response to local circumstances—cannot last, grow, or have a wider impact if there is no support from the system. Accordingly, the health system must allow room and flexibility for real community responsibility and control. At the same time, countries are beginning to recognize that it is equally important that the communities themselves acknowledge their responsibilities and rights in regard to health, and that they voice their concerns and perspectives as individuals, through selected leaders, or through organized community groups.

Most countries agree that in order to improve relationships between the health sector and the community and to create conditions that will promote mutual participation in health, it is vitally important that health personnel become sensitized to a community's priorities, needs, and specific characteristics, and that the community become empowered by having the information and tools necessary to take appropriate responsibility for its own health and development. These goals imply effective use of the latest health education approaches, strategies, and technologies.

The purpose of health education and communication strategies is to provide knowledge, motivation, and skills to enable people to select intelligently from various options, and to recognize the consequences of their choices. Another purpose is to help people understand how they can tap into resources that will facilitate following through with the options and actions selected, as well as to develop an environment that will support these choices. Health education within health services institutions covers a wide range of activities, but in general all the countries make use of the traditional health education methods of mass communication, audiovisual materials, photo and comic books, didactic conferences, lectures, and other similar activities carried out in health centers, schools, churches, and other community institutions.

In certain countries, community involvement in health education activities is encouraged by way of theater, songs, fairs, and health days. House-to-house visits are also being conducted, principles of group dynamics are being used, and community members are being trained in health promotion. More and more countries are recognizing the need to include environmental conditions in the scope of health promotion.

Over the years, a widespread polarization has occurred within the countries, whereby traditional interpersonal education practices are viewed as separate from, and even in competition with, the so-called mass media approaches. The first and most important step in developing effective strategies for health education and communication is to bring these forces together and focus them on a common purpose. Where it remains, this dichotomy presents a formidable obstacle.

Communication in support of health promotion raises a number of ethical issues in some countries. Persuasion is an essential component of any effort to change health-related conditions and behaviors. However, the line between appropriate persuasion and inappropriate manipulation involving half-truths or untruths (as is sometimes practiced in commercial advertising) can be very thin. It is also important to recognize that when the responsibility and power of the community to take care of itself are strengthened, responsibility is not removed from the health system. On the contrary, the health system's responsibility becomes greater in terms of understanding the social, political, economic, cultural, and physical environment in which people live, and finding creative ways to improve their health-related choices.

In spite of these difficulties, successful health communication efforts are increasing in number and scope. The most effective experiences are "client-centered," based on careful assessment of the target audience. They employ a variety of methods and approaches, and they engage a wide range of credible sources. They are sustained over time, in contrast to the "one-shot" all-out campaign. In short, countries are learning that the mere acquisition and use of communication and education technologies are not sufficient to produce the desired outcome; it is also necessary to apply the techniques appropriately, to provide follow-up, and to evaluate the results.

Managerial Capacity of the Health System

Planning and Programming in the Health System

In light of the uncertainty caused by the sociopolitical situation in the countries of Latin America and the Caribbean and given the severity of the economic crisis and, consequently, the limited usefulness of formulating medium- and long-term plans, it became necessary to draw up new public policies and to undertake strategic planning. These public policies are intended to provide immediate responses to sociopolitical needs, as very swift actions are required to reduce political tension and alleviate social needs. Strategic planning, included in the public policies, entails developing analyses and instruments that make it possible to respond adequately and rapidly to social conflicts and uncertainties, as well as to situations that may arise as a result of the prevailing circumstances, which may place major limits on the governability of the sector. This aspect of strategic planning does not include its other objectives, namely, promoting particular scenarios and other prospective techniques, which so far have been developed only to a limited degree in the Region, except in Canada and the United States.

The countries have used various conceptual and methodological approaches to implement strategic planning. Among the most significant advances of the 1985–1989 quadrennium is the more widespread understanding of the importance of epidemiology and of the need for a closer relationship among epidemiologists, administrators, and planners. Also closely related to planning is application of the risk approach and epidemiology to

evaluate health technologies; such applications allow for more consistency among needs, the satisfaction of those needs, and available resources. The risk approach in local planning makes it possible to identify special population groups, especially those that are most vulnerable, so that efforts can target those groups, thereby contributing to the reduction of inequities in health service coverage.

Externally financed projects have also played a role in the countries' planning process. Investment projects and, in some cases, action-oriented research, often resulted in planning that assured sound use of the investments. The results of this planning need to be evaluated, however, for in many cases their impact was limited and the relative advances accomplished disappeared when external financing stopped. Two benefits that did result from such assistance were manpower training and technology transfer.

Some countries continue to use traditional approaches of standardized accounting of the services' needs and available resources, along with conventional strategies of local programming. Several countries, however, are making use of newer approaches—focus on high-risk population groups, use of instruments to analyze the network of services, consideration of new styles of participation, and identification of mechanisms to implement the processes of decentralization and deconcentration. Local programming has been recognized as a basic pillar for strengthening and developing local health systems.

Administration and Operation of the Health Systems

The economic crisis, and the consequent need to establish policies for adjusting financing and expenditure of all the sectors, continued to have a major impact on administration of health systems in the countries of the Region, especially in the less economically developed ones and those with the largest external debt. Payment of the debt service and the commitments entered into by the countries with the international lending agencies and the borrowing banks made it necessary to develop a sector profile in each country, which was modified when the terms of payment were redefined. A number of sector changes resulted, among them debureaucratization, privatization, restriction of public spending, administrative reform, decentralization, and, in general, changes in all aspects identified with the reorganization and modernization of the State.

The efforts of health authorities to develop managerial approaches, seek new sources of financing, and attempt in some countries to privatize and in others to share various services with the private sector, could not, however, meet the challenge posed by the growing health needs and rising demands for greater and more complex health services.

The economic crisis also compounded problems related to urbanization and accelerated the marginalization of human groups whose needs have yet to be met, the emergence and mass-scale adoption of new technologies, the revolution in expectations and demands, and the aging of the population. In addition, political democratization has translated into growing pressure from the population to achieve some form of social control in the provision of health services. Finally, State responsibilities have become progressively more complex and diversified.

The decline in the health systems' operating capacity and efficiency is due largely to poor leadership and management, aggravated in turn by the demand for greater accessibility to services, in light of the already-mentioned requirements of equity, impact, efficiency, and participation. In addition to the increasing diversification of people's expectations and demands, the sector now constitutes a mosaic made up of public, semipublic, and private institutions which in many cases are not sufficiently coordinated; whose policies are often ill-defined; and which, in practice, are often contradictory and in competition with one another.

The main limitations of the health sector in Latin America and the Caribbean have to do, above all, with the following: the health debt, reflected in a great many unsatisfied needs in high-risk population groups; insufficient response of the institutions to prevailing problems; and lack of equity, effectiveness, and efficiency in the health service coverage. These limitations imply an increasing gap that makes it more difficult for the health systems to attain the goal of health for all by the year 2000. The countries of the Region recognize that national health systems will have to accelerate the processes of change if they are to be able to apply the primary care strategy and make health for all a reality, and also that the best means of transforming those systems is by developing and strengthening local health systems.

The countries' efforts to transform their health systems are focusing on the following areas:

- Strengthening the complex political and technical processes for setting priorities; allocating resources; and implementing activities based on people's health needs, their risks, and the appropriate technologies, within the context of their respective frameworks for socioeconomic development and through strategic planning.
- Redefining the basic aggregates of the organizational module and radically reformulating the process of change at the hospital level to meet the requirements of equity, efficiency, and effectiveness. Such a redefinition calls for a new understanding of the territorial network and closer coordination between ministries and social security in-

stitutions, taking into account the role of the private sector, while seeking to rationalize expenditures so as to guarantee not only efficiency and effectiveness but also equity in the utilization of resources.

• Providing local levels of the health system with the management tools that will help to increase their capacity for decision making and for coordinating with other social and institutional entities, and which facilitate community participation.

Within this frame of reference the countries have carried out activities aimed at increasing the capacity of the sector and its institutions to manage and provide leadership. Development of the managerial capacity of the local health systems, which is the principal realm of such managerial action, was analyzed through processes of institutional development. Administrative structures and systems were adapted, and programs for managerial training were initiated in various academic institutions and services of the Region, especially since 1987.

In analyzing the review and adaptation of the logistical, technical, and administrative systems, experiments were carried out introducing strategic foci. These experiments have made it clear that changes aimed at developing local health systems will necessarily affect and imply restructuring at other levels. This means that the managerial training required for such development should be planned as a systemic action with varying impacts at the different levels.

The countries seek to develop managerial capacity of their health institutions, including local health systems, in order to better solve health problems and to assure interinstitutional and intersectoral coordination.

The Inter-American Development Bank, the World Bank, and other cooperation and development agencies are financing projects involving the processes of administrative development in the countries. UNDP, for instance, financed the project to develop the managerial capacity of health services in Central America and Panama, where health services need to be strengthened and their operational capacity developed to overcome the factors limiting service accessibility and to remove constraints to meeting growing demands in the face of increasingly scarce resources. This will require that the managerial capacity be developed both as a component of operating capacity and as a determinant of the process of change implicit in the effort to achieve the required increase. The technical cooperation provided to the countries of Central America in this regard has enabled them to participate in the process of administrative development, expanding on and reconciling the respective concepts, approaches, and strategies.

Most of the countries of the Region are attempting to increase operational capacity by developing managerial capacity, in terms of organizational development, institutional direction, decentralization and local health systems, managerial information systems, financial planning, and managerial training. This process of developing managerial capacity requires, in accordance with the strategies adopted by the countries, adequate support from the administrative systems, along the following lines:

• A managerial information system for the area in which the local health systems operate, which specifies the problem situations and contributes to identifying solutions through epidemiological and administrative analyses as a means of supporting managerial action.

• A personnel system that recruits, maintains, and develops a work force with the necessary knowledge, skills, and motivation to achieve the objectives of each particular agency and of the local health system in general and that creates at the same time the organizational conditions that facilitate human resource development.

• A supply system for obtaining the necessary goods and services—in adequate volume and quality, at the most reasonable cost, and in a timely manner—to support implementation of the activities in each agency of the local system.

• A financial system that makes it possible to collect, distribute, carry out, and control financial resources in the amount needed and in a timely fashion.

• A system of physical resources for planning, obtaining, operating, and maintaining the physical resources that are essential for ensuring sufficient and operative installed capacity.

Information Systems

Each of the countries realizes the need to rationalize decision making and the importance in that regard of a sound information system. The following situations, however, prevail in the organization of information systems:

• Manual statistical systems are used in statistics units that handle data on ambulatory and hospital services. These data originate at the local level and are forwarded to the central level, and, in general, represent great volumes which for the most part are of little strategic significance.

• Feedback from the central level to the local level is not systematic, and use of the information is generally limited. At the local level data are utilized in programs that have standards for implementation and indicators for follow-up and evaluation, but whose potential usefulness, in the view of the local personnel, is limited, in part because many decisions are made at the central level.

In some cases, however, the real problem may be one of resistance to change or other underlying managerial shortcomings.

- Systems for reporting communicable diseases use means of communication such as the telephone, telegraph, or pouches to facilitate the flow from the local to the central level to allow the central level to quickly take stock of the national situation. The problem, however, is that the local level often attributes more importance to the data it is transmitting than does the central level where decisions are made. Moreover, these systems are usually not coordinated with the administrative subsystems.
- National malaria control programs have information systems that are epidemiologically and administratively oriented and that handle large quantities of data flowing from the local to the central level. Because of its verticality, the information is not articulated with that produced by other programs operating at the regional level, which prohibits comprehensive analysis of decisions at the regional and local levels.
- Drinking water and environmental sanitation programs have information systems that have been designed to support the planning, programming, implementation, and evaluation of specific projects and which are handled separately from the rest of the system.
- Special systems have been created to monitor and evaluate the Child Survival Program, whose priority is to reduce the leading causes of child morbidity and mortality and which uses 17 indicators selected by the countries of the Region. Financially supported by UNICEF, the program has developed unconventional information methods to facilitate and expand informed decision making. There is a risk, however, that these methods will result in yet another vertical system that does not relate adequately to the other health information systems.
- More or less complex information systems are being developed for the administrative area, supported by the use of computers for preparing centralized data or for activities that depart from information processing. Components have been partially developed for human resources, maintenance, supplies, accounting, and budget, but oftentimes these are applications that have little to do with biostatistical information and service programming. In general, feedback to other levels and its use in decision making are very limited.
- The production, productivity, resources, and cost systems deserve special comment. These systems were implemented in some hospitals of the countries in the 1970s and provide the hospitals with a comprehensive picture of the problems they face. Despite the merits of this managerial approach and its potential for application at the local level, it is used only to a limited extent, apparently because of the lack of motivation caused by organizational problems related to the limited degree of coordination between information and decision making and, in general, because of the lack of managerial capacity. Furthermore, the systems are constrained by a lack of commitment to decentralization policies and limited development at the local levels, whose involvement is required if the systems are to work.

Managerial information systems, in general, are poorly understood, as there are many and varied approaches to the information/decision-making process. The traditional approach is to keep statistics units with statistics systems, which related very little to administration; and, although useful, they are insufficient for orienting the administration toward a comprehensive decision-making process.

Another major trend is to set up computer units that are not planned on a timely basis at the decision-making levels, with large investments made in computer equipment for centralized data management. In some cases, this profusion of computer units has been due to partial processes of institutional development and results in the acquisition of a wide variety of software and hardware that sometimes is incompatible among agencies and that can be peripheral to institutional needs and possibilities.

The countries of the Region have expressed their political commitment to develop management information systems, and legal and administrative provisions have been undertaken for establishing integrated information systems.

Methodologies and instruments must now be developed that change managerial and technical attitudes about the application of advanced management information systems, so that the decision-making processes that guide and direct the health services can be rationally administered.

Human Resources

The health sector is a major source of employment in the Region, although the extent to which it is varies from country to country. During the second half of the 1980s, for example, approximately 8 of every 100 workers in Canada, 6 of every 100 in the United States of America, and 3 of every 100 in Brazil worked in the sector.

Workers who directly or indirectly provide health services are an ever-increasing proportion of the total work force in the countries, an increase that reflects the economic and social development process itself. This trend is seen in Brazil, Canada, and the United States, where such information is collected, and can be assumed to have occurred in all the countries in recent decades, although systems of qualitative and quantitative information about human resources generally need to be improved. Changes in personnel classification, as happened with nursing aux-

iliaries in Brazil, can result in significant differences in what can be inferred from that information.

In addition, unreliable data and traditional data collection approaches make it very difficult to adequately analyze human resources in health. Despite these difficulties, present supply and demand trends in the health work force, changes in the organization of health work, and the training of professional workers as one of the determinants of supply can be examined in an attempt at a broad analysis.

Supply and Demand in the Health Work Force

Trends in labor supply and demand in the health sector are difficult to comprehend, not only because information is incomplete but because the socioeconomic realities that determine these trends are so varied and complex. The supply and demand increased sharply during the 1970s throughout the Region, regardless of the different countries' stage of development, and the rates of increase in the number of graduates and schools, as well as the employment of all categories of workers, reached unprecedented levels. The relative global economic bonanza that extended from 1965 to 1975, the pressures of demand, and the State's active role in expanding social policies were the main causes of this expansion, which increased the health service coverage of many segments of the population.

Today, the supply and demand situation in the health labor market is more complex, since it is greatly influenced by how and how much the socioeconomic crisis affects the countries and their social policy priorities. The presence of two strong, opposing trends makes it difficult to analyze the situation. One trend, long term and structural in nature, relates to the growing number of people working in the services sector, especially trained and untrained health workers, and reflects the need to meet rising and varying demands for health services that can be satisfied to a greater or lesser extent according to public expenditure priorities and the people's disposable income. The other trend is situational in nature and has to do with the economic recession and ensuing adjustment policies, which result in restrictions on investments and expenditures that strongly affect the social sectors. The reduced investment in health slows down the growth rate and, consequently, the demand for various kinds of health services. At the same time, underemployment and unemployment rise, prompting corporate entities to urge the government to undertake policy measures to restrict the training of qualified personnel. Often this results in less training of physicians, who, generally speaking, have the best organized labor unions. In some countries, policies limiting the training of physicians and other professionals were put into practice during the second half of the 1970s; in the 1980s such policies evidently found more justification since slower growth in installed capacity was added to those limitations.

This situation has become fairly confused in the Region today, not only because of differences in the countries' stage of socioeconomic development but also because of variations in when and how the crisis took effect in each country, and the confluence of political, social, and economic factors. Some countries have not experienced the general trend toward decreased growth in health work. In Cuba and Nicaragua, for instance, both the supply and demand for the health work force continue to increase, whereas in Canada, a relatively stable economy and a universal social security system allow for a policy of controlled and planned expansion of health work, with emphasis on balancing medical specialties and the various categories of the health team. While the health employment growth rate increased notably in Canada, in the United States of America the increase in health employment between 1980 and 1985 was less than the national average growth in jobs, which reversed the previous decade's trend.

In Brazil the supply of health workers increased by 100% between 1970 and 1980, whereas the total work force increased by about 50%. Although the 1980 census data for that country are still not available, growth has slowed, especially among physicians and nurses' aides, who together constitute close to 60% of the total health work force. At the same time, and despite the crisis, federal and state institutions have expanded their employment capacity in recent years, owing, in large part, to greater political emphasis given to the public sector's role in rationalizing the care system.

The real effect of the crisis and the resulting adjustment policies on the entire health work force is still largely unknown. Apparently, it has not experienced significant reductions, at least in absolute numbers (Table 4). It may be, however, that those more involved in directly producing health services are replacing professionals who work at the infrastructure level and in supervising care.

The pace of growth in the number of physicians is decreasing in some countries, which reflects fewer vacancies and fewer graduations from medical courses during the 1980s, as compared to the previous decade. The reduced demand for medical education in the countries could create a future supply deficit owing to both the natural aging of active professionals and increased sector investments once the economic crisis has passed.

Graduate nurses and personnel in other nursing categories are in short supply, especially in Latin America, according to available information—notwithstanding the goal of basing health care activities on health teams rather

TABLE 4

Health professionals by category and by country, around 1988.

Subregion/country	Physicians		Dentists		Nurses		Nursing auxiliaries	
	Year	No.	Year	No.	Year	No.	Year	No.
Andean Area								
Bolivia	1987	1,730	1987	206	1987	891	1987	2,715
Colombia	1988	29,353	1988	13,815	1988	11,940	1988	31,125
Ecuador	1987	9,901	1987	1,269	1987	2,771	1987	12,082
Peru	1987	20,031	1987	5,023	1987	15,748	1987	38,850
Venezuela	1987	28,400	1988	7,403	1987	14,398	1987	40,102
Southern Cone								
Argentina	1988	96,000	1988	22,500	1988	17,118	1988	21,820
Chile	1983	10,087	1984	3,100	1984	3,355	1988	28,794
Paraguay	1988	2,536	1988	1,017	1988	565	1988	2,494
Uruguay	1984	5,756	1984	2,300	1984	1,500	1984	1,500
Brazil	1988	169,488	1988	97,675	1988	42,347	1988	95,217
Central American Isthmus								
Belize	1987	85	1987	12	1987	230	1984	57
Costa Rica	1988	2,539	1984	790	1984	1,300	1984	4,100
El Salvador	1988	3,200	1988	800	1988	1,500	1984	3,398
Guatemala	1988	2,171	1988	251	1988	1,225	1988	6,971
Honduras	1988	2,666	1988	416	1988	1,051	1988	4,506
Nicaragua	1988	1,942	1988	340	1988	1,120	1988	5,172
Panama	1984	2,167	1984	410	1984	2,172	1984	3,303
Mexico	1987	130,000	1986	4,925	1986	44,046	1986	64,440
Latin Caribbean								
Cuba	1988	31,229	1988	6,134	1988	57,773	1988	816
Dominican Republic	1988	7,332	1988	689	1988	723	1984	4,675
Haiti	1988	887	1988	85	1988	691	1988	1,571
Non-Latin Caribbean								
Anguilla	1988	6	1984	1	1984	19		...
Antigua and Barbuda	1979	32		...	1984	145	1979	144
Bahamas	1986	187	1984	31	1984	944	1984	166
Barbados	1984	225	1984	25	1984	744	1984	390
British Virgin Islands	1988	12	1988	2	1984	53	1988	31
Cayman Islands	1988	35	1988	9	1984	72	1988	48
Dominica	1984	25		...	1984	204		...
French Guiana	1984	111	1984	24	1984	688	1984	631
Grenada	1988	51	1988	4	1984	60	1988	39
Guadeloupe	1984	459	1984	102	1984	997	1979	65
Guyana	1984	125	1984	11	1984	288	1984	599
Jamaica	1987	330	1987	54	1987	1,974	1987	1,355
Martinique	1984	467	1984	113	1984	1,091	1976	320
Montserrat	1988	7	1988	1	1984	40	1988	15
St. Kitts and Nevis	1988	25	1988	5	1988	190	1979	6
Saint Lucia	1988	68	1988	9	1988	196	1988	81
St. Vincent and the Grenadines	1988	40	1988	2	1988	208	1988	138
Suriname	1984	306	1984	22	1988	922	1988	383
Trinidad and Tobago	1984	1,213	1984	104	1984	3,346	1984	1,175
Turks and Caicos Islands	1984	5	1984	1	1984	32	1979	2
North America								
Bermuda	1988	57	1988	23	1988	642	1976	214
Canada	1988	57,405	1985	13,027	1987	241,759	1984	85,539
United States of America	1987	585,597	1988	147,300	1988	2,033,000	1988	608,700

than just on physicians. In 1989, Argentina and Brazil had a ratio of 0.5 nurse (of any category) to each physician, while in the English-speaking Caribbean the ratio was five nurses to each physician. The limited participation of nurses in health work generally may not be due to a problem in their supply but to the perpetuation of health services based on a physician-centered model. In that respect, an investigation carried out by the Federal Nursing Council in Brazil in 1985 indicated that only one new job was created for every three new graduating nurses.

The absolute and relative deficit in nursing personnel is a particularly serious problem in light of the growing needs for primary care and care of the elderly. To stimulate the supply of nursing professionals, the Governing Bodies of PAHO and WHO have approved resolutions urging the countries to upgrade the profession both economically and socially. In many countries, most of the nursing work force consists of auxiliary personnel and untrained workers (aides). During the past decade, however, the increase in auxiliary personnel has been proportionally less than that of professional workers, despite the fact that in many countries there are explicit policies giving priority to the training of technical and auxiliary personnel.

On-the-job training methodologies for untrained nursing auxiliaries are critical to the realization of the health-for-all goal and have been demonstrated to work in Brazil, Colombia, Guatemala, Mexico, and Peru, among other countries. Until now there has been a tendency to think that the work of auxiliary workers is transitory and ends once enough qualified workers are available, whereas, in fact, auxiliaries have their own specific activities to perform and provide essential support to many activities performed by professional workers. Optimal use of auxiliary workers requires proper supervision by professionals, to enable them to improve their performance by participating in training and continuing education.

Information is very scarce about the other health occupations. The training of dental professionals has increased slightly in countries that submitted data on dental education. The Region has an average of 2.6 dentists (with extremes of 11.0 and 0.2) per 10,000 inhabitants, most of whom work in urban areas and, within those areas, in the most affluent districts. In addition, because of the way in which care is organized and the Region's characteristics, the supply of dental services is basically private, and because of the limited purchasing power of much of the population, which depends on free services provided by ministries of health or social security, most activities are deforming rather than restorative. Large numbers of other professionals—dental nurses, hygienists, medical technicians—belong to the dental work force, chiefly in the English-speaking Caribbean, Colombia, Cuba, and Mexico. In the Central American countries and in Peru, Uruguay, and Venezuela there are fewer professionals of those types.

It is possible that the real decrease in wages for health sector workers will result in their seeking several jobs as a way of surviving, with the serious consequences for health care practice that this situation implies. Moreover, income differences between the various worker categories, and even within the same category, lead to professional dissatisfaction and undermine health team relationships. These problems, however, have not been studied to determine their possible effects on the quality of care.

Organizational Aspects

Concern with problems stemming from the present crisis has provoked interest in understanding how and why different types of health workers enter the labor market; approaches used vary greatly, from fixed-time salaried contracts in public and private institutions, to a combination of salaried employment and free, autonomous practice, to strictly private practice.

Fixed-time salaried contracts generally occur in countries with centrally planned health systems, while in other countries that situation applies to most health workers, especially nurses and those in the less qualified categories. The intermediate situation—part salaried, part private—occurs among physicians and leads to the phenomenon of multiple jobs, especially in countries with mixed economic systems. The third situation predominantly characterizes practice among the more traditional and consolidated segments of medicine and the practice of dentistry in most of the countries.

The trend toward salaried physicians and dentists is more or less universal, but is stronger and more accelerated for physicians—even in the United States, where it is predicted that half of the medical population will be salaried by about the year 2000. In Brazil and Mexico, 70% of physicians drew their main source of remuneration from salaries, whereas only 30% of Brazil's dentists drew their main income from salaries in 1980. Extreme situations with regard to dentists are illustrated by Honduras, where only 8% work exclusively in the institutional sector, and Cuba, where 97% do.

The economic crisis reduces the population's ability to pay for services directly and thus reinforces physicians' and dentists' change from autonomous private practice to salaried practice. As a result, salaried professional health practice and the stability it represents is being perceived more favorably than before by professional associations. At the same time, new opportunities are arising for intermediate-type medical practice, such as cooperative work, which retains some of the traits of private

practice. This new configuration of the labor market could prove to be a positive outgrowth of the economic crisis, enabling the State to promote equity in the provision of services.

Many different forms of payment for private medical service are found in medicine. Direct payment by the physician's clientele occurs everywhere, but this method is gradually losing ground as it is displaced by intermediary payments by public and private insurance, although such arrangements are less well developed for dentistry. Among the various new forms of payment scenarios are the following:

- A combination of private insurance and direct payment by the patient (for example, the United States);
- Service contracts with a unified social security agency with participation by medical corporations in establishing fees (for example, Canada); and
- Service contracts with multiple social security agencies which involve an intervention by a medical corporation in fixing fees and administering resources (for example, Argentina).

The complexity of situations in which physicians are employed is reflected in the following list of regional trend categories:

- Countries in which the principal employer is the traditional public sector (ministry of health): Bolivia, Cuba, Guatemala, Honduras, Nicaragua, and Peru, among others;
- Countries in which the main direct or indirect employer is a State social security agency: Brazil, Costa Rica, and Mexico, among others;
- Countries in which the principal employers are multiple, corporately controlled insurance agencies: Argentina and Uruguay; and
- Countries in which the private sector is the chief employer: the United States of America.

Training of Professionals

The marked expansion of university training that occurred between 1965 and 1975 in the Region's countries is a phenomenon which seemingly is not going to repeat itself in coming years. This is generally valid for the various categories of workers, but is particularly evident in medicine.

Data available from some countries about the number of medical graduates during the past two decades support this general statement. Countries with a large number of graduates, such as Argentina, Brazil, and Mexico, showed a trend toward a decrease in total numbers of graduates in the 1980s, in contrast to the 1970s. Most of the countries from which information was obtained show no well-defined trends, although some decrease in the number of graduates is seen, except in Cuba, where an increase continues.

In the United States of America, official projections point to a decrease in the number of graduates (from 18,500 in 1986 to 17,900 in 1990). The enrollment of medical undergraduates in that country has also declined, by 23% (from 41,000 in 1977 to 31,000 in 1986).

Another indicator is the number of new schools and faculties of medicine. In contrast to the significant increase that occurred at the start of the 1970s, stagnation in creating new medical schools began in 1975 (Table 5). Still, according to the information provided, there are

TABLE 5

Number of medical schools and faculties in some countries of the Region, 1960, 1975, 1988.

Subregion/country	1960	1975	1988
Andean Area			
Bolivia	3	3	3
Colombia	7	15	22
Ecuador	2	5	5
Peru	3	7	13
Venezuela	6	7	7
Southern Cone			
Argentina	9	9	9
Chile	4	10	6
Paraguay	1	1	1
Uruguay	1	1	1
Brazil	30	75	78
Central American Isthmus			
Costa Rica	1	2	2
El Salvador	1	2	5
Guatemala	1	2	2
Honduras	1	1	1
Nicaragua	1	1	2
Panama	1	1	1
Mexico	22	52	59
Latin Caribbean			
Cuba	1	7	22
Dominican Republic	1	6	12
Haiti	1	1	1
Non-Latin Caribbean			
Guyana	0	0	1
Jamaica	1	1	1
Trinidad and Tobago			1
North America			
Canada	12	16	16
United States of America	86	123	128
Total	196	348	399

Sources: Country reports and Pan American Health Organization, *Health Conditions in the Americas, 1981–1984*, Vol. 1, Scientific Publication No. 500, Washington, D.C., 1986.

applications to open more than ten faculties of medicine in Brazil, mostly in the private sector.

This slowed pace of growth of the health work force results from factors restricting supply, such as implicit or explicit educational policies in many countries that limit increases in the number of schools and admissions to existing courses, as well as the pressure that corporate entities exert when there appears to be an "oversupply" in view of reported underemployment and unemployment; the relative devaluing of medical and other professional incomes because of the increase in the number of salaried workers and the labor market situation, which lower the average income level; and the emergence of new occupations that pay better and represent more attractive options to young people than the health disciplines. In some countries, such as the United States, factors such as the high cost of training and malpractice insurance have an effect.

The quality of training has not been, and needs to be, analyzed in light of the socioeconomic and political context, the health situation, professional practice models, and the structure and standards of health services operation.

A new approach in the context of technical cooperation—the prospective analysis of medical education—has recently been put into practice in Latin America. Applied initially in more than 100 schools of medicine (not necessarily representative), this approach has pointed up the following problems:

- Low level of interaction (programming and evaluation) between the schools and health services in orienting areas of practice;
- Directive and hierarchical overlapping of teaching and service personnel in the sphere of services delivery;
- Undefined professional profiles at different service levels; and
- Physician characteristics that do not meet the population's needs or match future employment possibilities.

All these problems reveal insufficient development of teaching-care integration. An important aspect of this approach involves a change from an educational practice centered on an individual's illness (an eminently biological approach) to an orientation focusing on community health (an approach integrating biological and social aspects). Available information indicates that 13% of medical schools believe their curricula have an orientation that integrates the biological and social aspects, while 49% recognize that such integration is still incipient.

Another variable examined was the influence of the private and institutional medical models on education. Only 15% of the schools were found to be aware of the dominant influence of the private medicine model and are developing mechanisms to reduce its influence.

As for research—the activity that nourishes and guides the educational mission of the institution—data indicate that in only 8% of the schools are research priorities defined on the basis of the population's most important health problems and needs. This finding is similar to that showing that only 7% of the schools conduct research that integrates the biomedical, epidemiological, and social fields; most conduct vertical research.

With respect to financial aspects and budgetary programming, 65% of the schools say they have a limited ability to orient their budgets toward programmatic priorities, and 68% of them have limited access to extrabudgetary sources.

The few data available in some countries about nursing education show no well-defined general trends. Brazil and the United States of America, for example, have had slight decreases in absolute numbers, whereas Honduras, Mexico, and Nicaragua have had small increases. In addition, data on the number of nursing schools show a significant increase before the 1980s in all of the Region's countries. During the following decade Argentina, Brazil, Mexico, and Peru continued to show increases (Table 6).

Although changes were made in the conceptual framework of nursing education, with special attention being

TABLE 6

Number of nursing schools and faculties in some countries of the Region, 1959, 1982, and 1988.

Subregion/country	1959	1982	1988
Andean Area			
Bolivia	2	5	7
Colombia	6	22	22
Ecuador	4	7	7
Peru	8	25	33
Venezuela	4	34	16
Southern Cone			
Argentina	7	69	88
Chile	5	24	10
Paraguay	3	3	3
Uruguay	1	1	1
Brazil	35	57	93
Central American Isthmus			
Costa Rica	1	1	1
El Salvador	2	3	1
Guatemala	1	3	3
Honduras	2	3	3
Nicaragua	4	4	2
Panama	1	2	2
Mexico	7	137	213
Latin Caribbean			
Cuba	1	29	24
Dominican Republic	0	2	7
Haiti	1	3	3
Total	95	434	539

paid to practical experience and students' early introduction to clinical areas and community work, traditional curricular models still exist and hospital training is the general rule. Many schools have identified critical areas for development using the prospective analysis approach. Through a process of diagnosis, reflection, analysis, and planning, the schools have reached the conclusion that teaching institutions need to better integrate with and participate in health service planning, operations, improvement, and evaluation. At the same time, plans are being formulated to promote leadership and research in nursing and to develop new models with emphasis on primary health care. Further, nursing schools are gradually being incorporated into universities, a process which requires that their instructors be more professionally prepared. Incorporation into universities helps raise the social position of the nursing profession and at the same time enhances multiprofessional training.

As in the other health professions, there was a small increase in the number of dental schools—from 156 to 165 in the last four years. In this profession, too, priority has been given to curative over preventive activities, but programs are more oriented toward technological innovations and less toward planning and managing community and school programs. Their orientation is in general aimed at private practice. Some schools of dentistry are trying to develop the field of collective health, though in a vague way. Starting in the 1970s various options in traditional professional practice have been put into operation, and these have been reflected in curricula that include concepts of simplification and development of appropriate technology. Some schools are attempting to make major changes in professional training by putting more stress on training than on information.

An important educational area that is undergoing significant change is continuing education for health professionals. Most of the countries have adopted as a strategy in this field the search for a new conceptual and methodological orientation to dealing with the problems of training workers, above all workers who are already part of the sector's work force. Many countries and national groups have drawn up a framework for this orientation that is founded on considering work as an essential element for learning—an idea on which the teaching-care integration strategy of the 1970s was based. Analysis of work problems is making it possible to transform education into a permanent, integrated, multidisciplinary, and organized process that responds to health workers' real needs.

This proposal has been implemented in Argentina, Bolivia, Chile, some provinces of Colombia, Honduras, some states of Mexico, and Nicaragua. In Brazil, the innovative personnel training movement that has existed for several years was intensified recently in response to the demand for support of health reform in the country. Personnel training is being applied in the Region both to support local health systems and to implement the teaching of epidemiology and administration in different countries. So far there has been no evaluation of the results of this new orientation.

Postgraduate training is of great importance for health services, but no evaluation has been made of its practice and trends in the Region—despite its prominence in the health as well as scientific and technological development policies adopted by governments and international agencies. In the specific area of public health, there has been no increase in the number of institutions or schools in recent years. Nevertheless, how courses are taught has changed significantly, in terms of both content and innovative pedagogic procedures, as in the Health Management Development Program conducted in Brazil with the participation of public health schools and other academic institutions. PAHO, together with the Latin American and Caribbean Association for Public Health Education and the American Association of Schools of Public Health, is promoting analysis of areas that are critical for developing the health system infrastructure and for providing health services, in an attempt to identify subject areas that will facilitate leadership promotion and advanced training in public health.

Physical Health Resources

Inpatient Capacity in Hospital Establishments

The number of beds available in hospital establishments is normally used as an indicator of inpatient capacity. Notwithstanding the apparent simplicity of this indicator, it conceals the lack of uniformity in elements and definitions between countries and even within a given country over time. For this reason, and because of problems that may occur with registration, the data can indicate that changes have occurred that are not in fact attributable to "rationalization" or "expansion" of the existing installed capacity. In order to make "hospital beds" a more precise indicator of installed hospitalization capacity in the health services, adjustments have to be made in some of the elements used for classification.

In some health care establishments that provide inpatient care there is a clear-cut allocation of beds in terms of the basic specialties (general medicine, obstetrics, surgery, pediatrics), their subspecialties, and other categories. However, in smaller, less complex hospital establishments, or those located in areas of low population

density or classified as "regional," "provincial," or "local," beds are not identified according to specialty.

Installed hospitalization capacity provided by the social security systems needs some clarification. For the indicator "beds/population covered" (or insured), one can easily determine the denominator because the registration systems for subscribers and their dependents correspond to a well-defined universe or closed population. However, the measurement of beds poses some difficulties. Social security schemes have a variety of arrangements for making beds available to their subscribers, only one of which is the provision of beds in hospital establishments owned by the social security institutions. Some systems contract for beds with the private or public subsector. Still others have mixed arrangements, which combine the use of social security-owned beds with contracts with other institutions.

This diversity makes it difficult to compile data for the indicator, and hence it is impossible to determine the number of "available beds" with any degree of reliability. This means, in turn, that it is difficult to know the true availability of health services offered to subscribers, since unless the beds/population indicator is adjusted to account for the different variations, it does not truly reflect the magnitude of installed capacity and thus distorts the coverage picture.

For present purposes, the bed continues to be used as the "basic unit" for measuring the installed capacity of the physical resources. However, an effort has been made to modify its definition by adopting the criterion that a "hospital bed" is one that is located in an inpatient unit that guarantees hospital care with basic services for diagnosis and treatment. This definition helps to make the data more uniform by excluding or eliminating all those beds that are known to be installed in health centers and health posts or in primary-level facilities. This clarification should be kept in mind because treating the data in this way produces not only some reductions in the total number of inpatient beds existing in the Region but also a significant variation in the beds/population indicator.

Acceptance of the policy of deconcentration and decentralization by most of the countries in the Region, coupled with recent progress in developing local health systems, makes it necessary to review the indicators of installed capacity, availability of health services, and the degree of their utilization. In territories of small size, rural communities, small towns, and semiurban and marginal urban neighborhoods, the beds/population ratio loses its meaning, and it becomes necessary to establish means of measuring "bed availability" in other geographic areas and the degree of accessibility that those populations have to them.

By matching hospital discharges with the usual place of residence and considering such variables as length of hospitalization and pathology giving rise to the hospitalization, it is possible not only to measure the degree of utilization of available resources on the part of the populations covered by local health systems but also to determine patterns of morbidity and epidemiological profiles.

Of all the beds available in the Region, 53.8% are found in the northern countries and 46.2% in Latin America and the Caribbean (Table 7). A reduction in number of beds relative to the figures for 1981–1984 can be noted, and this difference should be interpreted taking into account the revised definition of beds referred to above.

Table 8 shows the trends in number of hospital beds per 1,000 population in the entire Region and in the subregions, all of which show a decline, but at differing rates.

In North America the indicator went from 9.0 beds per 1,000 population in 1964 to 6.3 in 1984. In Brazil the indicator stabilized beginning in 1967 and began to experience a slight decline after 1978.

The countries of the Southern Cone have generally shown a downward trend, except for recently in Chile, which in 1987 had regained the level—3.6 beds per 1,000—recorded in 1978, as opposed to 2.9 per 1,000 in 1984 (Table 9). Paraguay has the lowest ratio, at 1.4 beds per 1,000 population in 1984 and 1.0 in 1987. Argentina has had and continues to have the highest ratio in the subregion—6.0 in 1964, 6.3 in 1967, 5.4 in 1984, and 4.8 in 1987, with a stable level between 1974 and 1984. Downward trends have been observed in Chile since 1967 and in Uruguay and Paraguay since 1964 and 1967, respectively, although Uruguay began with a rather high level: 6.4 beds per 1,000 population.

The countries of the Andean Area have also registered a decline in the ratio of beds per inhabitant (Table 10). Venezuela has had the smallest reduction relative to the other countries of the subregion; it is also the country in which the index is highest, namely, 2.7 beds for 1,000 population in 1984. The patterns in the rest of the countries are all quite similar to one another.

The countries of the Central American Isthmus show the same general pattern (Table 11), although Guatemala was able to stabilize its downward trend at a value of 1.6 beds per 1,000 population between 1978 and 1987. The rate in Honduras fell to 0.9 in 1984 and rebounded to 1.1 in 1987. Honduras and Belize had the lowest values in the subregion in 1987, while Panama, with an index of 3.2 in 1987, began the period with the highest ratio.

In the three Latin Caribbean countries (Table 12) the case of Cuba is of special interest. While the indicator fell from 5.5 beds per 1,000 population in 1964 to 4.0 in 1978, the downward trend has been reversed; by 1984, the value was 6.1 per 1,000 population, which exceeded its 1964 ratio, and in 1987 the ratio was 5.0.

In the Caribbean the indicator in general exhibits a

TABLE 7

Health service facilities and hospital beds, by subregion and country, 1987.

Subregion and country	1987 population		Health service facilities				
			Total (1987)				
	In thousands	(%)	Hospitals	No. of beds	(%)	Beds per 1,000 population 1987	Beds per 1,000 population 1984
Latin America and the Caribbean	419,138	60.88	12,885	1,067,396	46.19	2.5	2.66
Southern Cone	52,170	7.58	3,432	211,447	9.15	4.1	4.48
Argentina[a]	31,138		3,186	150,000		4.8	5.4
Chile	12,537		204	41,827		3.3	2.9
Paraguay	5,437		42	5,487		1.0	1.4
Uruguay[a]	3,058		...	14,133		4.6	5.0
Brazil	141,459	20.55	5,761	501,660	21.71	3.5	3.6
Andean Area	85,592	12.43	2,313	148,765	6.44	1.7	1.97
Bolivia	6,730		144	8,749		1.3	1.8
Colombia[b]	29,943		910	45,761		1.5	1.8
Ecuador[a]	9,922		380	16,426		1.7	1.9
Peru[a]	20,727		338	30,629		1.5	1.7
Venezuela[a]	18,270		541	47,200		2.6	2.7
Central American Isthmus	26,777	3.89	104	45,846	1.98	1.7	1.73
Belize	170		7	186		1.1	2.5
Costa Rica	2,791		29	7,173		2.6	2.9
El Salvador[a]	4,927		38	7,394		1.5	1.3
Guatemala	8,433		...	13,667		1.6	1.6
Honduras[c]	4,680		...	5,341		1.1	0.9
Nicaragua[d]	3,502		30	4,904		1.4	1.6
Panama	2,274			7,181		3.2	3.6
Mexico	83,040	12.06	806	60,099	2.60	0.7	0.8
Caribbean	30,100	4.37	469	99,579	4.31	3.3	3.9
Latin Caribbean	22,937		322	68,427	2.96	2.6	2.77
Cuba[e]	10,075		273	50,293		5.0	6.1
Dominican Republic	6,716		...	13,169		2.0	1.2
Haiti	6,146		49	4,965		0.8	1.0
Non-Latin Caribbean	7,163	1.04	147	31,152	1.35	4.3	3.9
Anguilla	7		2	26		3.7	...
Antigua and Barbuda	83		5	373		4.5	5.8
Bahamas	249		5	1,050		4.2	4.1
Barbados	256		1	2,111		8.2	8.0
Cayman Islands	21		...	64		3.0	...
Dominica	78		4	322		4.1	3.0
French Guiana	86		...	765		8.9	...
Grenada	98		7	676		6.9	9.0
Guadeloupe	337		...	3,774		11.2	...
Guyana	989		27	2,204		2.2	1.5
Jamaica[f]	2,409		...	5,745		2.4	2.6
Martinique	329		...	3,520		10.7	...
Montserrat	12		1	67		5.6	5.7
Netherlands Antilles	186		35	2,552		13.7	...
St. Kitts and Nevis	48		4	266		5.5	5.8
Saint Lucia	131		5	539		4.1	3.8
St. Vincent and the Grenadines	106		9	524		4.9	4.9
Suriname	386		9	1,825		4.7	5.4
Trinidad and Tobago	1,223		31	4,613		3.8	4.8
Turks and Caicos Islands	8		1	36		4.5	...
Virgin Islands (UK)	13		...	50		3.8	4.7
Virgin Islands (USA)	108		1	50		0.5	...

TABLE 7 (Cont.)

Health service facilities and hospital beds, by subregion and country, 1987.

Subregion and country	1987 population		Health service facilities				
			Total (1987)				
	In thousands	(%)	Hospitals	No. of beds	(%)	Beds per 1,000 population 1987	Beds per 1,000 population 1984
North America	269,327	39.12	6,035	1,243,494	53.81	4.6	5.1
Bermuda	57		...	490		8.6	6.6
Canada	25,870		...	176,393		6.8	9.1
United States of America[g]	243,400		6,035	1,066,611		4.4	4.7
Total	688,465	100.00	18,920	2,310,890	100.00		

[a]Country report.
[b]Information subsystem, Ministry of Health.
[c]Report of the PAHO/WHO Representative in the country.
[d]Ministry of Health.
[e]12,728 minor beds were not considered.
[f]Ministry of Health, 1986–1987 Social Survey.
[g]Information on facilities and beds refers to short-term-stay hospitals.

TABLE 8

Hospital beds per 1,000 population in the Americas, by subregion, 1964–1984.

Region and subregion	1964	1967	1974	1978	1984
Region of the Americas	5.95	5.73	4.87	4.35	4.12
Latin America	3.30	3.36	2.94	2.79	2.66
Southern Cone	5.40	5.50	4.72	4.67	4.48
Brazil	3.40	3.80	3.80	3.80	3.60
Andean Area	2.63	2.53	2.12	1.99	1.97
Central American Isthmus	2.66	2.51	2.25	1.95	1.73
Mexico	2.20	2.00	1.20	0.90	0.80
Latin Caribbean	3.74	3.40	3.14	2.86	2.97
Caribbean	5.00	4.95	4.74	4.19	3.90
North America	9.04	8.47	7.39	6.54	6.29

Sources: PAHO. *Health Conditions in the Americas, 1969–1972, 1973–1976, 1977–1980, and 1981–1984.* Scientific Publications Nos. 287, 364, 427, 500. Washington, D.C., 1974, 1978, 1982, and 1986.

TABLE 9

Hospital beds per 1,000 population in the Southern Cone, by country, 1964–1984.

Subregion and country	1964	1967	1974	1978	1984
Southern Cone	5.40	5.50	4.72	4.67	4.48
Argentina	6.00	6.30	5.40	5.40	5.40
Chile	4.30	4.40	3.60	3.60	2.90
Paraguay	2.20	2.00	1.50	1.50	1.40
Uruguay	6.40	6.40	5.70	5.20	5.00

TABLE 10

Hospital beds per 1,000 population in the Andean Area, by country, 1964–1984.

Subregion and country	1964	1967	1974	1978	1984
Andean Area	2.63	2.53	2.12	1.99	1.97
Bolivia	2.10	2.20	1.80	1.80	1.80
Colombia	2.70	2.40	1.90	1.70	1.80
Ecuador	1.90	2.40	2.10	2.00	1.90
Peru	2.50	2.40	2.00	1.90	1.70
Venezuela	3.30	3.20	2.90	2.70	2.70

TABLE 11

Hospital beds per 1,000 population in the Central American Isthmus, by country, 1964–1984.

Subregion and country	1964	1967	1974	1978	1984
Central American Isthmus	2.66	2.51	2.25	1.95	1.73
Belize	4.90	4.90	4.60	3.20	2.50
Costa Rica	4.50	3.80	3.80	3.10	2.90
El Salvador	2.30	2.20	1.80	1.80	1.30
Guatemala	2.60	2.50	2.00	1.60	1.60
Honduras	2.00	1.70	1.70	1.30	0.90
Nicaragua	2.30	2.30	2.20	1.60	1.60
Panama	3.20	3.30	3.20	3.90	3.60

TABLE 12

Hospital beds per 1,000 population in the Latin Caribbean, by country, 1964–1984.

Subregion and country	1964	1967	1974	1978	1984
Latin Caribbean	3.74	3.40	3.14	2.86	2.97
Cuba	5.50	4.80	4.20	4.00	6.10
Dominican Republic	2.70	2.80	2.80	2.00	1.20
Haiti	0.70	0.70	0.70	0.80	1.00

falling pattern (Table 13), but the trend is not uniform among the countries.

Table 14 shows the ratio of beds per 1,000 population in North America (Bermuda, Canada, and the United States of America) in the period 1964–1984. In this subregion, the average ratio in 1957 was 9.2; by 1964 there had been a decline, which continued throughout the 1964–1984 period, and by 1984 the ratio was 6.29 beds per 1,000 population, which represented an average annual decline in the indicator of 0.127. This contraction can be attributed to the policy of eliminating psychiatric beds, the reduction in the incidence of such diseases as tuberculosis and leprosy and the corresponding elimination of beds allocated for those purposes, and the availability of ambulatory services for psychiatric patients and those with other chronic diseases. Canada (with 10.5, 9.2, and 9.1 beds per 1,000 population in 1964, 1974, and 1984, respectively) and the United States (with 8.9, 7.2, and 6.0 beds in 1964, 1974, and 1984) have been experiencing a steady decrease in this indicator, although, for the above-mentioned reasons, the reduction is more marked in the United States.

TABLE 13

Hospital beds per 1,000 population in the Caribbean, by country, 1964–1984.

Subregion and country	1964	1967	1974	1978	1984
Caribbean	5.00	4.95	4.74	4.19	3.90
Antigua	7.20	7.00	5.80	6.30	5.80
Bahamas	5.50	4.90	3.90	4.30	4.10
Barbados	5.80	10.40	8.70	8.70	8.00
British Virgin Islands	4.30	4.30	3.60	3.50	4.70
Dominica	4.90	4.50	4.30	3.00	3.00
Grenada	6.90	6.90	7.50	8.60	9.00
Guyana	5.40	4.60	4.30	4.50	1.50
Jamaica	4.00	3.70	3.80	2.40	2.60
Montserrat	5.30	4.90	4.70	5.10	5.70
St. Kitts and Nevis	3.40	4.00	4.30	5.60	5.80
Saint Lucia	4.70	4.80	5.20	4.40	3.80
St. Vincent and the Grenadines	4.40	4.40	5.40	5.10	4.90
Suriname	5.20	5.30	5.40	5.80	5.40
Trinidad and Tobago	5.30	5.10	4.50	4.10	4.80

TABLE 14

Hospital beds per 1,000 population in North America, by country, 1964–1984.

Subregion and country	1964	1967	1974	1978	1984
North America	9.04	8.47	7.39	6.54	6.29
Bermuda	8.90	11.00	7.00	6.60	6.60
Canada	10.50	10.20	9.20	8.90	9.10
United States of America	8.90	8.30	7.20	6.30	6.00

Operation and Maintenance Conditions

Health services in the Region continue to have a priority need for proper equipment that is repaired on time and adequately maintained and preserved. Programs for developing the installed physical capacity have advanced considerably as the result of a number of subregional, bilateral, and national projects and with external and country financing.

A survey was carried out from September 1986 to January 1987 in the countries of the Central American Isthmus to learn the status of engineering and maintenance services and the operational conditions of physical health care resources. During that same period and for the same purpose, information was collected on maintenance services in the countries of the Andean Area. The results were similar in both subregions.

The research protocol for collecting basic information included an analysis of the definition of health services maintenance policies; the organization of services at the central, regional, and local levels (ministries of health and social security institutions); the availability of programs for training, information, logistics and supplies, and standards, as well as manuals for preventive maintenance, supervision and control, and inventories; and the situation regarding workshops, human and financial resources, replacement parts and materials, testing equipment, conditions of the physical resource base, equipment, intercountry technical cooperation, and maintenance projects under way.

Information collected in the Central American Isthmus brought to light the following shortcomings:

- Lack of an explicit policy, in most of the countries, on maintenance and preservation that allocates enough resources for those purposes, and little attention given to local level services.
- Limited institutional capacity to resolve maintenance problems.
- Absence of a national engineering and maintenance subsystem, according to level of care and degree of complexity, and the prevalence of maintenance structures with central, overburdened workshops.
- Lack of management and administration for maintenance and organization of services, supervision and control, information systems, logistics, and supply of replacement parts and materials.
- Absence of preventive maintenance programs.
- Abundance of different equipment types and brands, which makes maintenance and the acquisition of replacement parts difficult.
- Lack of technical information to evaluate the physical resources, as well as of manuals, standards, systems, and the like.
- A dearth of qualified maintenance staff: 75% are self-trained and concentrate on the task of preservation, 19% are technical, and 6% are professional. On the average, maintenance staff have completed four years of primary school; more than half of the maintenance units are headed by self-trained personnel.
- The unavailability of programs for ongoing training.
- The poor response of existing workshops to the real needs of the services and the lack of precision instruments and equipment.
- Insufficient financial resources allocated to maintenance—ranging from 0.6% to 3.4% of the operating budget (not taking into account wages).
- The breakdown of equipment—of a total of 20 types of equipment analyzed, more than half were out of order or operating improperly.

The investigations in the Central American Isthmus and in the Andean Area targeted eight types of critical equipment used for patient diagnosis and treatment and for general operation of health care establishments: x-ray equipment, electrocardiographs, surgical tables, sterilizers, washing machines, dryers, boilers, and kitchens and ovens. Those investigations found the following:

- From 36% to 53% of the equipment was out of order or operating improperly (Table 15).
- On the average, the equipment is approximately 10 years old. There are extreme cases, such as in Nicaragua where the kitchens and ovens were built roughly 25 years ago; in Peru, where the boilers were built 24 years ago and the washing machines and dryers 22 years ago; in Panama, with x-ray equipment dating back 17 years; and in Venezuela, with surgical tables built 18 years ago; and in El Salvador and Honduras, where the surgical tables are 17 years old.
- The gap between the technological sophistication of the equipment and the skills of operational and maintenance personnel is widening
- Plans for replacing equipment are weak due to the lack of technical evaluation and adequate maintenance.
- No programs are in place for equipment overhaul.
- Resources managed by the ministries and the social security administration and restrictions on public spending preclude greater institutional development of maintenance and preservation services.
- In general, social security institutions have more resources to contract maintenance services, whereas the ministries, with limited resources, carry out their actions more slowly.
- The ratio of maintenance staff to beds is too low (Table 15).
- Marked differences exist among the countries of the subregion in the per-bed budget allocated to maintenance (Table 15).

Staff members and maintenance staff from the Central American Isthmus met in 1987 in Managua, Nicaragua, and those of the Andean Area met in 1988 in Cochabamba, Bolivia, to analyze the situation of maintenance services and to identify those areas with the most serious maintenance problems. The priorities determined are very similar for the two groups (Table 16).

In the Central American Isthmus a project for strengthening and developing the engineering and maintenance services of health establishments, has benefited from a donation made by the Government of the Netherlands. A similar project has been prepared for the Andean Area for which financing is being sought. Strategies for carrying out these projects include the following:

- Complementing the programs under way in each country, avoiding duplication of efforts, and promoting new activities, in order to strengthen the national capacity to solve present and future problems.
- Promoting joint development of the maintenance services of ministries of health and social security institutions, as a means of supporting coordination between the two agencies.
- Incorporating the political and technical levels of the health sector in the strengthening and development of the engineering and maintenance subsystems.
- Collaborating with health authorities in developing the local health systems.

TABLE 15

Inoperative or poorly functioning hospital equipment, years of use of equipment, and personnel and maintenance cost per bed, by countries, 1987.

Countries	X ray				Electrocardiography				Operating tables				Sterilizers				Washers				Dryers				Boilers				Stoves and ovens				Maintenance	
	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	No.	Inoperative/poorly functioning No.	%	Years of use	Personnel per bed	Cost per bed $US
Belize	2	1	50	14	3	3	100	3	2	1	50	15	6	3	50	8	2	2	100	4	5	5	100	8	2	2	100	16	—	—	—	—	0.010	—
Costa Rica	70	—	—	8	20	—	—	8	197	65	33	7	69	22	32	5	60	23	38	8	60	—	—	8	46	18	39	8	149	49	33	8	0.020	10.13
El Salvador	70	44	63	11	42	21	49	11	178	64	36	17	234	136	58	11	119	58	49	11	64	30	47	11	59	28	47	8	90	47	52	13	0.070	0.74
Guatemala	76	29	38	10	15	7	43	8	120	42	35	10	151	60	40	10	74	28	38	10	56	22	39	10	59	27	46	10	278	111	40	12	0.025	3.43
Honduras	47	19	41	10	25	10	38	11	92	31	34	17	119	66	55	12	54	24	45	11	36	17	47	11	24	11	47	11	49	26	52	7	0.070	1.73
Nicaragua	83	50	60	10	82	67	82	11	104	50	48	10	77	49	64	15	49	31	63	13	36	17	47	13	33	19	57	13	50	29	58	25	0.045	3.80
Panama	86	36	42	17	70	28	40	6	86	30	35	10	72	27	37	12	48	20	40	8	32	13	40	8	23	16	70	7	34	12	35	8	0.077	10.48
Total, subregion	434	179	41	11	257	136	53	9	779	283	36	12	728	363	50	11	406	186	46	10	289	104	36	10	246	121	49	10	650	274	42	12	Average 0.045	Average 5.05
Bolivia	380	220	58	10	390	168	43	5	516	150	29	12	387	194	50	12	230	69	30	10	235	106	45	10	—	—	—	—	260	130	50	10	0.004	—
Colombia	1,727	1,007	58	15	1,034	465	46	10	1,617	707	43	15	1,417	645	46	15	921	564	61	15	708	433	61	12	466	207	44	15	1,817	1,281	71	12	0.008	9.89
Ecuador	287	125	44	14	287	83	29	12	472	112	24	16	451	251	56	12	328	151	46	15	246	152	62	16	205	52	25	15	308	127	42	12	0.029	8.67
Peru	400	132	33	15	200	100	50	11	550	248	45	15	700	315	45	12	135	54	40	22	79	32	40	22	200	92	46	24	123	46	38	20	0.087	1.21
Venezuela	591	244	41	15	546	266	49	14	460	184	40	18	516	267	52	12	346	177	51	12	201	91	45	12	184	64	35	18	533	27	53	18	0.046	2.36
Total, subregion	3,385	1,728	51	14	2,457	1,082	44	10	3,615	1,401	39	15	3,471	1,672	48	13	1,960	1,015	52	15	1,469	764	52	12	1,055	415	39	17	3,041	1,611	53	13	Average 0.035	Average 5.53

TABLE 16

Comparison of the priority ranking of critical equipment, Central American Isthmus, 1987[a] and Andean Area, 1988.

Priority ranking	Central American Isthmus	Andean Area
1	X-ray equipment	X-ray and imaging equipment
2	Boilers and water treatment units	Boilers, laundry equipment, and stoves
3	Sterilizers and microscopes	Intensive care
4	Electrical plants	Clinical laboratory
5	Dental equipment	Air conditioning
6	Air conditioning	Dental equipment

[a]The ranking was established by officials and maintenance personnel of ministries of health and social security institutions in the respective areas.

• Strengthening the mechanisms for publicizing maintenance programs through the publication of bulletins to motivate personnel and inform them of the importance of this service.

• Utilizing teaching institutions and incorporating nontraditional systems of training through agreements with universities and technical schools.

• Incorporating equipment operators into the training programs to improve management and ensure sound use of installations and equipment.

In most of the countries, both in the ministries and in the social security institutions, efforts are made to achieve an organizational structure of the engineering and maintenance services in all the areas of action, through human resources training plans, programs, and activities. In the future the countries of the Region are expected to focus efforts on the following activities: increasing and improving the operating capacity of the health sector; promoting a network of centers and institutions with recognized capacities in research on services that will help to identify priorities, design protocols, develop new approaches and methods, carry out operations research, exchange experiences and resources, program technical publications, and evaluate the entire process; accelerating programs for the training of personnel in biomedical and clinical engineering that are already under way at universities in Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela; training maintenance staff, through ongoing programs, especially at factories specializing in hospital equipment; developing maintenance programs, computerized whenever possible, for more complex services; allocating greater financial resources for maintenance and preservation, in light of the policy to restrict construction of new establishments in view of rising investment costs; and providing administrators and managers with the instruments needed for organizing the maintenance subsystem through programs, systems, models, methodologies, standards, and procedures that make it possible to improve the processes of service decentralization and deconcentration by strengthening local health systems and guaranteeing continued operation of reliable, safe, and efficient physical resources.

Special Diagnosis and Treatment Resources

Laboratory Services

Within national health systems, laboratories are a critical part of health care programs, epidemiological surveillance, and environmental monitoring. In recent years, health systems in the countries of the Region have developed in very different ways, which is reflected in turn in the varied development of the laboratories. At the same time, the extraordinary progress of biotechnology in recent decades and the availability of highly productive and effective technology, associated with current demands for health care, have had varied repercussions in the countries of the Region.

In both Canada and the United States of America, health is a responsibility of the states; the national level supports health actions by performing specialized examinations and supplying technology. In the two last decades these countries have experienced an increase of more than 500 laboratory procedures and tests for the diagnosis, monitoring, and discharge of hospitalized patients. Laboratory procedures for environmental monitoring and occupational health represent a significant percentage of the cost and workload of the public health laboratories; those laboratories have also become involved in immunological surveys for hereditary and metabolic disorders, programs for quality control having been transferred from state laboratories to private entities and organizations. Moreover, the public health laboratories have reduced the production of reagents and other biologicals and have increased procurement from private industries, in an effort to diminish their production costs and channel resources to priority areas.

The great challenge facing laboratories in the countries of Latin America and the Caribbean is adapting and reorganizing to meet not only the requirements of diagnosis of infectious diseases but also noncommunicable diseases, as well as the growing demand stemming from work related to microbiology, environmental chemistry, toxicology, and, in some countries, occupational health. The

general situation with regard to laboratories varies from country to country and even between laboratories in the urban centers, which have advanced technology, and those in rural health posts, which have limited resources for procedures and equipment. A few countries have well-developed laboratory networks, the purpose of which is to improve tests, standardize procedures, control the quality of reagents, and maintain and repair equipment as needed.

In 1988, the public health laboratories in the United States analyzed approximately 0.1 sample per capita at an estimated cost of $US7.20 per sample. Of those samples analyzed, a significant percentage (18.3%) related to microbiology, environmental chemistry, and occupational health. In Latin America most samples are related to hematological tests, clinical chemical tests, and simple microbiological tests, at an estimated average cost of $US1.00 per sample. In Costa Rica, the average cost of a laboratory test to the Costa Rican Social Security Fund is estimated at $US0.70, while in the province of Buenos Aires, Argentina, it is estimated at $US3.08. The number of tests per capita reflects the differences among countries, while the number of tests per medical consultation points to varying use among physicians (Table 17).

The non-Spanish-speaking Caribbean countries have problems stemming from the small size of the population and the limited availability of resources. Central laboratories, located in major hospitals, primarily carry out clinical tests to assist in individual diagnoses; their participation in epidemiological surveillance is limited.

Table 18 summarizes the number of countries, by major subregion, that participate in external quality control programs, by specialty. In the Caribbean, laboratories are oriented to quality control of clinical and hospital tests and do not participate in programs for external quality control in microbiology or parasitology. Tables 19 and 20 list the countries of Latin America and the Caribbean, respectively, that participate in programs for external quality control, by specialty. Few of them have national programs for quality control, and microbiology is the least well represented (Table 21).

TABLE 17

Laboratory tests performed in some Latin American countries, 1988.

Country	Total tests (millions)	Tests per capita	Tests per medical consultation
Costa Rica	11.6	4.0	2.0
Ecuador	9.6	1.4	1.1
El Salvador	9.6	1.9	2.7
Honduras	1.1	0.2	1.5
Mexico	73.9	0.9	1.7
Nicaragua	1.6	0.4	0.2
Panama	8.8	3.8	1.8

TABLE 18

External quality control programs in Latin America and the Caribbean, 1988–1989.

Programs	Latin America (19 countries)	Caribbean[a] (18 countries)
Clinical chemistry	16	6
Hematology	11	7
Blood type	11	1
Microbiology	12	0
Parasitology	15	0
VDRL	9	5

[a]Non-Spanish-speaking Caribbean.

Quality control of reagents for laboratory use is an important aspect to consider, and it is recommended that drug legislation incorporate measures for reagent control. Depending on the type of tests, the cost of reagents and equipment can be very high, especially because almost all such items are imported. As regards reagents for diagnosis, six countries (Argentina, Brazil, Chile, Cuba, Guatemala, and Mexico) have limited capacity for producing some of them, particularly bacterial reagents, as well as for distributing them within the laboratory network, above all within the countries in which they are produced. For its part, PAHO launched a regional program for exchange of biological reagents used for diagnosis, with the collaboration of Argentina, Brazil, Chile, Cuba, Mexico, and Spain.

AIDS adds a new element of complexity, as most countries do not have national blood bank systems that could be easily incorporated into the public health laboratory activities for the prevention of AIDS through the control of blood and blood derivatives.

Of particular importance are the programs for biosafety, as well as the concept of bioclean areas. The interrelationship between blood banks and public health laboratories is also significant. As a result of AIDS programs, blood bank laboratories have increased surveillance of diseases transmitted by transfusion, although not all the countries have laws regulating the blood banks, which do not test all samples for the various infections. Table 22 presents a summary for some countries of Latin America from which information has been obtained on programs for control of human immunodeficiency virus (HIV).

Another important concern is the challenge of rapidly incorporating new technology. Regrettably, the available

TABLE 19

External quality control programs in Latin American countries, 1988–1989.

Country	Clinical chemistry	Hema-tology	Blood type	Micro-biology	Para-sitology	Syphilis serology
Argentina	Yes	Yes	Yes	Yes	Yes	No
Bolivia	No	No	No	Yes	Yes	No
Brazil	Yes	Yes	Yes	No	Yes	No
Chile	Yes	Yes	Yes	Yes	Yes	Yes
Colombia	Yes	No	Yes	Yes	Yes	Yes
Costa Rica	Yes	No	Yes	Yes	No	No
Cuba	Yes	Yes	Yes	Yes	Yes	No
Dominican Republic	Yes	Yes	Yes	No	Yes	Yes
Ecuador	Yes	No	Yes	Yes	Yes	Yes
Guatemala	Yes	Yes	No	Yes	Yes	Yes
Honduras	Yes	Yes	No	Yes	Yes	Yes
Mexico	Yes	Yes	No	Yes	Yes	Yes
Nicaragua	Yes	No	Yes	No	No	No
Panama	Yes	Yes	No	Yes	Yes	No
Paraguay	Yes	Yes	Yes	No	Yes	No
Peru	No	No	No	No	No	Yes
Uruguay	Yes	Yes	Yes	Yes	Yes	Yes
Venezuela	Yes	No	Yes	No	Yes	Yes

TABLE 20

External quality control programs in Caribbean countries, 1988–1989.

Country	Clinical chemistry	Hema-tology	Blood type	Micro-biology	Para-sitology	Syphilis serology
Bahamas	Yes	Yes	No	No	No	No
Barbados	No	Yes	No	No	No	Yes
Belize	Yes	No	No	No	No	No
British Virgin Islands	No	Yes	No	No	No	No
Dominica	Yes	No	No	No	No	No
Guadeloupe and Martinique	No	No	No	No	No	Yes
Guyana	Yes	No	No	No	No	Yes
Jamaica	Yes	Yes	Yes	No	No	Yes
St. Kitts and Nevis	No	Yes	No	No	No	Yes
Saint Lucia	No	Yes	No	No	No	No
Suriname	Yes	Yes	No	No	No	No

TABLE 21

National quality control programs in some Latin American countries, 1988–1989.

Country	Clinical chemistry	Parasitology	Microbiology	Tuberculosis	Syphilis serology
Argentina	Provincial[a]	National	—	National	National
Brazil	State[a]	State	—	State	—
Chile	National	National	National	National	National
Colombia	National	National	—	National	—
Cuba	National	National	National	National	National
Mexico	State[a]	National	—	National	State

[a]In Argentina, Brazil, and Mexico, professional associations, states, or provinces carry out quality control programs, particularly in clinical chemistry.

TABLE 22

HIV control programs for blood in some Latin American countries, 1989.

Country	Blood banks		Units of blood	% of units tested for HIV
	Total	Public		
Bolivia	33	13	5,200	45
Chile	117	94	220,000	99
Colombia	132	91	290,000	70
Paraguay	19	12	30,000	25
Uruguay	96	45	100,000	98
Venezuela	153	123	250,000	90

resources are often not compatible with this technological progress. In addition, the development of laboratories should be coherent and coordinated with progress in other areas of medicine and public health.

Two elements that are generally not given enough attention are preventive maintenance of laboratory equipment and instruments and biosafety. Each laboratory should have organized, operational programs. Standards for preventive maintenance of equipment and biosafety should be established. In these two areas, which are of priority concern for PAHO, training courses have been carried out.

The policy for developing human resources to work in laboratories, with appropriate training of personnel at the various levels, is key. In Latin American countries, it is common to find inappropriate distribution or relationships among the various types of personnel, leading to poor utilization of the economic support available. On the other hand, the training of human resources abroad should be compatible with the national situation and with the level of development of national laboratories. Errors in planning such training lead to professional frustration and to emigration of qualified personnel.

Implementation of a national laboratory system requires a well-coordinated national network, under the technical and normative direction of a national reference laboratory. Along with development of the national laboratory networks, the bases should be established, and the operational stage initiated, for a regional network of reference laboratories that makes more efficient use of the collaborating centers recognized by WHO. This regional or subregional network would facilitate technological transfer, exchange of information, and support for professional training, at a cost that is reasonable for the countries participating in the system. In 1989 the Region of the Americas had a total of 211 WHO collaborating centers, 76 of which worked in the laboratory field (Table 23).

In Latin America there are 55 WHO collaborating centers, 19 of which do laboratory-related work; in the Caribbean there are only 2 collaborating centers, 1 of which works in a laboratory field; in Canada, 6 of the 15

TABLE 23

WHO collaborating centers in the Region of the Americas and activity areas in which they participate, by country, 1989.

Country	Collaborating centers	Immunology	Virology	Microbiology	Parasitology	Mycoses	Food
Argentina	3	—	1	1[a]	1[b]	—	—
Brazil	8	—	2	2	1[c]	1[b]	1
Canada	6	1	2	1[a]	1[d]	—	1
Chile	2	—	—	2	—	—	—
Costa Rica	1	—	—	—	—	—	1
Guatemala	1	—	—	—	—	—	1
Jamaica	1	1	—	—	—	—	—
Mexico	3	1	—	—	1[c]	1[e]	1
United States of America[f]	50	...	...	...	...	...	...
Venezuela	1	1	—	—	—	—	—

[a]Tuberculosis.
[b]Chagas' disease.
[c]Leprosy.
[d]Biosafety.
[e]Onchocercosis.
[f]Specialized centers.

WHO collaborating centers work in laboratory areas; and in the United States, 50 of the 139 do laboratory work, including the collaborating centers for laboratory animals and veterinary public health.

All countries of the Region should have a central-level laboratory policy that, accompanied by corresponding legislation, would specify laboratory duties and make it possible to establish defined guidelines for technological and human resources development, as well as to have a budget consonant with needs.

Laboratories represent a major part of total health expenditures, and for that reason their use should be rationalized to prevent indiscriminate use and to transform them into efficient instruments of health care. Only limited resources are allocated to laboratories in most countries of the Region—a situation that is made even more serious by the increasing costs of laboratory materials and equipment. As a result, strategies for the coming years should be to optimize the use of available resources, plan and decentralize the laboratory activities as part of local health systems, establish priorities, and promote intercountry cooperation.

Diagnostic Imaging and Radiation Therapy

The main applications of ionizing radiation in medicine are diagnostic radiology, radiation therapy, and nuclear medicine. Its use requires special precautions, which is the purview of radiation protection.

Numerous therapeutic decisions in the health systems are based on radiodiagnostic information. PAHO has studied the use of diagnostic radiology not only at the national level but also regionally, by quantitative and qualitative sampling in institutions representative of the different levels of care, namely, university hospitals, regional hospitals, and district or local hospitals.

Since statistics from different countries are not always comparable, information has been obtained in the field, in accordance with uniform guidelines. The annual frequency of radiological examinations in Latin America and the Caribbean is much less than that observed in Canada and the United States, where in 1986 it was 1,016 and 790 per 1,000 population, respectively. It is not possible to establish optimum figures, since the averages mask the excess concentration of technical personnel and equipment in urban centers and their scarcity in peripheral areas (Tables 24 and 25).

The economic difficulties that most countries of the Region face not only limit their use of radiology, but also impede proper evaluation of a demand that is presumed to be unfillable. One of the factors limiting the diagnostic radiology service is the high percentage of films rejected. Even in the best radiological services, almost 10% of all x-ray films are rejected. Also, delays in providing the service and the deliberate limitation of its delivery mean that actual output is much lower than the real production capacity.

The productivity of radiologists and technicians in some countries of the Region (Table 26) is related to

TABLE 24

Use of diagnostic radiology nationwide and in the most and least benefited regions in some Latin American and Caribbean countries, around 1984.

Country	Year	Annual frequency of radiological examinations[a]/1,000 population		
		Nationwide	Most benefited region	Least benefited region
Brazil	1982	120[b]	177[c]	4[d]
Chile	1982	138	141	92
Colombia	1983	12[e]	...	...
Costa Rica	1981	270	446	157
Cuba[f]	1988	139[e]	...	...
Dominican Republic	1981	20	33	3
Ecuador[g]	1984	29	83	2
Jamaica[h]	1984	57	...	...
Mexico	1981	195[i]	218[i]	109
Nicaragua	1982	57	122	36

[a]A diagnostic radiology procedure may require one or more x-ray films.
[b]INAMPS beneficiaries.
[c]Southeast, urban clientele.
[d]North, rural clientele.
[e]Urban population sample.
[f]United Nations, *Sources, Effects and Risks of Ionizing Radiation*. New York, 1988.
[g]Report by N. Zderich, PAHO consultant, 1985.
[h]Report by G. Gómez Crespo, PAHO consultant, 1987.
[i]Social security beneficiaries.

demand, which can be very low in small local hospitals; it also depends on such other factors as the availability of film and developing materials, the condition of the equipment, etc. Study of the registries of several local hospitals indicates that the number of patients sent to regional hospitals for radiological study and subsequent treatment is very limited.

These difficulties seriously diminish accessibility to radiological services and contribute to saturation of the services in the university hospitals. Indeed, patients who have the means to do so avoid the local or regional hospitals, which are poorly equipped, and go to the central hospital. More than 70% of the radiological studies done at university and other teaching hospitals are simple exams that should be performed locally or regionally.

Table 27 shows the nature of the radiological examinations done in hospitals and offices of different levels in several countries of Latin America. The last column shows that all the radiological studies required in rural hospitals and most of those carried out at regional and even university hospitals could be done using the WHO basic radiology system (BRS).

The reliability and simplicity of management of the BRS make it possible to train paramedical personnel in a matter of days to obtain excellent x-ray films. Manuals on radiographic and dark room techniques published by WHO facilitate the day-to-day work. To assure quality, it is imperative that periodic inspections be made by qualified radiographers, and that regular contact be maintained between general practitioners and qualified radiologists. Adoption of the BRS as standard equipment not only facilitates the training of operators and maintenance technicians, but also simplifies the storage of spare parts and reduces the cost of the units in the peripheral centers. Despite these advantages, in 1988 there were only twenty-five BRS units in the Region (one in Bolivia, four in Chile, four in Colombia, four in Costa Rica, one in Ecuador, one in Guyana, two in Mexico, and eight in Nicaragua).

Two of the most important causes of the poor quality and limited performance of the radiological services, as well as of the poor state of equipment and dark rooms, are insufficient technical preparation and lack of quality control programs.

Some of the problems common to most of the countries of the Region are structural drawbacks, such as concentration of personnel and equipment in the urban centers and shortage of both in the peripheral areas; lack of policies for selecting and acquiring equipment; shortcomings in maintenance services; and limited motivation and preparation of technical personnel. Operational problems include performance of routine studies that are unnecessary, scarcely productive, or even dangerous (for example, pelvic x rays); use of complex equipment and highly qualified personnel for simple studies; utilization of fluoroscopy or photofluorography to save normal film; irregular supply of film, screens, and developing materials; inadequate operational conditions of the dark room; lack of preventive maintenance of the equipment and accessories; lack of acceptance tests of equipment and of quality control programs; and lack of physical or clinical dosimetry measurements, or both.

For radiation therapy, in 1988 there were 300 cobalt-60 teletherapy units in the Region (of which 110 were in Brazil, 80 in Argentina, and 11 in Peru), as well as 86 linear accelerators (including 55 in Brazil, 10 in Venezuela, 8 in Argentina, and 6 in Colombia). In addition, there are approximately 5 cesium-137 units, 10 simulators, and 5 computers for planning treatment.

The irradiation of patients for therapeutic purposes using x rays, radioactive sources, or accelerators requires that the doses administered be accurately measured. Hence, it is necessary to train competent radiological physicists. In 1988, a practical course on physical dosimetry in radiation therapy was given (in Spanish) in San Antonio, Texas, United States of America, and was attended by 43 medical physicists from Latin America.

TABLE 25

Number of persons per diagnostic radiology unit in some Latin American and Caribbean countries and in selected areas, 1984.

Country	Nation-wide	Metropolitan region		Least benefited region	
Argentina[a]	9,861	Federal Capital	8,830	Buenos Aires Province	15,147
Brazil[b]	15,417	Southeast (per facility)	26,600	Northeast (per facility)	55,000
Chile	5,071	...	...	...	...
Costa Rica	19,232	San José	10,065	North Huentar	53,654
Cuba[c]	11,560	...	...	...	...
Dominican Republic	80,685	Metropolitan	95,090	Region V	135,785
Ecuador	33,660	Quito	15,653	Napo	62,186
Jamaica[d]	65,000	...	...	...	...
Mexico[e]	20,000	Federal District	36,850	Chiapas	100,000
Nicaragua	50,000	Region III	48,422	Region IV	82,000
Peru	10,900	Lima	4,940	Amazonas	84,850
Suriname	34,545	...	...	...	...

[a]Includes public, official, social work, and private.
[b]INAMPS beneficiaries.
[c]1988 information.
[d]Some equipped hospitals do not provide services because of lack of technicians.
[e]IMSS beneficiaries.

TABLE 26

Ratio of radiologists and technicians to population and their annual productivity, in selected countries of the Americas and in areas within them, 1984.

Country/ region/ institution	Human resources				Annual productivity			
					Per radiologist		Per technician	
	Radiologists (No.)	Population/ radiologist	Technicians (No.)	Population/ technician	Studies	Films	Studies	Films
Argentina								
Hospital Italiano (Buenos Aires)	...	...	...	...	4,875	7,068	2,437	3,534
SAMIC, Oberá, Misiones Province	...	...	...	...	10,266	9,456	...	3,152
Brazil (INAMPS)	...	...	7,494	15,969	...	...	...	...
Southeast (Rio, São Paulo)	...	...	4,517	...	...	...	1,286	2,301
Hospital das Clínicas	...	...	...	...	...	7,840	1,140	2,850
Canada (MacMaster University, 1982)	1,320	16,755	4,626	4,784	21,520	...	...	...
Costa Rica								
Country (total)	34	67,878	109	13,656	18,351	40,194	3,692	8,086
Capital (only)	25	...	72	...	...	...	...	...
Ecuador	92[a]	87,000	(+) 155	51,600	...	...	...	...
Sierra	132[b]	60,600	(−) 270	29,630	...	2,300	...	1,125
(Including Quito)	70[b]	...	(−) 131	...	...	...	...	...
Mexico (IMSS)	253	266,426	977	69,000	...	...	...	...
Federal District	101	...	435	...	18,654	...	4,830	...

[a]Physicians and technicians with a specialization.
[b]Total physicians and technicians with or without a specialization.

TABLE 27

Nature of diagnostic radiology examinations performed in hospitals and clinics of different levels in several Latin American countries, 1984.

Country	Hospital level	No. of diagnostic radiology examinations in 1983	% of consultations warranting diagnostic radiology	Films per examination	Nature of the examinations (%)					% of examinations feasible with BRS
					Thorax	Abdomen	Spine	Limbs	Skull	
Argentina[a]	Univ. (private)	116,991	43.6	1.40	47.0	5.0	10.0	9.0	15.0	86
	Univ. (state)	51,665	13.2	2.00	31.0	5.0	12.0	21.5	19.5	89
	Regional	10,262	21.0	1.00	45.0	1.0	9.4	22.0	13.0	92
	Local	1,020	3.0	1.00	43.0	7.3	11.0	29.0	7.0	96
Brazil[b]	University	87,416	21.0	1.80	37.3	5.3	7.7	37.1	9.0	96
	Local	4,800	4.7	1.10	49.0	3.6	2.8	40.0	4.4	99
Colombia[c]	University	62,300	30.0	...	32.0	9.4	11.0	39.0	9.0	94
	Regional	3,280	3.0	1.00	49.0	20.0	5.0	22.0	4.0	92
	Health center	530	2.0	1.00	...	...	...	...	...	100
Costa Rica[d]	University	69,182	15.0	2.00	39.0	13.0	6.0	25.0	10.0	93
	Regional	25,136	8.2	1.70	27.0	8.0	7.0	39.0	9.0	90
	Health center	10,513	6.5	2.00	33.0	12.0	8.0	29.0	12.0	94
Mexico[e]	University	61,584	48.0	3.60	...	...	...	...	...	72
	Regional	68,732	23.0	1.90	16.2	10.5	16.5	29.1	17.2	90
	Health center	7,610	11.0	1.00	48.0	13.8	19.4	9.2	9.4	100

Note: The % of abdominal examinations seems low because only those examinations that can be performed with the BRS have been included: simple abdominal, cholecystography, excretory urography. Those examinations that cannot be performed with the BRS can be deduced from the last column.

[a]University: Hospital Italiano, Buenos Aires; Hospital de Clínicas José de San Martín, Buenos Aires.
Regional: SAMIC, Oberá, Misiones Province.
Local: SAMIC, L.N. Alem, Misiones Province.

[b]University: Hospital General Bonsucesso, INAMPS, Rio de Janeiro.
Local: Hospital Odair Pedroso, Cotia, São Paulo.

[c]University: Hospital Universitario San Vicente de Paúl, Medellín.
Regional: Hospital Regional, Yarumal.
Local: Hospital Fredonia.

[d]University: Hospital San Juan de Dios, San José.
Regional: Hospital Max Peralta, Cartago.
Local: Hospital William Allen, Turrialba.

[e]University: IMSS, Hospital La Raza.
Regional: IMSS, Hospital General Zonal 58, Tlalnepantla.
Local: Centro Comunitario de Salud Dr. M. Cárdenas.

In collaboration with the International Atomic Energy Agency, since 1973 the postal service of thermoluminescent dosimetry for cobalt-60 teletherapy units has been in operation.

At more or less regular intervals, lithium fluoride capsules that must be irradiated under special conditions are sent to the radiation therapy departments of Latin America and the Caribbean. The measurements done on those dosimeters make it possible to detect errors of dosimetry due to different causes and to adopt corrective measures. Practically all the radiation therapy services of Latin America and the Caribbean have participated in and continue to benefit from this service. In 1986, PAHO published a scientific study in Spanish on the clinical and physical aspects of quality control in radiation therapy, which treats these problems in detail. Regrettably, the shortage of radiological physicists makes it difficult to correct these problems; more of these specialists need to be trained.

In regard to nuclear medicine, there are some 250 gamma cameras in Latin America, of which 110 are in Argentina, 1 is in Bolivia, 59 are in Brazil, 18 are in Chile, and 8 are in Peru. The total number of dose calibrators (reentrant ionization chambers) for measuring the radioactivity to be injected is not known, but there are 95 in Argentina, 2 in Bolivia, 53 in Brazil, 12 in Chile, and 6 in Peru. These five countries participate in an International Atomic Energy Agency quality control program that has been in operation since 1984.

In order to control the quality of the gammagraphy, phantoms are used that simulate organs such as the brain, lungs, or liver. Many nuclear medicine laboratories in the Region, as well as WHO collaborating centers in nuclear medicine, participate in these tests.

Regarding radiation protection, the daily operations of both x-ray and radiation therapy equipment—such as the handling of sealed or unsealed radioactive sources that are utilized in medicine, agriculture, and industry—require special knowledge and means to reduce risks. The proliferation of very powerful radioactive sources used in medical treatment and industry requires special safety measures. Inadequate storage of radioactive sources and lack of knowledge as to the risks associated with radiation have resulted in serious accidents such as those in Mexico (1984), Brazil (1987), El Salvador (1989), and Bolivia (1989), causing death or permanent physical harm. Surveillance should be complete and continuous, and the countries of the Region should have access to the means of detection, decontamination, treatment, and follow-up of the exposed population without having to improvise, more or less successfully, when accidents occur. This calls attention to the need in each country for legislation on radiation protection, along with an adequate physical infrastructure, trained teams of experts, and the establishment of efficient mechanisms for mutual assistance. By 1989, only Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, Paraguay, Peru, and Uruguay had radiation protection legislation.

Drugs, Vaccines, and Biologicals

Drugs

Throughout the 1980s, health authorities in the countries of the Region repeatedly recognized the priority importance of the supply, quality, and use of drugs to improve and expand health service coverage. Regional and subregional health initiatives in Central America, the Andean Area, and the Southern Cone made major strides in this area, among them:

- The Latin American Network of Official Laboratories for Quality Control of Drugs, established in 1984, to fulfill the countries' needs to improve drug quality by developing and strengthening quality control laboratories. The network consists of 22 participating laboratories and includes specific regional programs, such as those on reference materials and external quality control.
- The ABREMEX agreement, signed in 1984 among Argentina, Brazil, Mexico, and Spain, whose purpose is to promote production of active ingredients for pharmaceuticals in countries that have reached a significant level of development and in which the industry plays a very important role.
- The Essential Drugs Revolving Fund, established in 1986 in Central America and Panama for the joint acquisition of drugs for public health institutions, which also includes the participation of the pharmaceuticals industry in the countries of the Region. The impact of this effort was manifested in an average savings of 64% in the first set of purchases as compared to prices paid previously by institutions in those countries.

At the national level the countries continued to carry out activities that included efforts to rationalize the prescription and use of drugs. One major area of achievement was the preparation or updating of basic lists of drugs and their respective drug formularies. More than half of the countries included in Table 28 have unified basic lists used nationally in the public sector, which is indicative of a trend toward setting priorities in the pharmaceuticals market that are in line with a country's epidemiological profile.

While almost half of the formularies have been prepared or updated recently (from 1986 to 1988), some have not been modified in the last five to ten years and thus need to be revised. In addition, each country classifies drugs in different categories, even though all of them are based on the pharmacological action of the product (Table 28). In all cases the number of products included in the formularies and the pharmaceutical presentations represent lower figures than the total number of pharmaceutical products registered in each country.

In other countries there are several basic tables or different formularies used by the ministries of health, by social security, and often by institutions in the same agency. This situation demonstrates the need for agreements among the different health agencies or institutions in a given country as a first step toward efficient administration of drug supply. The political leadership of the ministries of health should be strengthened, as should the managerial capacity in the area of drug supply, to formalize coordination of drug therapy criteria in treating diseases that affect the population covered by the various services.

A major advance in recent years has been the establishment and development of 12 new drug information centers in each of 12 countries, whose purpose is to provide objective, updated, and timely scientific information to health professionals in clinical situations as a means of contributing to the rational use of drugs. Depending on circumstances in each country, these centers were assigned to the ministry of health, the social security system, or a national university.

Most of the countries of the Region have no systematic drug surveillance programs that make it possible to detect adverse reactions, lack of therapeutic action, incompatibility, or various iatrogenic processes. Despite the difficulties this implies, some countries (Costa Rica, Guatemala, and Honduras) have initiated retrospective prescription studies, which will be extremely useful for

TABLE 28

Year in which therapeutic formularies and numbers of categories, products, and pharmaceutical presentations were developed or revised, in some countries of the Region, 1988.

Country	Year of development or revision	Application	No. of categories	No. of products	No. of presentations
Argentina	1988	MSAS[a,b]	24	434	...
Belize	1988	National	18	228	318
Bolivia	1985	MPSSP[c]	50	237	307
Brazil	1983	National	13	300	478
Chile	1983	National[b]	16	325	462
Colombia	1986	National	22	390	608
Costa Rica	1984	National	51	333	469
Cuba	1987	National	94	...	746
Dominican Republic	1984	National	22	186	...
Ecuador	1986	National	19	241	340
El Salvador	1986	ISSS[d]	18	350	528
Guatemala	1988	National[b]	23	391	493
Guyana	1977	National	16	...	945
Honduras	1988	IHSS[e]	21	330	411
Honduras	1985	MS[f]	48	214	308
Mexico	1984	National	24	330	484
Nicaragua	1988	National	21	345	481
OECS[g]	1988	National	70	235	...
Panama	1981	National	54	392	594
Paraguay	1981	MSPBS[b,h]	26	225	293
Peru	1987	National[b]	28	343	525
Uruguay	1983	MSP[b,i]	438	...	...
Venezuela	1975	IVSS[j]	...	536	723

[a]Ministry of Health and Social Action.
[b]Basic table.
[c]Ministry of Social Welfare and Public Health.
[d]Salvadoran Social Security Institute.
[e]Honduran Social Security Institute.
[f]Ministry of Public Health and Social Welfare.
[g]Organization of Eastern Caribbean States.
[h]Ministry of Public Health and Social Welfare.
[i]Ministry of Public Health.
[j]Venezuelan Social Security Institute.

determining the degree to which prescriptions are made on a rational basis.

Most of the 127 schools of pharmacy in the Region are adapting their curricula. This effort is aimed at reorienting the training of pharmacologists to improve the quality of patient and community health care. In some countries (Colombia, Costa Rica, El Salvador, Honduras, and Venezuela), teaching activities in areas such as hospital pharmacy, drug supply, patient education, and clinical pharmacology are under way; these activities involve the joint participation of both teaching institutions and service agencies.

Despite efforts undertaken at the regional, subregional, and national levels, strides made by the countries have not been sufficient to meet needs in the field of drugs. Not only do large sectors of the population continue to lack access to basic drugs, but, due to the economic and social crisis affecting most of the countries of the Region, those sectors continue to grow in number. In most of the countries, one of the critical problems—drug sup-

ply—is characterized by limited local participation in decision making, improvised programming, an inoperative purchasing process, inadequate storage, untimely distribution, and irrational use of drugs. In addition, many of the drugs that are marketed and used have been verified to be of poor quality, and no programs exist to guarantee systematic surveillance of the quality of products available on the market.

The lack of a system of reliable and timely information to evaluate the drug situation is yet another problem, and it impedes the determination of how to best use available financial resources, what expenditures should be allocated for consumption of drugs, and what their impact will be on health care costs. Similarly, there are no instruments for evaluating drugs and pharmaceutical services for quality, efficacy, and efficiency.

Another difficulty is the accessibility of drugs, which depends partially on the price structure for retail sales. Table 29 shows that in the best case (Mexico), the markup at pharmacies (retail) is 44% of the product price. Also, the figures indicate that excluding the United States of America, where the markup is 83% (not shown in the table), the greatest markup is in Venezuela, with 68%, followed by Colombia, with 66.7%. At the distributor level, the highest figure (25%) is in Colombia and Central America (average), and the lowest is in Chile (13%). These figures show the need to find financing methods to bring these costs down. The strategies include production of generic drugs, selection of basic lists, establishment of community pharmacies, and development of a subsidy policy, among others. Indeed, some countries of the Region (Argentina, Brazil, the Dominican Republic, Ecuador, Guatemala, Honduras, and Peru), have already devised other means of financing drugs through special programs aimed at specific population groups, the results and long-term economic and political viability of which are not yet known.

The indicator used internationally to evaluate expenditure on pharmaceutical products at the country level is per capita expenditure, which is commonly expressed in terms of U.S. dollars. The figures on countries of Latin America show a substantial decline over a six-year period (1980–1986) that contrasts with the increase in Canada and the United States from 1983 to 1986 (Table 30). With the exception of Ecuador, which had an increase of $US0.70, all other Latin American countries analyzed experienced significant reductions. These included Argentina ($US24.40), Colombia ($US8.80), and Venezuela ($US8.40). However, these figures should be interpreted with caution, since devaluation of the currency has a considerable impact on these international indicators, and most countries in the Region dramatically de-

TABLE 29

Price structure for drug sales in some Latin American countries, 1987.

Country	Price		
	Producer	Distributor	Pharmacy
Argentina	100	116.0	148.5
Brazil	100	122.0	164.5
Central American Isthmus[a]	100	125.0	159.2
Chile	100	113.0	147.0
Colombia	100	125.0	166.7
Ecuador	100	116.0	145.0
Mexico	100	118.5	144.0
Peru	100	119.0	148.8
Venezuela	100	117.6	168.0

[a]Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama average.
Source: World Drug Market Manual, 1987.

TABLE 30

Per capita expenditure for drugs, by country, 1980 and 1986.

Country	Per capita expenditure ($US)		
	1980[a]	1986[b]	Difference 1980–1986
Argentina	68.8	44.4	−24.4
Bolivia	5.7	2.0	−3.7
Brazil	12.7	10.6	−2.1
Canada	58.0[c]	73.7	+15.7
Central American Isthmus[d]	...	0.9	...
Chile	17.8	10.6	−7.2
Colombia	20.8	12.0	−8.8
Ecuador	11.9	12.6	+0.7
Mexico	15.7	13.0	−2.7
Paraguay	13.3	10.2	−3.1
Peru	11.3	11.1	−0.2
United States of America	90.8[c]	121.3	+30.5
Uruguay	32.1	29.6	−2.5
Venezuela	18.1	9.7	−8.4

[a]Pan American Health Organization. *Health Conditions in the Americas, 1981–1984.* Washington, D.C., Scientific Publication No. 500, 1986.
[b]*Source: World Drug Market Manual,* 1987.
[c]Data from 1983. *Source: World Drug Market Manual,* 1987.
[d]Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama average.

valuated their currencies in recent years. Other factors causing this trend need to be analyzed, such as a possible change in the profile of products utilized, the economic crisis, and so on. In this respect, extended health services coverage, changes in the profile of prevalent diseases, and lack of therapeutic models for their treatment would suggest that per capita expenditure on drugs has increased. In addition, the purchasing power of local currencies has declined, the prices of drugs have gone up, and, in many cases, there is no national drug pricing policy.

The pharmaceuticals market is another indicator of the impact of the economic crisis. In 1987, the Region's pharmaceuticals market constituted 32.8% of the world market, 29.2% of which corresponded to North America and only 3.6% to South America. (In 1980, the latter's share was 6.5%; thus, there was a decline of 2.9% over a seven-year period.)

According to estimates of the Latin American Pharmaceutical Industry Association, five groups of drugs account for one-third of total expenditure. Antibiotics come first, reflecting a high incidence of infectious diseases and, probably, indiscriminate use of these drugs. In second and third place are cough and cold medicines, many of them of doubtful efficacy, as are analgesics and vitamins, which occupy fourth and fifth place. This means that 15% of the cost of these five groups of drugs (approximately $US630 million) is for products whose effectiveness is dubious. On the other hand, metamizole (or dipyrone)—which in many countries has been removed from the market or had restrictions placed on its use because it causes agranulocytosis—was the drug that sold most in Latin America in 1985; in addition, cimetidine and lincomycin were among the ten leading products, although the former is very expensive and use of the latter is restricted. These anomalies underscore the urgent need for usage studies to improve consumer awareness and physician prescription practices.

Many obstacles in relation to drugs can be overcome at the local health care level, as long as the operational and managerial capacity are developed to seek and apply the solutions required by the current situation. In the coming years, countries of the Region will have to address issues involving the availability of drugs, the development of pharmaceutical services, and the establishment of multidisciplinary teams to deal with matters related to drugs.

Production and Quality Control of Biologicals

National production of biologicals varies from country to country. Canada and the United States of America are capable of producing all the EPI vaccines and are totally self-sufficient in that regard. Mexico is the only country in Latin America capable of producing all the EPI vaccines and meets over 60% of its needs. In Central America and the Caribbean, Cuba is the only country with facilities for producing vaccines. While some countries in South America have a production capacity, they satisfy less than 50% of their own needs.

In 1984, nine countries in Latin America and the Caribbean were capable of producing bacterial vaccines such as DPT, DT, and BCG (Table 31). The production capacity in those countries, which totals some 60 million doses, is for the most part greater than the quantities actually produced.

In 1989, only two countries—Brazil and Mexico—produced viral vaccines for the EPI in Latin America (Table 32). Mexico is the only country with production capability for oral polio vaccine. Brazil packages vaccines imported in bulk from Europe and is the only Latin American country to produce a vaccine approved by WHO for yellow fever. As is the case with bacterial vaccines, production capacity is greater than the actual amounts produced.

By 1990, an estimated 15 million newborns and 18 million pregnant women in Latin America and the Caribbean will require immunization. In order to provide complete coverage to these women and children, some 71 million doses of viral vaccines and 135 million doses of bacterial vaccines will be needed (Table 33).

The laboratories of Latin America meet some of their needs for rabies vaccine with their own production and

TABLE 31

Countries that produce bacterial vaccines by type of vaccine, Latin America, 1984.

Vaccine	Type	Country	Strain
BCG	Lyophilized	Argentina	Paris 1173
		Brazil	Moreau
		Cuba	Moreau
		Mexico	Copen. 1331
	Liquid	Ecuador	Gothenburg
		Uruguay	Paris 1173
DPT	Tissue culture	Brazil	..
		Chile	
		Mexico	
		Venezuela	
DT	Conventional methods	Argentina	..
		Brazil	
		Chile	
		Colombia	
		Cuba	
		Ecuador	
		Venezuela	
Tetanus toxoid	Tissue culture	Brazil	..
		Mexico	

TABLE 32

Countries that produce viral vaccines by type of vaccine, Latin America, 1989.

Vaccine	Country[a]	Strains	Annual production[b]
Polio (oral) serotypes I, II, III	Brazil	Sabin	Only packaged[c]
	Mexico	Sabin	10–12
Measles	Brazil	CAM-70	9
	Mexico	Edmonston-Zagreb	6
Yellow fever	Brazil	17D	...

[a]National Institute of Virology, General Management of Biologicals and Reagents in Mexico, and Bio Manguinhos/FIOCRUZ in Brazil.
[b]Millions of doses.
[c]Packaging of bulk vaccines acquired in the international market.

TABLE 33

Estimated needs and production capacity in 1990 of EPI vaccines (in millions of doses).

Vaccines	Estimated needs 1990[a]	Production capacity 1990	
		Nominal installed	Real
Polio	53	30	14
Measles	24	18	14
DPT	70	33	14
TT[b]	50	26	14
BCG	30	30	26

[a]For children under 1 year, calculations based on 15 million children plus 20% waste.
[b]18 million pregnant women estimated for 1990.

depend on imports for the rest. Vaccine for human use produced in the laboratories of Latin America is obtained from suckling mouse brain (SMB) culture, while vaccine produced in human diploid or Vero cells is imported on a limited scale, at high cost.

The production of vaccines for use in canines is insufficient; vaccine is obtained using viral culture in both SMB and cell lines. Recently, Colombia has begun producing rabies vaccine, primarily in Vero cells using continuous culture with microcarriers. It is hoped that this important technological advance can be applied to the production of rabies vaccine for human use, following procedures approved by WHO.

Six countries (Argentina, Brazil, Colombia, Costa Rica, Mexico, and Venezuela) produce antivenomous sera for treating snake bites and arthropod stings, which constitute a major health problem in rural areas throughout the hemisphere. Major production efforts are under way in Brazil and Costa Rica, where facilities have been totally renovated to boost production capacity. The wide variety of species of poisonous animals in the Region limits the application of these sera to the geographic areas inhabited by the species used in producing the antisera.

Four countries (Argentina, Brazil, Cuba, and Mexico) have facilities for fractionating plasma and producing blood derivatives, with a limited capacity for self-sufficiency. Currently, measures are being adopted to guarantee that donated blood poses no risk of transmitting AIDS, hepatitis B, Chagas' disease, or other diseases.

For the most part, producers face various problems that make it difficult for them to achieve uniform production of sufficient quantities of quality biologicals. As a result, the supply of quality vaccines at the national level is limited and vaccines produced locally are more expensive than those imported.

The greatest obstacles to achieving the goal of regional self-reliance in the production of biologicals stem from the lack of financial resources. In most countries, such production is not high on the list of national priorities for health investment, which makes it difficult to attract highly qualified personnel. Procurement and maintenance of the expensive equipment necessary for production and lack of modern administrative procedures pose further problems. It is necessary to have an administrative system that permits operational flexibility, facilitates importing the necessary supplies, provides incentives for professionals, and makes available resources for applied research and technological development for improving production. Although several countries in the Region invest substantially in research in the field of biotechnology, in some cases national coordination is lacking between support for research and support provided to the production of biologicals for health programs.

Another obstacle to the production of vaccines is the lack of coordination between the producers and users at the ministerial level in programming production needs. In some cases, this problem stands in the way of allocating adequate funds to the national laboratories that would enable them to import essential supplies; the lack of timely access to funds, in turn, frustrates the production process, which can be lengthy—as in the case of the 10 to 12 months required to prepare polio vaccine.

Other obstacles to producing biologicals in accordance with the requirements established by WHO have to do with shortcomings in the quality control of laboratories, since most of the producer countries lack an appropriate national structure that would enable them to control and

guarantee the quality of the products they manufacture and those they purchase on the international market.

Factors that aggravate deficiencies in quality control include shortages of the necessary animals and reagents. Colonies of animals with a minimum of biological variations must be established to carry out the necessary tests; in that regard, the production of laboratory animals is improving considerably in Brazil, Cuba, and Mexico. In addition, reagents need to be standardized in order to evaluate the activity of the vaccines and to carry out reproducible tests. Currently, PAHO helps the countries acquire reagents from regional and international sources.

PAHO maintains strict control of vaccines acquired through the EPI Revolving Fund, beginning with supplier selection. Laboratory manufacturing procedures and the products are inspected; also, potency of the vaccines is monitored at the point of delivery and in national storage installations. A network of public health laboratories was established to cooperate in surveillance of vaccine quality; the laboratories are responsible for verifying the potency of viral and bacterial vaccines. In Mexico, the National Public Health Laboratory and the General Office of Biologicals and Reagents—with their two laboratories for vaccine production, the National Institute of Virology and the National Institute of Hygiene—collaborate at the subregional level in laboratory development by training personnel. At the regional level, quality control of vaccines is coordinated from PAHO Headquarters in Washington, D.C. That coordination involves verification of vaccine potency at three reference laboratories established by PAHO: the Center for Biologics Evaluation and Research of the Food and Drug Administration of the United States of America, which controls both viral vaccines (poliomyelitis, measles, rubeola, mumps, and yellow fever) and bacterial vaccines (DPT, DT, and TT); the National Institute of Virology/ General Office of Biologicals and Reagents of the Secretariat of Health of Mexico, which controls viral vaccines (poliomyelitis, measles, and, occasionally, rubeola and mumps); and the Pan American Zoonoses Center, Argentina, which controls rabies vaccine, BCG, and PPD. In addition, the National Public Health Laboratory of the Secretariat of Health of Mexico is sometimes used for control of polio, measles, DPT, TT, and DT vaccines.

Production of Services

The production of health care services has been estimated on the basis of hospital discharges and outpatient consultations or services in outside offices. For operational use, the idea of the "discharge" is not very difficult to interpret, but "consultation" poses problems, since some services include only outside consultations involving a physician as such, while others consider outpatient services provided by physicians, nurses, aides, auxiliaries, and others.

Hospital Discharges

Data regarding total hospital discharges in the countries of the Region were obtained from various sources and adjusted to make them more consistent. Special country reports were consulted, together with statistical bulletins published by health sector institutions (ministries, social security institutions, national bureaus of statistics). Despite efforts to gather as much information as possible, data are still partial for most of the countries for which information could be obtained.

The indicator "discharges per 100 population" has greater credibility in Ecuador, with 4.8; Honduras, with 3.1; Paraguay, with 2.9; Cuba, with 15.8; and Nicaragua, with 6.3, because it was possible to obtain the number of discharges produced by each of the health subsectors. In Cuba and Nicaragua, which have single, integrated health systems, the information was consolidated in the production of discharges. In the remaining countries information was obtained from public and social security subsectors, as well as from the private subsector, other semipublic institutions, and the nonprofit private sector (Table 34).

Analysis of information on discharges per 100 population in the various subsectors is hindered by the inability to determine the size of the populations covered by each. Nevertheless, in Mexico it has been possible to determine that the rate of discharges per 100 population is 2.2 for the population not covered by social security and 5.4 for the covered population.

In some countries, such as Paraguay, Uruguay, and the Dominican Republic, the number of discharges produced by the social security systems is estimated on the basis of those produced by the ministries of health. In Costa Rica, since the Costa Rican Social Security Fund controls the entire hospital system, discharges recorded are estimated to account for 90% of all hospitalization activities of the Ministry of Health and the Fund; in that country there are 11.2 discharges per 100 population per year, not counting discharges by the private subsector and semipublic institutions.

Outpatient Consultations

In addition to the problems in analyzing information related to discharges, information regarding outpatient consultations is complicated by the various standards adopted in the countries to define such consultations.

TABLE 34

Hospital discharges and rate per 100 population, by country, around 1987.

Country	Year	Discharges	Rate
Argentina[a]	1987	1,445,099	4.6
Bahamas	1988	21,069	8.5
Chile	1987	1,241,500	10.5
Colombia	1988	1,847,483	6.2
Costa Rica	1987	313,871	11.2
Cuba	1987	1,582,801	15.8
Dominican Republic[b]	1987	309,968	4.6
Ecuador	1987	471,441	4.8
El Salvador[c]	1986	199,830	4.0
Guatemala	1987	119,743	2.6
Honduras[d,e]	1988	182,562	3.1
Jamaica	1987	133,019	3.3
Mexico	1986	2,986,850	3.6
Nicaragua	1987	222,639	6.3
Panama	1987	181,780	7.9
Paraguay[f]	1987	156,796	2.9
Peru	1983	527,536	2.5
St. Kitts and Nevis	1987	4,149	8.7
Trinidad and Tobago	1987	8,313	0.7
United States of America	1986	1,947,200	0.8
Uruguay[g]	1987	286,100	9.4
Venezuela[h]	1987	916,107	5.1

Sources:
[a]For public subsector health services (national, provincial, and municipal).
[b]Office of Statistics, Dominican Social Security Institute.
[c]Ministry of Public Health, 1986.
[d]Health statistics and information bulletin, 1987–1988, Ministry of Public Health.
[e]Without information from the Honduras Social Security Institute.
[f]Department of Biostatistics, Ministry of Public Health and Social Welfare. The data correspond to 4,440 acute care establishments.
[g]Division of Statistics, Ministry of Public Health.
[h]Country report, discharges from the Ministry of Health and Social Welfare.
Note: Information for all subsectors is available only for Colombia, Ecuador, Honduras, and Paraguay.

The fact that it is impossible to categorize the various kinds of consultations (general, specialized, emergency) causes problems in determining the real magnitude of so-called "emergency consultations." This situation occurs because in most of the countries these services offer outpatient consultations for cases in which the demand is unmet or "rejected" by the regular outpatient services.

Most of the countries have not yet made inquiries to determine the "demand profile" of outside consultations. Nevertheless, as local health systems are consolidated and since local programming specifies that such information be obtained, it will become necessary to establish methodologies to do so.

Table 35 shows the consultations recorded in 1988 and the rate of consultations per population in selected countries.

Environmental Health Infrastructure

Environmental health, which is understood as the balance that should exist between man and the environment to make it possible to promote and maintain health and well-being, has always concerned health authorities in the countries of the Region. Several national sectors—among them, housing, urban development, public works, natural resources, agriculture, and labor—likewise have respon-

TABLE 35

Consultations and rate of consultations per inhabitant, selected countries, 1988.

Country	Consultations	Rate
Southern Cone		
Argentina[a]	41,342,264	1.30
Chile	37,901,892	3.10
Paraguay	3,027,420	7.70
Uruguay[b]	10,833,899	3.50
Andean Area		
Bolivia[c]	4,071,178	0.60
Colombia	16,924,449	0.56
Ecuador	5,411,622	0.80
Peru[d]	40,569,000	1.96
Venezuela[e]	39,388,510	2.15
Latin Caribbean		
Cuba[f]	65,267,567	6.50
Central American Isthmus		
Costa Rica	7,414,751	3.02
El Salvador	1,165,828	0.23
Guatemala	3,767,249	0.16
Honduras	4,911,949	1.09
Nicaragua	6,262,201	1.80
Panama	5,977,713	2.63
Caribbean		
Bahamas	1,023,000	2.10
Barbados	422,445	1.60
Jamaica[g]	2,421,800	2.10

[a]State services only.
[b]Data for 1986.
[c]Data for 1984. Ambulatory care establishments only.
[d]Data for 1987.
[e]Does not include the insured population.
[f]Data for 1987.
[g]Data from 1982. Does not include 454,074 hospital consultations.

sibilities in this area. Thus, ministries responsible for provision of water supply and sanitation services, housing, water resource management, environmental pollution control, and other environmental operations have important ties to health. Municipalities also play an important role, since they manage and operate these services, as well as solid waste collection and disposal.

Most of the countries lack administrative units that are specifically responsible for the environment and, moreover, have no coordinating mechanisms to facilitate intersectoral action. Some countries have assigned these functions to ministries of the environment or to special units under certain ministries, such as planning. Others have established units responsible for administrative actions in environmental affairs within the office of the executive head of government. Not surprisingly, the health aspects of the environment receive too little attention under such arrangements. Furthermore, the structure of the health ministries needs to be strengthened before it can effectively deal with environmental health considerations.

The health ministries' public health concerns include environmental management, health promotion, sanitary control, and health education. They tend to focus on the traditional aspects of environmental sanitation—rural drinking water supply and sanitation—and pay less attention to contemporary problems, such as environmental pollution. Therefore, activities that deal with environmental health problems that affect the urban areas, and that are of primary importance, are limited.

Environmental health institutions are attempting to improve their personnel management practices by better identifying and meeting their staffing requirements. However, low wages tend to favor constant staff turnover, making it necessary for institutions to continually recruit, select, and train new employees.

The improvement of environmental health, therefore, is predicated on the ability of national health systems to find solutions to institutional, financial, planning, coordination, legislative, and other problems. Costa Rica and Venezuela are two countries that have set up special comprehensive environmental health units, and, similarly, Mexico recently established a General Bureau of Environmental Health under the Secretariat for Health.

In recent years the Region has increased the number of training courses for sanitary and environmental engineers. Currently under way are 18 undergraduate courses, 28 graduate courses, and 4 courses specializing in sanitary, environmental, and public health engineering, with an annual capacity of 870, 445, and 80 students, respectively. In addition, environmental issues have begun to be included more regularly in natural and social sciences curricula. PAHO has compiled information on these programs in the *Directorio de Programas de Ingeniería Sanitaria y Ambiental en América Latina y el Caribe*. Along with formal education, several countries conduct programs to train sanitary inspectors for various environmental health activities, and others train these personnel through institutional short courses.

Water and Wastewater Disposal Services

Many countries of the Region do not have an appropriate institutional system to handle drinking water and waste disposal needs, and duties to be performed at the various political and geographic levels are not defined. To remedy this problem, and since these needs are local by nature, some countries—among them, Argentina, Brazil, Colombia, and Mexico—opted to strengthen institutional systems that would make it possible to decentralize operations and, to a lesser extent, decisions on investment at the regional, state, or municipal level.

Water and sewerage institutions are seriously affected by the frequent turnover of high- and mid-level executives. Those institutions that have maintained a relatively stable administration have progressed further and have been better able to secure financing.

Most of the countries developed national water and sanitation plans in the 1980s, but they have not always succeeded in implementing them. A major constraint would appear to be the lack of an institutional system for the sector and failure to determine the financial and operational mechanisms necessary for carrying out the plans.

In general, the sector has depended mainly on the central government to finance capital investments and, to a lesser extent, operational costs. In many instances this has caused authorities to become accustomed to depending on subsidies or low-interest loans and to consider these resources free. That perception has resulted in unrealistic project planning, has thwarted efforts to improve operational efficiency, and has made it difficult to charge rates that reflect the real cost of the service. Hardly any country in Latin America and the Caribbean has found mechanisms that will enable it to guarantee a steady flow of funds for investment in the sector. This seriously hampers its development, in view of the fact that in several countries high fiscal deficits are restricting public investments in general.

Among the major obstacles to rapid and consistent development of the sector are a lack of qualified human resources and of training programs that are critical for sector progress. In many countries, however, the training programs that have been established do not help improve the performance of sector institutions. The sector needs to elaborate upon those mechanisms responsible for planning projected demands with regard to human resources, to inform institutions accordingly, and to stimulate the supply of the education sector.

The countries of the Region are increasingly aware of the importance of community participation and health education for the installation, operations, and maintenance of water and sanitation services. However, these strategies are difficult to undertake in urban communities and the outlying areas of large urban centers, whereas the active participation of the community has always been a traditional feature of life in rural areas. When the community is not involved from the beginning of a project, the installed water and sewerage systems may not be fully utilized, either because the users have not received health education or because they cannot meet the cost of the systems and connections. As a result, users do not tap into the system or do so illegally, obstructing the administration of services and, more important, hampering the improvement of community living and health standards. Central governments, however, are increasingly less able to finance capital investments, and in their stead, users themselves have to pay a growing proportion of sector investments. This factor alone can be expected to strongly influence sector institutions to realize the importance of community participation and health education in the urban centers.

Urban Refuse Collection Services

Throughout the Region, 40% of municipalities have established independent municipal refuse collection enterprises, while 60% remain under the administrative structure of the local government. The trend in the Region is toward the establishment of financially independent enterprises that can expedite purchasing and maintenance operations. Financial independence appears to be one of the main problems, since 42% of the cities have satisfactory incomes (an income/cost ratio of 0.68 to 1), 21% have fair incomes (0.34 to 0.67), and 36% have almost fully subsidized services. The main problem stems from the reluctance of the political authorities to increase collection rates. Moreover, although the municipality or its enterprise for administrative, political, and planning activities continues to be responsible, there is an increasing trend toward providing concessions to private enterprises for performing the service—as has been observed in 30% of the 17 Latin American cities studied.

The number of urban refuse collection personnel is estimated at 500,000 official and unofficial workers, almost all of whom are poorly qualified. To redress that situation, mid- and high-level authorities in some cities have initiated courses and seminars. Some countries have tried to organize a central unit to provide technical advisory services, offer courses, and hold meetings to mobilize resources. Others have prepared national assessments and a draft national plan for solid wastes. Unfortunately, in most cases these plans have not worked because of insufficient political and financial support and the consequent inability of municipalities to implement the measures recommended; thus far, only two countries, Cuba and Chile, have been successful.

The problem is not as serious in the rural areas, where domestic trash is largely organic and is used to feed animals. In those areas, the most appropriate strategy to keep the accumulation of refuse from becoming a problem is community health education.

Environmental Pollution Management

The countries need laws, trained personnel, well-equipped laboratories, and other facilities to conduct environmental control programs. To provide better guidance in developing the regional program for control of

environmental pollution and chemical safety, a survey was conducted in the Americas as part of a worldwide effort. Information was sought on environmental legislation, environmental economic and health standards, human resources, laboratories, control strategies, participation by the health ministries in environmental matters, and intersectoral coordination. The survey was conducted in two stages, in 1984 and in 1989, and covered 11 countries: Brazil, Chile, Colombia, Costa Rica, El Salvador, Guyana, Honduras, Jamaica, Mexico, Nicaragua, and Peru. It became clear that substantial legislative progress was made from 1984 to 1989, and in several countries laws were passed to protect human health and the environment in general. Of the 11 countries, only El Salvador, Guyana, and Nicaragua still had incomplete environmental legislation. Development of environmental quality standards requires suitable environmental legislation. A number of countries—El Salvador, Guyana, Honduras, Jamaica, and Nicaragua, among them—still lack standards in some areas. The ministries of health of the Region's countries generally have a limited or minimal capacity to respond to environmental problems, and, in general, they lack human resources trained for the protection of environmental health.

Even though the survey information did not cover the entire Region, preliminary indications are that governments are generally aware of the danger that environmental pollution and the production and use of chemical products pose for public health. Nevertheless, the infrastructure available to them for dealing with these problems is weak.

Bearing in mind that protection of the environment calls for interinstitutional and intersectoral coordination, the Pan American Center for Human Ecology and Health (ECO) has promoted the development of ecology and health projects (PROECOS). Established thus far are PROECO Air in São Paulo, Brazil, which studies the impact of air pollution on health; PROECO Dams in Argentina, which studies the effects that the development of large water reservoirs have on health; and PROECO Pesticides in Colombia, which studies the effect of pesticide use on health.

Occupational Health

In some countries—as in Bolivia, Brazil, Chile, Cuba, and Peru—the occupational health infrastructure includes specialized institutes devoted exclusively to workers' health. In Brazil, FUNDACENTRO is under the Ministry of Labor, and in the other countries the occupational health institutes are under the ministries of health.

In all the countries, responsibility for workers' health is divided among the ministries of labor and of health and the social security institutions. The ministries of labor have duties related to legislation, monitoring, and inspection. The ministries of health and social security institutions serve individuals, especially the ill. Moreover, this infrastructure includes health services of industrial enterprises that normally function only in large establishments and serve a small number of workers. In most of the countries, the social security institution diagnoses, treats, rehabilitates, and compensates individuals affected by occupational diseases. In some cases, medical units have been established at work sites to perform preventive activities. Health services under the ministries of health are mainly responsible for health promotion and job safety, in addition to the necessary clinical care.

For a long time, Argentina, Brazil, Colombia, Cuba, Mexico, and Peru have been training specialists in occupational health (engineers, physicians, nurses, and inspectors). Several initiatives have been taken to foster the training of specialized human resources, including the following: the International Course on Occupational Health, given by the University of Chile; the Course on Specialization in Occupational Health and the Master's Program in Occupational Health of the Universidad Mayor de San Marcos, Peru; the Master's Program in Occupational Health of the Autonomous University of Santo Domingo, Dominican Republic; the Master's Program in Occupational Health of the University of Carabobo and the School of Malariology, Venezuela; and the Graduate Course in Occupational Health in Barranquilla, Bogotá, and Medellín, Colombia. A master's program in occupational health is also being organized in Bolivia.

Some countries also are trying to include the subject of occupational health in their educational programs, mainly in public health courses. In recent years there has been a gradual increase in the number of short courses that provide professional refresher training for individuals who work in the occupational health field. Also, several official meetings have been held to share experiences at the national and international level.

National occupational health development plans have been prepared in Brazil, Ecuador, Guatemala, Honduras, and Mexico, and interinstitutional committees have been established to prepare such plans in Bolivia, Panama, and Peru. In the Central American countries and the Dominican Republic a study is under way to analyze the current situation, as a first step in an effort to broaden workers' health coverage.

In Colombia, in addition to the National Occupational Health Plan established in 1985, intensified efforts also have focused on broadening coverage, including preparation of a project for the design and testing of occupational health care models.

Although all the countries of the Region have legislation on workers' health, compliance is very limited. Moreover, this legislation is often based on current concepts and on international recommendations and conventions and covers only a small percentage of the active population, namely, those who work in the largest enterprises. Several countries mandate that enterprises having from 100 to 250 workers organize health services on the job; under these conditions such services may succeed in covering close to 10% of the active population. All the countries also have legislation for the organization of mixed committees on job hygiene, safety, and health, which—depending on the country—is compulsory for enterprises with more than 10, 20, or 25 workers. Since these committees have the potential to promote the health of workers, their compliance with the laws and regulations guiding them should be closely supervised because roughly one-third of the active population could thus be covered. However, workers in small and family-owned businesses account for most of the labor force and, as is the case with workers in the unofficial sector, they are not protected by legal provisions.

Laboratories for Analysis of Chemical Substances and Toxicology Laboratories

Many laboratories are devoted to analyzing the quality of water, food, and sewage. A few laboratories are responsible for analyses to assess air quality and air in work environments; others are devoted to toxicological analysis. A Pan American Center for Human Ecology and Health (ECO) publication on laboratories and institutions working in toxicology in Latin America (which is not exhaustive) includes toxicology laboratories in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Guatemala, Nicaragua, Peru, and Venezuela.

An assessment of the Regional Program on Chemical Safety was conducted with the participation of Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Peru, and Venezuela. In general, those countries have laboratories for the analysis of chemicals and others for toxicological analysis that are not always suitably equipped and that occasionally are understaffed. Activities at the national and regional levels are for the most part uncoordinated. Laboratories have operational problems related to sustaining an appropriate supply of resources, especially high-quality reagents.

Other problems relate to the quality of analytical data obtained in the laboratories. The Regional Network for Cooperation in Toxicology—in which the major participants are Argentina, Brazil, Colombia, Cuba, Mexico, and Peru—encourages use of uniform analytical techniques in laboratories for toxicological analysis and analytical quality control.

Some progress has been made in improving the chemical analysis of water samples, but little has been achieved with regard to toxicological analysis. An assessment of the suitability of 44 national laboratories of the Global Environmental Monitoring System (GEMS)/Water program conducted in 1983 found serious problems with the values obtained in analyses performed as part of the program. For example, of the 1,848 analyses of metals requested, only 363 could be used, and of these, 222 (61%) were beyond acceptable limits of reliability. Only three laboratories could analyze certain pesticides, and none reported data on polychlorobiphenyls and volatile and flammable organic substances (for example, benzene and toluene). These results cast doubt on the validity of other data provided by these laboratories.

Science and Technology in Health

Trends in Health Research

The economic crisis that assailed most of the countries in the Region during the 1980s called attention to structural problems in the development models that had been adopted in earlier decades. The outflow of capital to pay external debts, falling exchange rates, inflation, restrictive "adjustment" measures, and other circumstances combined to produce an untenable situation characterized by great economic deterioration with severe social repercussions. Even during previous periods of rapid economic expansion—sometimes called "miracles"—poverty and misery continued to increase, showing that the existing socioeconomic structures were unable to ensure a socially just distribution of the fruits of development.

If economic growth is to get back on track within a context of democratic transition, it will be necessary to overcome the barriers that historically have prevented the use of wealth to improve people's well-being. On top of this challenge, the new development models must also be able to respond to shifts in the productive base at the world level brought about by the introduction of new technologies, raw materials, and forms of productive organization. These changes have created fresh paradigms for the countries' and regions' participation in the international division of labor and production.

The relative advantages that historically have contributed to Latin America's industrialization, such as the abundance of natural resources and inexpensive labor, are losing their significance as new industrial processes override, or at least reduce, the importance of these factors. This new, cumulative dynamic makes it impossible

to persist in thinking that the crisis is temporary and that with a few adjustment measures—but without any changes in obsolete forms of production, organization, and exchange—growth will be able to resume.

In order to overcome the crisis, it will be necessary to radically revise the development models so that, in addition to being based on the fundamental values of democracy and social justice, they will also emphasize the role of scientific and technical development. The survival of traditional industries in Latin America will be contingent on their ability to change, develop, and selectively absorb technologies; restructure their processes; and mobilize investments. The incorporation of new technologies will be a crucial factor in this revision. Decisions on how to obtain, develop, and use them are essential to creating the technological base in the Region's countries that will make it possible to increase their range of action as sovereign nations both now and in the future. In a number of scientific, technical, and political international forums, the Western Hemisphere's political and intellectual leaders have emphasized that the Region's readmission to the world order will necessarily hinge on massive and generalized incorporation of the technological revolution into the countries' economic and social systems.

Several characteristics in the field of health and its related scientific disciplines favor involvement in the effort to lend dynamic impetus to scientific and technological development in the countries of the Region. Given their accumulated experiences, areas such as biotechnology, pharmaceuticals and drugs, immunobiologicals, and medical equipment offer interesting possibilities in this sense, and their full development will depend basically on political will and on concerted action among the principals working in these disciplines.

Scientific and technical development in health, in addition to reducing the sector's dependence on strategic inputs, as mentioned above, is being recognized as a key factor in supporting the process of reorganizing the national health systems so that they will be more equitable and more socially efficient and effective. Despite the explicit recognition of science and technology's importance in the health field, and the existence of State agencies specifically devoted to their promotion, the sector has encountered many economic difficulties, particularly the reduction of public spending, since the development and maintenance of a scientific and technical infrastructure depend essentially on investments by the State. Almost no country in the Region has even come close to the United Nations' recommended goal of 1% of GDP for expenditures on research and development. On the contrary, the trend has been in the opposite direction in recent years. Table 36 shows the negative impact of the crisis on these expenditures in several countries of the Region over the period 1981–1983. In all the countries there were sharp cutbacks, particularly between 1982 and 1983, with the exception of Mexico, where there was a recovery in 1984.

It is well-known that the Region's statistics on science and technology are deficient. Some would say that this is due to the weak links between science and the productive sector, which means that there is no clear mandate to evaluate the relevance, quality, and impact of scientific production so that it can be oriented toward meeting specific demands.

Few countries in the Region have regular information systems that are reliable and have adequate coverage. Most of them gather data through periodic costly and low-coverage surveys that are not very reliable and that rapidly become obsolete. In addition, the systems suffer from limitations inherent in their input/output approach, which reflects the view that specific resources (human, material, financial, etc.) should correspond to specific outputs (articles, patents, etc.), without any regard for the laws that regulate the development of science and derive from its role within a given social structure. Such an approach apparently ignores the existence of these social determinants and looks at science from a perspective that totally fails to take its history into account. As a result, there is no room for the development of adequate new indicators with which to evaluate scientific activity and understand the effect of economic, political, and social factors on its dynamics.

An alternative approach would be to recognize that the volume and the characteristics of scientific production have a major influence on social conditions—and at the same time are conditioned by them. Such production affects the ways in which the production of goods and services is organized, the degree of development of productive forces, and society's levels of education and culture. This approach would also acknowledge that the development of science is determined by material factors that are linked to social life and also by logic and knowledge intrinsic to science, which endow this development with its own dynamism and relative autonomy. On the basis of this approach, PAHO is supporting studies on the status of health research in five countries (Argentina, Brazil, Cuba, Mexico, and Venezuela). These studies will look at the relationships among socioeconomic conditions, scientific and technical potential, and scientific production. They also aim at establishing the proper bases so that, starting in 1990, new indicators and information systems can be developed that will meet the organizational needs of scientific activity in health.

Regarding currently available data, the information on inputs presents the most problems in terms of validity and reliability, because the lack of well-established parameters for the appropriation of funds in science and technology, for an operational definition of investigator

TABLE 36

Economic, scientific, and technological indicators for five Latin American countries, 1979–1984.

Country/indicators	1979	1980	1981	1982	1983	1984
Brazil						
Per capita GDP (1970 $US)	846	887	853	842	798	808
GDP annual growth rate	...	7.2	−1.6	1	−3.2	3.6
Expenditure for research and development (millions $US)	261.6	1,347.2	1,644.1	1,862.4	1,475.3	1,231.2
Mexico						
Per capita GDP (1970 $US)	1,295	1,366	1,436	1,391	1,284	1,280
GDP annual growth rate	...	8.4	3	−0.5	−5.3	−2.3
Expenditure for research and development (millions $US)[a]	416.3	671.5	876.1	795.1	591.9	978.1
Chile						
Per capita GDP (1970 $US)	984	1,045	1,088	917	895	927
GDP annual growth rate	...	7.8	5.7	−14.4	−0.8	5.3
Expenditure for research and development (millions $US)	92.4	119.6	123.6	95.8	...	...
Peru						
Per capita GDP (1970 $US)	682	690	690	683	593	590
GDP annual growth rate	...	3.9	3.9	0.4	−10.9	3.5
Expenditure for research and development (millions $US)[b]	...	64.2	69.8	59.1	52.3	30
Venezuela						
Per capita GDP (1970 $US)	1,380	1,310	1,267	1,239	1,147	1,097
GDP annual growth rate	...	−2.0	−0.8	0.7	−4.8	−1.7
Expenditures for research and development (miilions $US)	14.9	18.8	22.8	22.8	19.9	19.1

[a]Corresponds to the Federal Government's expenditure for science and technology.
[b]The 1980 expenditure has been calculated according to the percentage of researchers out of the total number of scientists in each implementation sector. The figures for 1981, 1982, and 1983 correspond to expenditures in science and technology investments for national universities and government research institutes.
Source: F. R. Sagasti and C. Cook, *Tiempos difíciles: ciencia y tecnología en América Latina durante el decenio de 1980,* Lima, December 1985.

or research institution, and for other criteria makes comparative analyses difficult.

The present section uses data on research production expressed as numbers of published scientific articles. Of course, this indicator has its limitations because the process of knowledge production also involves a series of other outputs, such as manpower training and the development of methodologies, which are not directly reflected in numbers of published articles.

Data on scientific production in the various fields of knowledge have been taken from an IDB report published in 1988, which in turn draws on information provided by the Institute for Scientific Information (ISI) in Philadelphia, Pennsylvania, United States of America. This institution compiles and publishes bibliographical information from all the scientific fields taken from data bases that cover the major internationally recognized scientific journals. In 1980, 17 of the 3,067 journals were Latin American. Taking the address of the first author as the criterion for identifying the country of origin of a scientific article, 0.97% of the articles in this data base as of 1973 were produced in Latin America. If only Third World countries are considered, then Latin America contributed 17% of the articles. As of 1984 the situation had not changed very much: Latin America represented 1.1% (or 3,001) of all the articles published in that year as compared to 1.2% (or 3,412 articles) in 1982—a reduction of 12%. The IDB report emphasizes how small this proportion is, given that Latin America represents 8% of the world's population, 6% of the world's GDP, 11.2% of the population enrolled in higher education, and 2.4% of scientists and engineers. Latin America's scientific output, in addition to being relatively limited, is also very concentrated. Between 1973 and 1984, five countries alone (Argentina, Brazil, Chile, Mexico, and Venezuela) were responsible for nearly 90% of all the publications in Latin America.

In terms of distribution by scientific subject, in 1973–1984 there was a significant shift in the relative weight of specific areas, and Latin America's output assumed a

distribution profile similar to that observed at the world level. For example, clinical medicine and biomedical research declined, respectively, from 37.5% and 22.1% in 1973 to 25.1% and 17.0% in 1984. On the other hand, physics increased from 9.3% to 19.6%, while engineering and technology increased from 2.7% to 4.6%.

The IDB report also includes, as an indicator of the impact of scientific output, the extent to which published works have been cited. Although this is not a very reliable indication of the quality or relevance of scientific output, it does show how well the works are received in the scientific community. As of 1984, the articles published throughout the world in 1973 had been cited 2.6 million times, while those in Latin America had been cited only 15,720 times, or 0.6% of the total (about the same proportion for articles published in 1980). The percentage of total citations is even smaller than the proportion of published articles, which means that while the Region's output is already quite limited, its impact in the world's scientific community is even more restricted.

Table 37 shows the status of some of the indicators of scientific and technological productivity in various countries of Latin America. While productivity in general is low, it also varies widely from country to country. For example, Ecuador and Peru have approximately one published scientific author for every 54 investigators, while Chile has one published author for every 4.2 investigators. Similarly, while in Chile and Costa Rica $US90,000 are invested before an author is published in an international journal, in Ecuador the figure is $US830,000. Comparable discrepancies can be seen in the indicators of technological productivity.

PAHO asked ISI to retrieve health-related scientific articles that were published during 1973–1982 whose first author resided in a Latin American country. The resulting concentration is even greater than for scientific production in general: of the 26,278 articles retrieved for that period, 91.2% were by authors living in Argentina, Brazil, Chile, or Mexico. It is interesting to note that the authors residing in Argentina published in 380 different journals in 1980–1982, but 57% of the articles appeared in only 7 of these journals, and 47% appeared in only 3 Argentine journals. In Brazil during the same period articles were published in 254 journals, yet 46% were published in 7 of them and 30% appeared in only 3 Brazilian journals. The authors living in Mexico published in 304

TABLE 37

Indicators of scientific and technological productivity in several Latin American countries, around 1982.

Country (year)	Projects/ authors	Researchers/ authors	Research and development expenditures[a]/ authors	Projects/ patents[b]	Researchers/ patents[b]	Research and development expenditures[a] patents[b]
Argentina (1982)	7.35	12.38	0.45[c]	7.07[d]	11.91[d]	0.43[c,d]
Brazil (1982)	3.35[e]	13.58	0.75	16.73[d,e]	67.72[d]	3.74[d]
Mexico (1980)	14.62[e]	11.12	0.4	78.67[e]	59.84	2.14
Colombia (1982)	15.81	42.58	0.38	49.19[f]	132.47[f]	1.19[f]
Chile (1982)	2.87	4.18	0.09	43.82[d]	63.8[d]	1.39[d]
Ecuador (1979)	39.71	54.71	0.83	139.0[g]	191.5[g]	2.91[g]
Peru (1980)	48.52	53.98	0.71	118.03[f]	131.3[f]	1.74[f]
Venezuela (1980)	7.94	8.58	0.59	29.82[g]	32.22[g]	2.22[g]
Costa Rica (198l)	12.28	14.17	0.09	56.69[d]	65.38[d]	0.4[d]
Dominican Republic (1980)	29.25	8.33	0.32[h]	50.14[g]	14.29[g]	0.54[g,h]
Cuba (1980)	16.39[i]	134.12	1.51	...	...	...

[a]The research and development expenditure is expressed in millions of current $US.
[b]The number of patents refers to those registered by residents.
[c]The research and development expenditure corresponds to 1980.
[d]The number of patents corresponds to 1980.
[e]The number of projects corresponds to 1984.
[f]The number of patents corresponds to 1979.
[g]The number of patents corresponds to 1978.
[h]The research and development expenditure corresponds to 1981.
[i]The figure corresponds to the subjects of the 77 main research problems.
Source: F. R. Sagasti and C. Cook, *Tiempos difíciles: ciencia y tecnología en América Latina durante el decenio de 1980*, Lima, December 1985.

journals, with 50% of the articles appearing in 7 journals and 47% in 3 Mexican journals.

The profile and trends of scientific production in health in the various related subject areas were analyzed using the data base of the United States National Library of Medicine (NLM). Data were collected for three periods—1966–1971, 1980–1982, and 1986–1987—and the number of articles for each subject area was identified for the world as a whole and for the six countries that represent most of Latin America's production (Argentina, Brazil, Chile, Cuba, Mexico, and Venezuela). The articles in the system are classified according to a list of 15 medical subject headings (MeSH). A single article can be indexed under several of these headings. It is important to keep in mind that this data base defines the origin of the article by the journal's country of publication. In other words, what is being analyzed is what is being published in the periodical literature of a country or group of countries rather than the scientific output of the investigators working in these countries—although for Latin America, as it was pointed out above, much of what is produced is published in the country's own national journals.

Another fact to bear in mind is that the NLM data base covers only the principal journals in the health field, selected by an expert committee on the basis of predefined quality criteria. In 1967 there were 2,282 journals and in 1987, 2,782. Of these, the six countries in question had 104 in 1966 and 41 in 1987. Clearly, this small and declining proportion (from 4.5% to 1.4%) does not give a comprehensive picture of what is being published in the countries' journals, although it does indicate how much of their scientific production is being disseminated worldwide.

A breakdown of the data by subject areas makes it possible to compare the profile of scientific output in the world literature with that in the journals of the six countries. In terms of publications worldwide, the three headings that accounted for the largest number of articles in 1966–1971 were "diseases" (24.8%), "biological sciences" (15.2%), and "chemicals and drugs" (14.2%). During 1986–1987 the same three categories were again the most important ones, but with a decline under "diseases" to 21.7% of all the articles and a relative increase of "biological sciences" and "chemicals and drugs," which went to 17.8% and 15.4%, respectively. In the journals of the six Latin American countries, during 1966–1971 the most important categories were "diseases" (35.7%), "diagnostic techniques, treatment, and equipment" (14.1%), followed by "chemicals and drugs" (11.8%) and "biological sciences" (11.8%). In 1986–1987 the heading "diseases" continued to hold first place but fell to 30.1%, while "biological sciences" was in second place with 15.7%, and "chemicals and drugs" continued to rank third, with 11.1%. On the basis of these profiles and trends, it can be confirmed that the heavy predominance of "diseases" in Latin American publications and the considerably smaller representation of "biological sciences" and "chemicals and drugs" reflect less concern with the study of basic biological phenomena not related directly to the diseases and with the development of pharmaceuticals and drugs. However, the most significant categories are practically the same, and between the periods in question Latin American publications have tended to match the overall trend for world literature.

It is interesting to note the relatively greater interest in the social sciences and health care in the Latin American literature. Under "social sciences" the proportion was 2.5% in 1966–1971 and 2.2% in 1986–1987, while the percentages for publications worldwide in this category were 1.8% and 1.5%, respectively. "Health care" was 5% and 5.5%, versus 4.3% and 3.7% in the world literature. The difference may reflect a greater concern on the part of Latin American scientific research with the organizational and social aspects of health care—or merely a different publication pattern for the Latin American authors in these areas, with a greater trend for investigators in the public health area to publish their contributions in national or regional journals.

In the NLM data base, a comparison of world publications in 1966–1971 with those in 1986–1987 showed an increase of 82.8% in the number of articles, while for the journals in the six selected countries there was a reduction of 25.3%, largely due to the lesser participation of these countries' journals in the data base. In terms of growth, the subject categories that increased the most for the world publications between 1966–1971 and 1986–1987 were "information sciences and communication" (187%) and "biological sciences" (114%). Analysis of the subcategories in this latter case indicates that the ones that increased most dramatically were "chemical and pharmacological phenomena" (304%), "environment and public health" (292%), and "genetics" (203%).

For the Latin American literature (the six largest countries), the only two subject categories that showed positive growth were "information sciences and communication" (126%) and "industrial technology, agriculture, and food" (22.4%), the latter category being the one that grew the least in the world literature (27.4%). Although the heading "biological sciences" fell by 0.41% in the Latin American literature, the subcategory "environment and public health" increased by 149%. Another interesting subcategory is that of "viral diseases," which increased 117% in the world literature (while "diseases" as a whole increased 59.7%) and 17.8% in the Latin American literature (the only subcategory to increase, while the category as a whole declined 37%).

The foregoing data represent only a fraction of the information that can be obtained using quantitative re-

trievals from data bases, bearing in mind the limitations already indicated. This approach yields interesting indications of the situation and trends in Latin American scientific output, and it bears out the importance of these data bases and of the indicators being adapted to various situations in the Region, making it possible to conduct studies on scientific activity in health and related problems and trends.

Scientific and Technical Health Information

The field of scientific and technical health information covers two large components: scientific and technical documentation and information, and scientific publications.

PAHO and WHO have expressed their position on scientific and technical health information through the definition of policies and strategies. For example, in the Seventh General Program of Work Covering the Period 1984–1989, WHO states that it will encourage "resource sharing through the setting up of national health sciences library networks" and that it will foster "cooperation between the national networks at the intercountry, regional, and global levels." The Eighth General Program of Work Covering the Period 1990–1995, in turn, indicates that the Organization will cooperate with countries in "strengthening and modernizing their networks of libraries and information centers."

Recognition of the important role of health care information at the political, programming, and technical cooperation levels, as well as in research and education, led PAHO to establish the Regional Library of Medicine and Health Sciences (BIREME) in 1967 and, subsequently, to transform this institution into the Latin American and Caribbean Center on Health Sciences Information.

In recent years PAHO has taken the position that the management of knowledge is one of the Organization's missions and, accordingly, has given priority to this function among its regional strategies for technical cooperation. This decision was reinforced by the establishment of the Scientific and Technical Health Information Program within the area of Health Systems Infrastructure. This Headquarters program is the regulatory organ for PAHO's information policy for BIREME, which is the specialized center in this area and is responsible for the organization and operation of the Latin American and Caribbean Health Sciences Information Network. This regional system promotes, coordinates, and organizes the national systems, to which PAHO also contributes through the work of its Pan American centers and the different information units at Headquarters. This network makes it possible to share the use of information and documentary resources in a rational way, so as to minimize the rising cost of the enormous volume of information currently being generated in the world. The system is based on the principles of selectivity and cooperation: selectivity, according to which each unit in the system holds the bibliographical material that is expected to meet a reasonable proportion of the demand generated at the institutional level, and cooperation, according to which all the units share their bibliographical and human resources within a systematic approach at the local, national, and regional levels.

This collective effort is aimed at meeting the information needs of the health professional, regardless of his or her level or place of work. It is based on a decentralized cooperative network that encompasses all the existing information units, with voluntary participation at the different levels; it is promoted through active participation by the countries, arising from the political will of their health authorities; it is reinforced by BIREME, which catalyzes this will, promotes efforts, and mobilizes resources so that the cooperative concept will govern the system's activities; and finally, it is supported by low-cost, medium-complexity technologies that will enable all the countries to access its data bases and facilitate the exchange of documents among all the units in the system.

PAHO's goals are to establish national systems in all the countries that do not yet officially have such structures, to strengthen existing national networks, to incorporate the national systems in the joint country/PAHO programming process as an integral part of health services support, and to enlist the collaboration of financing agencies in the development and strengthening of these structures. Table 38 summarizes the status of the national systems or networks of biomedical information in the countries as of 1988.

The main activities in the regional system involve working with LILACS (Latin American and Caribbean Health Sciences Literature), providing bibliographic exchange services, and accessing national and international data bases. The LILACS data base contains the intellectual output of health professionals that has been published in the countries of the Region. It also includes publications and documents prepared by PAHO. All these publications are processed using a common methodology developed by BIREME which is now being transferred to the countries through courses and in-service training. It is a collective effort in which all the national systems contribute by gathering and processing the publications produced in their respective countries and submitting the product of this effort to BIREME. BIREME generates its data base on a compact disc (CD-ROM) and distributes copies of the LILACS/CD-ROM free of charge to all the cooperating institutions, which have been pro-

TABLE 38

Structure of national biomedical information systems or networks (December 1988).

Country and system name[a]	System structure
Bolivia: National Network of Health Science Information (RENICS)	Advisory Committee Technical Group National Coordinating Center 15 subcenters
Brazil: National Network of Health Science Information	Technical Advisory Committee National Coordinating Center 238 incorporated units
Chile: National System of Health Science Information	Advisory Committee System Advisory Committee National Coordinating Center 4 regional subcenters 31 local units
Colombia: Colombian Network of Health Bibliographic Information	Advisory Committee Technical Group National Coordinating Center 26 subcenters
Costa Rica: National Network of Scientific Information in Health	Advisory Committee Technical Group National Coordinating Committee 23 subcenters
Cuba: National System of Medical and Scientific Information	Directorate Director's Council National Coordinating Center 14 provincial centers
Ecuador: National Information System on Health Sciences	Advisory Committee National Coordinating Center
Honduras: Documentary Information Network on Health (REDIDOS)	Interinstitutional Coordinating Committee National Coordinating Center
Mexico: National System of Health Information and Documentation	Technical Group National Coordinating Center 26 subcenters 11 active cooperating centers
Nicaragua: National System of Health Documentation and Information (SINADIS)	National Coordinating Center
Panama: National Network of Biomedical Science Information	National Coordinating Center
Paraguay: National System of Health Information	National Coordinating Center
Peru: Peruvian Network of Health Science Information (RICIS)	Technical Committee National Coordinating Center 27 subcenters
Venezuela: National System of Biomedical Documentation and Information	Advisory Committee National Coordinating Center 40 subcenters

Note: Those countries that have not been included in this table have not yet established a legal instrument or official structures.

vided with the necessary reading equipment. LILACS/CD-ROM is also distributed to institutions outside the Region. Table 39 lists the countries that regularly input data to LILACS. All the countries of the Region are to become part of this collective effort, arrangements to include publications from Spain and Portugal are to be made, and a promotional campaign is to be launched both within and outside the Region so that sales of the LILACS/CD-ROM will generate resources for BIREME and the national information centers.

All the institutions in the national systems share their bibliographical resources through the bibliographical exchange service, which consists of providing photocopies of documents that are not available at the institutional level. During 1985–1988, BIREME delivered more than 280,000 photocopies of journal articles requested by libraries in the regional system. It plans to publish a combined regional catalog of the collections that are deposited in the system's libraries and recorded on CD-ROM and to distribute it to all the biomedical libraries. At the same time, the current telefax network, which has 17 machines installed in 11 countries, will be considerably expanded to facilitate the exchange of documents among the units in the system.

The biomedical journals produced in Latin America and the Caribbean suffered from a triple crisis during the quadrennium: a crisis in the availability of content, especially original articles, which often made it difficult for the journals to appear on a regular basis; a crisis in the validation of content, because of lack of editorial manpower and lack of a peer-review system; and a serious crisis in the financing of the journals. Table 40 gives the number of Latin American and Caribbean biomedical

TABLE 39

Countries, journals, and institutions that "feed" LILACS (December 1988).

Country[a]	Number of journals	Transmittal form	Number of participating institutions
Argentina	25	Hard copy/diskette	13
Bolivia	4	Hard copy	2
Brazil	115	Hard copy/diskette	21
Chile	23	Diskette	3
Costa Rica	7	Diskette	1
Cuba	21	Diskette	1
Dominican Republic	5	Hard copy	1
Ecuador	5	Hard copy	1
Mexico	31	Hard copy	16
Peru	7	Hard copy	3
Uruguay	7	Hard copy	1
Venezuela	41	Diskette	12

[a]The literature produced in countries that are not included in this table is partly processed by BIREME until these countries can take on this task.

TABLE 40

Latin American and Caribbean biomedical journals that have been incorporated into the *Index Medicus* and the *Latin American Index Medicus*, 1988.

Country	*Index Medicus* (NLM)	*Latin American Index Medicus* (BIREME)
Antigua and Barbuda	0	0
Argentina	7	47
Bahamas	0	0
Barbados	0	0
Belize	0	0
Bolivia	0	4
Brazil	15	184
Chile	5	29
Colombia	0	29
Costa Rica	1	7
Cuba	1	16
Dominica	0	0
Dominican Republic	0	5
Ecuador	0	5
El Salvador	0	1
Grenada	0	0
Guatemala	0	1
Guyana	0	0
Haiti	0	0
Honduras	0	1
Jamaica	1	2
Mexico	11	31
Nicaragua	0	1
Panama	1	4
Paraguay	0	2
Peru	0	7
Puerto Rico	2	2
St. Kitts and Nevis	0	0
Saint Lucia	0	0
St. Vincent and the Grenadines	0	0
Trinidad and Tobago	0	0
Uruguay	0	7
Venezuela	3	41
Total	47	426

journals that are included in the *Index Medicus* and the *Latin American Index Medicus.*

Technological Development: Policies and Process

Per capita expenditure on health in the countries of the Region ranged from $US10 in Haiti, Paraguay, and Peru to more than $US100 in Barbados, Panama, Trinidad and Tobago, and Venezuela. These differences result in corresponding differences in the countries' capacity to incorporate technology into the health services.

But more important than the level of expenditure and investment in technology is the governments' ability to implement technological policies that will ensure universal access, give priority to technological coverage that is most effective, and achieve these goals at a reasonable level of expenditure and investment. With broader objectives, these policies could encourage production and promote scientific and technological development at the country level.

Although these policies have not been clearly outlined, some countries, such as Chile, Costa Rica, and Cuba, which have achieved good health indicators, represent examples of how general health policies have helped to ensure access to public health technologies.

The epidemiological transition being experienced by the countries calls for more sophisticated policies and planning systems in order to rationalize the development and application of a wider range of technologies than is now available.

Reflecting this concern, several of the countries have developed the basic institutional capacity to act in this field. For example, Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, Uruguay, and Venezuela have created vice ministries, departments, institutes, centers, nuclei, and programs in the area of health technology that are taking on functions aimed at generating policies and technology management systems.

In order for the countries to progress in this area and to play an active role in scientific and technological development in health, it is necessary for them to be integrated at the international level; to consolidate public and private financing efforts; to integrate the processes of research, development, and production; to set technological standards and priorities; to invest in training technical and management personnel; and to raise the population's basic and specialized education levels.

The countries are beginning to recognize that scientific and technological development in health is an essential component for any national science and technology policy or plan. Colombia is a good example of integration through the work of the Science and Technology Commission, which has recognized health as a major player in the formulation of the national plan.

The key policy issue remains the equitable distribution and access to technology. Studies carried out in Argentina, Ecuador, and Uruguay show serious problems of uneven distribution, both in terms of geography and between the levels and institutions of the sector. Although there is growing awareness of the polarization that exists, so far there is no evidence of policies and mechanisms being formulated that will ensure that the entire population will have equitable access to a specific area of technology.

Colombia, through a national project focusing on decentralization and community action, and that involves the active participation by the municipalities, has defined a service model and measures that will ensure access by the entire population. This unquestionably is a major step on the road to social justice, in which technology is becoming the main parameter.

The countries' investment resources have been limited, and steps are being taken to expand investments through commercial loans and bilateral lines of credit. These experiences have not been analyzed systematically, but there is reliable evidence of the complexity and weaknesses in the countries' technical and negotiating ability in connection with these loans.

Proposals for investments based on multilateral international financing are becoming an increasingly important vehicle for the incorporation of capital-intensive technology. The countries are being forced to improvise technical and management skills in order to cope with the complex task of selecting, procuring, and installing equipment through the offices responsible for project execution. Unfortunately, there has not been much success in accumulating knowledge for its transfer in support of new developments. Argentina, Brazil, and Mexico have initiated a collaborative effort aimed at recovering these experiences and systematizing information so that it will be available for new investment proposals. These countries, and Cuba as well, have built up a sizable industrial infrastructure for supplying the domestic market with equipment and devices, biologicals, and drugs—all of which has been accomplished in the absence of any specific policies for the promotion of this sector.

Purchasing power is another fundamental tool which, if properly used, can help to promote technological development and rationalize the incorporation of technology. A few countries have succeeded in setting a policy and devising an effective system for the acquisition and transfer of technology. Mexico has taken a major step by institutionalizing a consolidated procurement mechanism which uses basic tables and specifications that have been generally agreed on. Brazil, Chile, Colombia, Costa Rica, and Cuba also have undertaken important initiatives in this area.

The quality of imported and national products is not being evaluated, nor is comparative information being used in decision making, although the State's regulatory role with regard to national and imported products is beginning to be identified. Uruguay recently issued a decree that gives the Ministry of Public Health an active role in evaluating and regulating the incorporation of technology. Cuba has taken similar steps. In Brazil it is the Producers' Association that has taken the initiative to establish a program for the quality certification of national products. These examples show that there is a growing concern about standards of quality and safety. As a result of the lack of quality control, many design and manufacturing defects are being passed on to the user; these defects then translate into risks for patients and frequent breakdowns.

There is rapidly growing awareness in the countries that technological development should be treated as a national process, and that it is critical to put together strategies that can be incorporated at the international level. Argentina, Brazil, Cuba, and Mexico are working to establish an intercountry cooperative project to provide information and commercial exchanges, joint production, and collaborative technological development.

ANNEX

TECHNICAL NOTES

General Remarks

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Pan American Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The term "country" as used in this publication also refers to territories or areas.

The order in which countries are listed varies among the tables. Alphabetic sequence was used in some, while in others, countries were grouped by subregions according to the groupings shown in the publication *Health for All in the Year 2000. Strategies* (PAHO Official Document No. 173). Within each group, countries appear in alphabetic sequence (see Table II-1).

The tables of the three annexes that follow contain some reference data on the economic situation, population, and mortality that have been consolidated for the Region. Additional information can be obtained from the text of this volume and from Volume II, which presents reports for each country.

No mention is made in these technical notes of tables that are considered self-explanatory.

Explanation of Symbols

Data not available	. . .
Not applicable	. .
Magnitude zero	—
Magnitude not zero, but less than 0.05	0.0
Provisional data	*

Detailed data and percentages in tables do not necessarily add to the totals shown, due to rounding.

Sources of Data

The information shown in Annex I is based on data from the Inter-American Development Bank. The main source of the demographic information included in Annex II is the United Nations, Department of International Economic and Social Affairs, Population Division and Statistical Office. Estimates and projections for Latin America, published by that institution, were prepared by the Latin American Demography Center (CELADE) in collaboration with the countries. Mortality data by age, sex, and cause included in Annex III were provided to PAHO by the countries through PAHO questionnaires, national publications, magnetic tapes, or other means. These data were supplemented with information from other official government publications; reports of WHO, the United Nations, and its specialized agencies; and other reports.

Completeness of Data

As noted in *Health Conditions in the Americas, 1981–1984*, for many countries the population covered by the information on population and vital events needs to be further clarified. Most of the data presented are from civil registries, and in many countries these registries' coverage is incomplete. Some countries, such as Brazil and Paraguay, publish their natality and mortality data for special areas that are not necessarily representative of the whole country.

In addition, late registration or underregistration of natality and mortality are major problems in some countries. It has been estimated that underregistration of births is greater than 20% in Bolivia, Brazil, and Ecuador, and underregistration of deaths is also greater than 20% in those three countries as well as in Colombia, Dominican Republic, El Salvador, Honduras, Nicaragua, Panama, and Peru.

The quality of information on causes of death is affected by the lack of medical certification and possible errors in diagnosis, certification, coding, and tabulation. Part of this problem is reflected in the proportion of deaths assigned to the category "symptoms, signs, and ill-defined conditions," codes 780–799 of the Ninth Revision of the International Classification of Diseases (ICD–9). This proportion ranges from zero to 48% and exceeds 10% in 16 of the 39 countries of the Region that provided this information. All the above should be taken into account when interpreting the data and making comparisons over time and among countries, particularly in relation to mortality rates by cause (see also the sections on population and mortality in Part I of this volume).

Finally, some discrepancies may exist between the figures shown in this Annex and those appearing in the country chapters in Volume II; these are generally due to late registration, corrections introduced while the publication was in press, or the utilization of different sources.

Annex I: Economic Data. Tables I-1 to I-9

Economic data by country are based on those available from the Inter-American Development Bank. National data have been converted into a single currency, in this case USA dollars, and referenced to a constant year (1988). The method used for conversion is briefly described on pages 459–461 of the IDB publication *Economic and Social Progress in Latin America, 1989 Report*. For most countries the conversion factor used takes into account the trends in exchange rates during the period 1960–1987 and the relation between the implicit price deflator for the country and that for the United States. The procedure used for countries with a constant exchange rate was different, since only the base year used by the country in its national accounts was taken into consideration.

All the tables in this Annex show per capita values for the countries, which were obtained by dividing the total indicator by the estimated population for a given year. For some data the percentage of the gross domestic product, and/or of the aggregate of which it forms part, is also shown.

The following indicators are presented:

Gross domestic product. The total value in goods and services produced by a country's economy. Includes the products of the agricultural, industrial, and service sectors.

Imports. The value of foreign products entering the country.

Gross domestic investment. Encompasses the fixed capital investments in the economy and the net change of values of inventories. Excludes investments made in other countries but financed by the country indicated.

Total consumption. The total expenditure for purchase of goods and services of final consumption. (The total gross domestic product is the sum of government expenditures at all levels, consumption, and investment.)

Total central government expenditure. Includes all payments made by the central government except amortization payments on investments financing and the governmental debt. Government entities included in this calculation vary from country to country, according to the definition of State enterprises.

Central government expenditure on health. Government expenditures at the central level on specific health actions and inputs. The institutions considered for this calculation may vary among countries, as well as the types of expenditure included. Generally, expenditures of other institutions besides the ministry of health or its equivalent are included. Expenditures in physical investment are not always included.

Annex II: Population. Tables II-1 to II-7

Population estimates are based on data from censuses, civil registration, and surveys and use assumptions based on population models. Population projections were calculated by the cohort component method, which takes into account the size and structure, by age and sex, of the population in the base year and uses assumptions of future levels and trends, by age and sex, of the three major components of population change: fertility, mortality, and migration. All estimates and projections used in this publication correspond to the medium variant (see *World Population Prospects 1988*, United Nations, 1989).

These procedures were used for all countries in the Region in which the population size was around 300,000 or more in 1985, as well as for Barbados. For countries with populations less than 300,000, the total population was estimated by applying assumed rates of growth, but the structure by age and sex was not estimated. For this reason most countries with an estimated population size of less than 300,000 as of 1985 are excluded from tables showing population by age (Tables II-5a, II-5b, II-6a, II-6b) and urban-rural distribution (Table II-7). For Belize, estimates of the age and urban-rural distributions of the population were obtained by subtracting the sum of the populations of the other countries of the subregion from the subregional population total.

Definitions of some demographic terms follow.

Natural rate of increase. The difference between the crude birth rate and the crude death rate in a year.

Geometric growth rate. The growth rate calculated in a manner equivalent to that of compound interest, expressed as a percentage.

Dependency ratio. The sum of the child population under 15 years of age and the adult population 65 years and over divided by the population 15 to 64 years, multiplied by 100.

General fertility rate. The annual number of live births divided by the female mid-year population aged 15–49 years, multiplied by 1,000.

Total fertility rate. The sum of specific single-year fertility rates for women 15–49 years of age (if five-year age groups are used, the sum of the rates is multiplied by five). This indicator estimates the approximate "completed family size," that is, the total number of children a woman will bear in her lifetime, assuming no mortality.

Sex ratio. The number of men per 100 women.

Urban population. The definition used by each country, published by the United Nations Population Division.

Annex III: Mortality. Tables III-1 to III-13

In general, the mortality data used were those for the latest year for which the PAHO Technical Information System had official data. The data for Brazil and Paraguay refer to "areas of information." (See also comments under "General Remarks," "Sources," and Completeness of Data.")

All definitions of causes and cause groupings are based on the International Classification of Diseases, Ninth Revision, 1975 (ICD–9).

Table III-1 Crude birth and death rates (per 1,000 population) and infant mortality rates (per 1,000 births) reported around 1987 and estimated for 1985–1990, by subregion and country.

Official data provided by the countries are subject to the problems already mentioned. Although minor discrepancies between these data and estimates are to be expected, the differences for several countries are excessive and should be investigated.

Table III-3a Total number of deaths by age, sex, and country, latest data available.

Excludes countries for which mortality data by age and sex are not available for a year after 1980. For some countries, the data in this table do not correspond to the latest year for which data are reported in Table III-2a, since the distribution of deaths by age and sex was not yet available for the later year.

Table III-3b Crude, age-adjusted, and age-specific death rates (per 1,000 population) by sex and country, latest data available.

Age-adjusted death rates were calculated by the direct adjustment method and represent the death rates expected in countries if the age-specific mortality rates in those countries had prevailed in a reference population, that is, one having a given standard age distribution. The reference population used for these tables is based on the age structure of the population of Latin America around 1960 and is provided below:

Standard age groups	Reference population
Under 1	3,156
1–4	12,625
5–14	26,004
15–24	18,489
25–34	13,791
35–44	10,404
45–54	7,393
55–64	4,666
65–74	2,299
75 and over	1,173
Total	100,000

Age-adjusted rates could not be calculated for some countries because the age groups used for reporting mortality were not compatible with those of the reference population.

Table III-4b Infant mortality rates (per 1,000 live births), by subregion and country, 1980–1988.

Infant mortality rates could not be calculated for countries that reported the number of infant deaths but not the number of live births.

Table III-7a Maternal deaths, by subregion and country, 1980–1988.
Table III-7b Maternal mortality rates (per 10,000 live births), by subregion and country, 1980–1988.

Maternal deaths are defined as those due to complications of pregnancy, childbirth, and the puerperium (ICD–9, codes 630–676). As in the case of infant mortality, the rates for some countries could not be calculated due to lack of information on the number of live births.

Table III-8 Number of deaths by groups of causes (ICD–9) and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Includes data for all years, starting with 1979, that have not been published in previous editions of *Health Conditions in the Americas*. The cause groupings provided by some countries are not

compatible with those used in these tables; these special cases are indicated by footnotes to the relevant tables.

For some countries, age-adjusted rates could not be calculated because the age groups used for reporting mortality were not compatible with those of the reference population.

Tables III-9a(1) to III-9a(30) Number of deaths from (cause groups 1 to 30), by age, sex, and country, latest data available.
Tables III-9b(1) to III-9b(30) Crude, age-adjusted, and age-specific death rates (per 100,000 population) from (cause groups 1 to 30), by age, sex, and country, latest data available.

These tables present data for the latest available year after 1979 for which deaths could be grouped according to the defined groups of causes, age groups, and sex. Adjusted rates were calculated by means of the adjustment procedure described for Table III-3b for all countries that provided data using an age distribution compatible with that of the reference population.

Tables III-10a to III-10h Five leading causes of death (ICD–9) in (age groups a–h), according to proportional mortality and rates per 100,000 (population or live births), by sex and country, latest data available.

The category "symptoms, signs, and ill-defined conditions" (ICD–9, codes 780–799) is included in order to show the number and percentage of deaths assigned to it, and also because it provides an indication of the quality of cause-of-death information. This category does not constitute a "cause" and hence may not be selected as a leading cause. Subtracting the value for that category from the total number of deaths gives the number of deaths from "defined" causes, which is used as a denominator to calculate percentages by cause. It should be noted that "defined" causes are not necessarily "well-defined," since they are subject to possible errors of diagnosis, certification, coding, and tabulation. The rank is assigned to the groups of causes ordered in descending sequence by number of deaths.

The most recent data available after 1979 are shown. For the total population and for each age group, countries with fewer than 100 total deaths from all causes are omitted.

Groups of causes are described in detail in Table III-12.

Table III-11 Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

The indicator "years of potential life lost" (YPLL) provides an estimate of the number of years of life lost prematurely, defined here as the number of years of life lost by persons who die prior to 65 (between 0 and 64) years of age. These estimates are obtained by multiplying the number of deaths in an age group by the difference between 65 and the midpoint of that age group, and adding these products across all age groups. It should be noted that this calculation procedure differs from the one used to obtain YPLL in *Health Conditions in the Americas, 1981–1984*, where mortality under one year of age was excluded.

As in Table III-10, the category "symptoms, signs, and ill-defined conditions" is shown separately and is excluded from the leading causes. The number of YPLL from defined causes is obtained by subtracting the value for the former category from the total number of YPLL. Percentages of YPLL by cause are calculated using the total YPLL from defined causes as the denominator. The YPLL per death, shown in the last column, are obtained by dividing the number of YPLL from a cause by the number of deaths from that cause. Ranks are assigned to groups of causes ordered in descending sequence according to the number of years of potential life lost.

The cause groupings are the same as those in Table III-10 and are detailed in Table III-12.

Table III-12 Cause groupings used for ranking leading causes of death in Tables III-10 and III-11.

This table provides a list of the groups of causes of death that are eligible for ranking as leading

causes in Tables III-10 and III-11. This list, based on the ICD–9, differs from the one used in Table III-8 mainly in that the category "symptoms, signs, and ill-defined conditions" and categories that are essentially residual in nature have been excluded. Another difference is that, in some instances, several of the categories used in Table III-8 have been grouped into a single category on this list (for example, all malignant neoplasm categories are grouped into a single ranking category).

Table III-13 Mortality data by cause available in the Pan American Health Organization data bank as of 30 June 1990.

Data are stored in the PAHO mortality data bank by year, country, age, sex, and cause. Users who need information in greater detail or in a format different from that presented in this publication may request it in writing from the PAHO Health Situation and Trend Assessment Program. The codes in this table that describe the level of detail available are explained below.

a) The first digit represents the revision number of the International Classification of Diseases (ICD) used to classify causes of death:
   7 corresponds to the ICD Seventh Revision (1955),
   8 corresponds to the ICD Eighth Revision (1965),
   9 corresponds to the ICD Ninth Revision (1975).

b) The letter which follows the first digit indicates the level of detail available by cause of death for each ICD Revision. The letter "A" refers to the groups of causes on the PAHO/WHO questionnaire and the letter "M" to the groups of causes in a PAHO-defined publication list.

7th Revision	A	= 150 groups
	M	= 57 groups
8th Revision	A	= 165 groups
	M	= 66 groups
9th Revision	A	= 195 groups
	M	= 80 groups

c) The third and fourth digits indicate the amount of detail available by age groups:
   01 indicates maximum detail by age: all ages, under 1 day, 1–6 days, 7–27 days, 28 days–11 months, 1 year, 2 years, 3 years, 4 years, 5–9 years, successive five-year age groups up to 84 years, and 85 years and over.
   02 differs from 01 in that there is a single group for under 1 year.
   04 differs from 01 in that there is a single group for under 5 years.
   06 provides data for all ages combined only. No detail by age is available.

Information on all other codes will be provided upon request. Most data are available by sex.

ANNEX I. ECONOMIC DATA

TABLE I-1.

Gross domestic product per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	3,075	3,139	3,151	3,214	3,331	3,256	3,203	3,353	3,193	3,361
Bahamas	10,737	9,868	9,785	10,197	9,419	9,904	10,296	10,138	10,626	11,114
Barbados	3,530	3,526	3,559	3,580	3,385	3,457	3,415	3,542	3,700	3,874
Bolivia	818	837	864	899	922	958	991	1,007	1,048	1,023
Brazil	1,372	1,491	1,630	1,813	1,917	1,968	2,118	2,171	2,226	2,322
Chile	2,236	2,392	2,322	2,156	2,141	1,835	1,871	2,026	2,161	2,307
Colombia	1,157	1,197	1,261	1,318	1,365	1,368	1,402	1,429	1,518	1,565
Costa Rica	1,825	1,899	2,003	2,102	2,163	2,152	2,204	2,330	2,404	2,448
Dominican Republic	987	1,064	1,143	1,257	1,299	1,332	1,387	1,421	1,417	1,446
Ecuador	904	932	1,034	1,258	1,300	1,332	1,413	1,463	1,515	1,551
El Salvador	1,032	1,051	1,078	1,104	1,147	1,183	1,202	1,246	1,299	1,252
Guatemala	1,420	1,458	1,522	1,581	1,636	1,623	1,695	1,778	1,816	1,850
Guyana	1,111	1,129	1,079	1,081	1,163	1,261	1,303	1,246	1,210	1,193
Haiti	292	305	302	310	322	320	341	336	346	366
Honduras	782	789	809	845	807	798	852	909	950	976
Jamaica	2,364	2,395	2,570	2,535	2,400	2,350	2,190	2,092	2,079	2,018
Mexico	2,022	2,040	2,144	2,251	2,314	2,366	2,404	2,424	2,557	2,720
Nicaragua	1,495	1,496	1,480	1,525	1,687	1,634	1,670	1,762	1,581	1,130
Panama	2,017	2,149	2,186	2,241	2,236	2,216	2,197	2,167	2,322	2,372
Paraguay	931	959	997	1,046	1,105	1,151	1,197	1,287	1,387	1,495
Peru	1,554	1,574	1,575	1,614	1,715	1,725	1,713	1,675	1,636	1,686
Suriname	2,337	2,511	2,698	2,933	3,132	3,240	3,562	3,962	4,225	4,010
Trinidad and Tobago	4,927	4,926	5,145	5,328	5,591	5,881	6,105	6,640	7,347	7,545
Uruguay	2,478	2,472	2,432	2,440	2,516	2,657	2,751	2,770	2,898	3,058
Venezuela	4,941	4,917	4,899	5,022	5,140	5,263	5,527	5,694	5,617	5,504

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	3,359	3,086	2,890	2,936	2,972	2,797	2,911	2,932	2,862
Bahamas	10,631	10,206	9,883	10,420	10,488	10,772	10,907	11,239	11,317
Barbados	3,994	3,861	3,657	3,664	3,774	3,807	3,994	4,092	4,233
Bolivia	983	965	899	818	794	771	729	724	724
Brazil	2,481	2,318	2,281	2,153	2,214	2,347	2,472	2,507	2,449
Chile	2,448	2,542	2,148	2,096	2,191	2,207	2,294	2,385	2,518
Colombia	1,595	1,596	1,577	1,568	1,586	1,601	1,659	1,711	1,739
Costa Rica	2,394	2,273	2,047	2,045	2,146	2,099	2,155	2,211	2,235
Dominican Republic	1,497	1,521	1,508	1,540	1,508	1,435	1,447	1,530	1,509
Ecuador	1,581	1,596	1,569	1,482	1,500	1,522	1,527	1,407	1,477
El Salvador	1,125	1,018	953	952	965	971	962	970	955
Guatemala	1,866	1,827	1,713	1,623	1,585	1,532	1,490	1,493	1,502
Guyana	1,215	1,209	1,084	984	1,005	1,015	1,018	1,025	995
Haiti	386	369	350	346	341	336	333	326	319
Honduras	954	935	883	850	842	840	837	845	851
Jamaica	1,880	1,903	1,901	1,918	1,874	1,762	1,770	1,836	1,843
Mexico	2,872	3,050	2,959	2,768	2,800	2,804	2,636	2,616	2,588
Nicaragua	1,147	1,171	1,124	1,137	1,082	1,003	960	921	819
Panama	2,622	2,673	2,759	2,709	2,640	2,706	2,738	2,746	2,229
Paraguay	1,612	1,698	1,627	1,528	1,525	1,537	1,492	1,511	1,557
Peru	1,716	1,746	1,705	1,456	1,487	1,483	1,609	1,691	1,503
Suriname	3,722	4,008	3,847	3,716	3,633	3,662	3,685	3,366	3,420
Trinidad and Tobago	8,116	8,277	8,396	7,540	7,017	6,634	6,350	5,805	5,510
Uruguay	3,221	3,261	2,935	2,744	2,683	2,672	2,852	2,998	2,989
Venezuela	5,225	5,054	4,943	4,536	4,360	4,298	4,468	4,482	4,544

Source: Based on data from the Inter-American Development Bank.

TABLE I-2.

Total imports of goods and services per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	276.59	304.30	284.73	276.22	286.41	286.73	223.05	300.72	280.51	427.00
Barbados	2,997.36	2,806.69	2,840.04	2,759.83	2,264.80	2,088.12	2,213.10	2,164.28	2,530.51	2,948.47
Bolivia	179.93	198.60	212.21	211.69	186.67	217.92	211.69	205.86	266.98	257.03
Brazil	154.40	187.57	219.77	258.37	324.24	302.34	291.66	263.36	269.12	284.59
Chile	537.09	572.39	580.13	539.46	548.54	331.09	340.05	454.26	526.46	636.40
Colombia	201.50	236.50	201.00	204.11	219.91	191.63	210.69	226.33	267.46	263.86
Costa Rica	723.02	758.48	741.90	767.95	818.88	739.66	834.12	1,012.65	1,056.69	1,055.60
Dominican Republic	242.08	256.60	258.41	277.71	363.40	367.94	351.25	361.33	335.94	388.66
Ecuador	244.91	286.51	269.25	275.13	384.51	435.46	410.15	468.73	470.76	457.15
El Salvador	241.28	256.68	270.20	311.07	313.98	291.38	336.72	430.05	432.54	398.24
Guatemala	232.25	240.40	220.81	236.31	262.87	242.84	306.71	326.24	331.16	298.18
Guyana	1,091.15	1,023.56	987.18	1,110.50	997.37	1,223.44	1,271.15	981.44	802.55	767.51
Haiti	51.97	58.08	61.70	69.86	72.65	75.97	110.80	121.80	134.81	125.08
Honduras	328.49	284.80	264.40	309.40	328.28	294.78	313.66	357.77	389.16	398.69
Jamaica	886.91	983.48	1,058.69	1,043.97	1,101.68	1,116.22	921.25	785.21	782.64	788.13
Mexico	177.18	163.73	174.78	197.53	230.12	223.84	220.31	192.83	229.00	289.89
Nicaragua	333.75	320.90	326.93	447.26	515.29	355.64	367.13	485.25	356.62	281.68
Panama	834.43	897.19	935.59	899.05	981.05	910.73	841.25	789.40	885.41	888.60
Paraguay	125.66	136.22	133.85	150.64	183.87	167.82	185.49	253.50	278.45	293.25
Peru	359.26	365.12	354.03	386.65	478.22	452.06	384.67	375.95	276.97	321.91
Suriname	1,638.65	1,720.25	1,748.69	1,788.43	2,465.95	2,360.91	2,162.76	2,389.05	2,425.73	2,307.80
Trinidad and Tobago	624.16	760.37	730.84	738.89	814.99	1,010.49	1,271.49	1,284.77	1,453.22	1,946.16
Uruguay	474.92	487.94	449.71	491.62	463.60	504.69	513.93	553.73	589.53	712.61
Venezuela	707.62	722.07	778.57	785.53	971.77	1,148.94	1,331.79	1,728.13	1,872.12	1,527.68

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	614.86	547.19	310.70	291.95	305.70	257.97	298.92	315.61	299.94
Barbados	2,875.70	2,664.08	2,439.81	2,551.35	2,511.64	2,237.29	2,064.16	2,042.41	2,081.69
Bolivia	198.08	225.52	157.83	158.44	127.95	161.49	153.64	168.41	164.75
Brazil	279.99	239.91	220.40	177.58	168.90	165.37	204.46	195.06	175.36
Chile	744.04	847.07	530.34	442.54	506.83	443.55	478.32	550.30	606.63
Colombia	306.70	314.85	332.68	296.04	278.30	254.45	259.28	263.92	289.53
Costa Rica	989.46	707.93	563.06	633.36	680.83	700.89	801.69	966.95	936.98
Dominican Republic	446.84	389.79	316.70	318.12	284.33	300.57	317.20	361.90	345.94
Ecuador	489.16	431.23	447.73	328.17	311.20	324.62	312.86	339.11	266.86
El Salvador	300.34	265.25	206.25	230.84	233.48	231.63	221.55	218.41	215.82
Guatemala	264.96	247.09	189.84	147.91	154.14	130.56	108.27	154.71	158.49
Guyana	849.66	847.81	589.62	568.34	500.10	558.54	579.60	523.68	511.63
Haiti	157.63	156.84	136.65	126.67	129.92	135.43	114.66	114.06	112.33
Honduras	398.73	337.75	235.34	267.51	301.48	292.40	278.14	276.46	269.64
Jamaica	714.64	746.41	705.35	738.23	861.41	973.80	929.57	1,049.57	1,126.01
Mexico	372.61	428.25	259.85	167.96	193.20	209.34	179.25	183.11	250.97
Nicaragua	496.40	459.62	324.06	366.02	348.47	338.81	280.60	280.71	260.21
Panama	1,002.44	978.53	970.83	853.11	899.42	893.51	860.15	811.62	659.10
Paraguay	318.46	324.25	321.41	240.93	272.65	262.90	297.47	344.68	406.99
Peru	408.43	461.17	459.18	314.78	250.96	223.42	253.07	268.41	234.15
Suriname	2,703.40	2,809.71	2,685.03	2,364.40	1,988.08	1,637.97	1,538.61	1,429.01	1,460.25
Trinidad and Tobago	2,086.03	1,895.29	2,432.54	2,304.99	2,004.71	1,884.99	2,022.63	1,490.95	1,415.33
Uruguay	762.15	764.84	656.36	520.50	439.53	444.00	559.74	604.04	585.36
Venezuela	1,283.30	1,360.78	1,433.55	717.02	742.69	669.30	692.78	655.93	666.99

Source: Based on data from the Inter-American Development Bank.

TABLE I-3.

Gross domestic investment per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	652.01	711.26	706.92	662.39	658.36	659.17	693.27	824.85	682.34	740.29
Bahamas										
Barbados	956.75	846.24	825.68	826.88	814.98	663.77	922.13	850.13	847.20	910.50
Bolivia	163.69	175.92	207.48	179.77	174.74	244.64	215.91	218.23	242.99	206.13
Brazil	294.20	327.58	372.57	453.22	515.61	554.55	545.28	532.60	536.81	526.09
Chile	522.29	496.62	352.88	309.06	551.89	257.33	253.83	292.24	355.60	452.57
Colombia	237.51	241.94	230.96	246.70	289.54	232.39	248.63	282.90	296.07	288.90
Costa Rica	369.56	446.79	403.58	466.76	493.97	438.57	538.59	641.78	620.37	657.87
Dominican Republic	188.82	215.26	235.64	291.12	337.91	356.19	325.08	342.83	343.78	363.15
Ecuador	209.13	256.46	216.82	232.88	312.99	356.04	327.80	386.80	420.63	397.26
El Salvador	124.22	146.62	133.55	168.72	207.50	182.04	196.89	276.37	278.51	210.66
Guatemala	170.17	191.26	156.60	180.55	237.41	193.74	262.49	284.20	304.93	257.42
Guyana	377.95	317.85	262.35	388.59	349.35	600.75	515.86	362.00	250.35	343.87
Haiti	26.68	26.74	30.89	37.43	45.32	46.94	52.53	56.03	57.68	67.72
Honduras	176.60	139.24	132.20	162.40	209.87	158.90	164.61	214.25	258.77	259.51
Jamaica	747.50	762.87	707.56	798.28	583.74	627.72	431.81	288.73	330.82	313.38
Mexico	455.43	426.15	459.62	511.99	559.41	579.72	559.34	526.72	582.34	674.49
Nicaragua	254.39	254.54	164.97	326.47	444.86	255.46	254.12	410.11	169.12	-71.81
Panama	561.62	669.87	745.86	753.18	696.51	654.56	632.03	428.90	522.83	550.74
Paraguay	115.21	125.24	146.83	204.27	222.26	217.78	258.66	281.50	348.19	391.74
Peru	272.10	307.77	263.65	400.62	537.39	495.02	419.89	348.70	319.13	365.67
Suriname	643.15	640.67	763.40	1073.06	1463.22	1351.72	1810.44	1724.09	1722.04	958.66
Trinidad and Tobago	535.83	969.26	826.71	686.14	824.23	1036.78	1437.17	1392.11	1854.75	1957.79
Uruguay	262.62	277.73	232.87	221.24	229.75	290.83	350.32	408.65	463.96	571.05
Venezuela	1022.91	1117.45	1094.30	1145.44	1233.26	1383.98	1494.87	1917.86	1908.48	1415.94

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	795.27	599.83	474.38	418.07	366.90	289.44	333.07	385.72	423.70
Bahamas									
Barbados	978.54	1065.63	829.17	731.58	605.49	576.16	617.69	632.51	645.39
Bolivia	144.26	161.51	92.11	90.50	78.46	101.59	59.00	78.28	70.19
Brazil	578.09	486.21	437.26	327.48	320.19	363.78	440.40	438.96	432.15
Chile	584.75	702.02	239.40	194.01	334.65	307.34	344.90	426.56	455.14
Colombia	313.53	347.45	358.17	342.99	315.95	279.51	285.62	298.33	314.90
Costa Rica	683.29	413.28	299.24	386.76	416.76	436.12	555.12	636.10	557.35
Dominican Republic	379.03	329.69	292.03	318.84	303.64	282.44	308.25	420.24	438.58
Ecuador	419.91	353.21	386.44	258.21	247.34	259.69	257.86	251.67	224.65
El Salvador	140.89	133.74	119.01	108.02	110.20	102.72	122.78	118.64	125.74
Guatemala	213.44	239.33	188.14	151.94	156.72	123.14	119.93	153.08	148.96
Guyana	339.29	312.12	246.14	216.29	207.05	215.27	243.93	246.95	255.82
Haiti	67.47	66.78	61.14	63.27	65.03	71.18	63.98	61.64	59.63
Honduras	238.21	192.62	110.84	129.68	176.57	169.40	138.79	141.88	127.57
Jamaica	239.93	289.21	300.56	307.30	271.17	267.34	213.51	255.35	287.59
Mexico	779.94	873.76	646.01	460.37	476.89	513.75	388.95	388.90	442.40
Nicaragua	192.50	285.10	227.33	239.01	233.11	224.00	213.91	203.57	198.45
Panama	618.14	680.96	619.13	479.59	417.50	436.45	464.04	470.34	382.05
Paraguay	457.82	518.80	416.92	330.61	324.82	318.29	320.24	331.64	358.37
Peru	485.22	569.57	514.98	311.69	273.72	239.16	355.99	395.03	321.17
Suriname	962.31	1213.48	1105.86	602.01	443.73	297.22	235.21	218.46	271.83
Trinidad and Tobago	2398.69	2061.23	2157.14	1906.91	1554.64	1153.08	1130.23	867.13	823.10
Uruguay	597.97	541.40	439.73	276.75	279.04	225.53	233.30	286.83	291.59
Venezuela	1134.92	1100.94	1205.86	571.55	684.62	716.96	757.32	930.86	839.84

Source: Based on data from the Inter-American Development Bank.

TABLE I-4.

Total consumption per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	2,415.80	2,481.07	2,476.82	2,545.34	2,680.25	2,635.30	2,411.51	2,426.34	2,359.87	2,636.26
Barbados	3,583.41	3,434.31	3,526.92	3,547.34	3,087.49	3,139.09	3,118.15	3,099.42	3,233.43	3,378.54
Bolivia	579.23	584.40	576.36	612.92	625.54	643.07	674.79	694.73	797.83	802.09
Brazil	1,121.68	1,237.71	1,339.26	1,464.81	1,572.16	1,548.80	1,701.67	1,743.51	1,783.02	1,893.89
Chile	1,994.61	2,214.34	2,337.64	2,172.35	1,830.93	1,599.81	1,578.40	1,770.24	1,874.36	1,975.24
Colombia	947.40	1,014.92	1,037.68	1,071.57	1,102.50	1,110.54	1,158.95	1,181.09	1,254.19	1,291.39
Costa Rica	1,554.98	1,553.85	1,591.10	1,619.42	1,667.87	1,670.08	1,698.38	1,859.64	1,941.99	1,946.03
Dominican Republic	869.89	912.13	921.56	976.04	1,076.41	1,093.30	1,120.17	1,134.45	1,115.46	1,127.10
Ecuador	820.31	832.36	839.44	875.39	978.48	1,062.31	1,127.70	1,205.17	1,224.81	1,263.07
El Salvador	929.16	928.55	950.18	998.20	994.85	1,009.03	1,091.17	1,183.77	1,197.58	1,098.83
Guatemala	1,207.65	1,229.50	1,277.68	1,307.88	1,320.39	1,328.63	1,383.63	1,452.35	1,484.74	1,507.89
Guyana	718.96	708.55	773.71	845.33	888.91	937.03	1,147.28	1,077.59	905.19	846.63
Haiti	270.08	265.35	257.64	259.03	271.06	272.95	317.75	325.58	335.98	337.15
Honduras	620.88	591.07	607.44	635.98	615.57	621.73	696.49	758.80	739.03	723.68
Jamaica	1,715.69	1,802.14	2,076.95	1,979.35	2,061.64	2,106.99	2,055.56	1,945.90	1,843.69	1,769.78
Mexico	1,560.04	1,592.71	1,650.17	1,706.60	1,760.98	1,813.60	1,841.23	1,839.69	1,931.68	2,038.36
Nicaragua	1,233.50	1,219.55	1,206.72	1,228.70	1,346.95	1,307.60	1,351.58	1,429.12	1,334.83	1,001.40
Panama	1,523.27	1,599.50	1,610.68	1,607.00	1,708.17	1,667.51	1,640.66	1,701.65	1,822.53	1,878.09
Paraguay	808.98	844.19	848.52	860.16	920.56	957.14	990.75	1,097.69	1,130.16	1,073.55
Peru	1,239.25	1,252.26	1,261.77	1,280.14	1,328.57	1,356.82	1,349.62	1,341.38	1,197.18	1,174.81
Suriname	1,516.29	1,595.62	1,748.89	1,729.13	1,627.93	2,083.65	1,758.55	2,499.82	2,600.47	3,064.15
Trinidad and Tobago	3,002.44	3,015.89	3,098.68	3,235.93	3,490.50	3,983.06	3,879.19	4,574.45	4,962.67	5,394.35
Uruguay	2,397.98	2,405.32	2,376.99	2,439.50	2,422.80	2,482.26	2,446.38	2,415.44	2,505.82	2,650.85
Venezuela	1,463.52	1,611.60	1,941.57	1,957.83	2,476.81	3,193.08	3,575.04	3,872.91	3,978.73	4,027.50

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	2,794.74	2,634.97	2,320.06	2,377.96	2,487.02	2,295.94	2,445.89	2,440.95	2,266.37
Barbados	3,091.38	3,154.43	2,927.03	2,891.69	2,993.15	2,946.99	3,129.64	3,181.11	3,299.56
Bolivia	784.51	775.86	725.83	681.43	648.23	656.88	633.52	626.03	613.53
Brazil	1,958.07	1,805.69	1,827.75	1,739.12	1,747.29	1,818.86	1,945.76	1,964.50	1,875.34
Chile	2,027.59	2,167.63	1,903.62	1,815.65	1,808.09	1,759.92	1,796.65	1,834.12	1,965.51
Colombia	1,331.87	1,342.76	1,338.69	1,314.29	1,325.36	1,326.33	1,337.68	1,363.70	1,403.64
Costa Rica	1,864.86	1,665.76	1,482.53	1,497.81	1,551.81	1,563.87	1,595.10	1,618.32	1,612.89
Dominican Republic	1,276.27	1,280.00	1,277.85	1,277.81	1,220.55	1,195.01	1,200.01	1,186.50	1,115.24
Ecuador	1,320.22	1,338.69	1,320.94	1,243.52	1,227.12	1,219.63	1,191.93	1,179.45	1,113.78
El Salvador	997.65	916.80	842.95	841.22	866.46	889.93	879.66	870.11	858.95
Guatemala	1,526.37	1,508.78	1,425.04	1,367.90	1,346.31	1,302.22	1,280.79	1,291.14	1,300.48
Guyana	933.51	999.73	855.30	801.67	700.19	748.66	784.83	725.14	725.33
Haiti	372.84	363.08	317.56	313.81	314.99	311.34	311.51	308.09	310.50
Honduras	756.87	726.59	707.55	670.34	656.44	654.39	665.45	677.64	678.35
Jamaica	1,687.93	1,698.64	1,724.78	1,721.85	1,737.33	1,671.24	1,647.23	1,703.39	1,627.02
Mexico	2,157.08	2,269.45	2,174.59	2,033.74	2,060.35	2,074.85	1,997.91	1,950.07	1,938.92
Nicaragua	1,173.19	1,036.02	945.09	978.63	978.84	931.53	878.23	856.44	765.71
Panama	1,858.01	1,881.82	1,959.91	1,965.79	2,098.37	2,089.67	2,033.17	2,041.14	1,656.23
Paraguay	1,213.81	1,312.90	1,333.68	1,276.52	1,277.23	1,262.32	1,264.63	1,252.68	1,281.90
Peru	1,225.79	1,246.11	1,244.62	1,105.89	1,088.12	1,085.01	1,188.47	1,268.41	1,156.53
Suriname	2,956.64	3,333.60	3,356.64	3,726.61	3,517.89	3,529.44	3,566.60	3,255.88	3,260.53
Trinidad and Tobago	5,494.31	5,850.71	6,638.46	5,937.82	5,266.58	5,207.11	5,147.17	4,396.38	4,173.06
Uruguay	2,820.56	2,888.69	2,621.86	2,380.15	2,236.26	2,256.03	2,455.67	2,658.17	2,607.42
Venezuela	3,941.08	3,950.05	3,896.85	3,418.28	3,182.34	3,059.53	3,073.65	2,931.04	3,232.13

Source: Based on data from the Inter-American Development Bank.

TABLE I-5.

Total central government expenditure per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	281	299	292	382	386	435	371	501	521	437
Bahamas	1,646	1,425	1,416	1,393	1,388	1,285	1,410	1,387	1,497	1,511
Barbados	669	681	719	900	899	923	1,022	1,134	1,124	1,236
Bolivia	75	95	125	116	97	108	123	127	129	122
Brazil	151	167	183	204	205	422	446	529	566	557
Chile	1,034	1,347	1,300	1,110	1,162	821	757	689	728	733
Colombia	118	125	133	126	122	131	114	111	125	136
Costa Rica	231	295	325	341	329	318	367	344	397	430
Dominican Republic	172	184	181	193	224	265	236	232	238	296
Ecuador	...	...	...	...	...	...	177	191	168	162
El Salvador	102	106	100	103	112	130	152	184	182	180
Guatemala	104	97	113	112	124	124	179	179	189	195
Guyana	385	652	395	491	365	584	875	596	499	591
Haiti	32	35	37	33	38	47	54	55	62	58
Honduras	123	114	111	103	123	141	150	172	190	181
Jamaica	579	624	732	671	822	814	886	769	776	683
Mexico	223	215	276	318	332	409	395	372	391	436
Nicaragua	135	152	155	167	218	234	226	237	257	199
Panama	407	385	440	438	465	509	502	472	532	721
Paraguay	102	99	100	90	94	107	121	120	127	137
Peru	232	253	260	265	274	310	314	328	298	272
Suriname	648	687	778	829	855	1,125	1,299	1,513	1,424	1,335
Trinidad and Tobago	638	713	784	760	933	1,002	1,457	1,618	1,970	2,485
Uruguay	371	489	385	382	431	433	440	436	439	434
Venezuela	703	710	728	745	1,425	1,376	1,177	1,372	1,211	901

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	538	541	467	629	413	459	580	665	...
Bahamas	1,668	1,765	1,989	1,969	1,777	1,964	1,915	1,933	2,232
Barbados	1,341	1,609	1,398	1,380	1,432	1,573	1,672	1,756	...
Bolivia	136	122	187	78	277	110	108	...	...
Brazil	616	628	679	659	625	...	...	...	...
Chile	739	793	804	691	730	705	727	706	...
Colombia	155	135	139	126	175	165	160	169	...
Costa Rica	454	365	295	326	328	290	300	286	...
Dominican Republic	289	233	201	218	225	101	125	131	122
Ecuador	224	257	244	199	201	224	239	236	...
El Salvador	208	204	189	216	213	225	151	151	149
Guatemala	229	251	190	161	150	146	118	103	114
Guyana	678	782	1,020	664	645	669	646	452	...
Haiti	57	64	80	...	81	78	69	67	...
Honduras	224	196	206	204	228	214	208	211	212
Jamaica	686	730	692	651	494	427	425	452	...
Mexico	513	639	753	641	622	617	492	548	...
Nicaragua (a)	377	414	479	772	782	1,033	1,575	3,254	...
Panama	666	637	683	624	667	590	611	600	364
Paraguay	149	187	173	162	170	153	118	139	...
Peru	327	309	279	259	241	224	228	220	...
Suriname	1,366	1,525	1,612	1,530	1,407	1,433	1,525	1,580	1,752
Trinidad and Tobago	2,818	3,170	4,116	3,609	3,106	2,779	2,292	2,008	1,918
Uruguay	512	561	691	539	497	454	460	500	...
Venezuela	1,044	1,235	1,120	936	920	911	932	1,098	...

Source: Based on data from the Inter-American Development Bank.
(a) Estimates from 1980 onward probably reflect an unrealistic exchange rate; see also Tables I-6 through I-9.

TABLE I-6.

Total central government expenditure as a percentage of gross domestic product in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	9.13	9.53	9.26	11.87	11.58	13.35	11.59	14.95	16.31	13.01
Bahamas	15.33	14.44	14.47	13.66	14.73	12.97	13.69	13.69	14.09	13.60
Barbados	18.94	19.32	20.20	25.14	26.55	26.70	29.92	32.00	30.38	31.90
Bolivia	9.14	11.33	14.47	12.86	10.53	11.31	12.43	12.60	12.31	11.97
Brazil	10.98	11.22	11.23	11.27	10.69	21.45	21.06	24.39	25.42	23.98
Chile	46.24	56.30	56.00	51.47	54.26	44.76	40.44	34.02	33.67	31.76
Colombia	10.19	10.48	10.54	9.55	8.94	9.57	8.11	7.74	8.22	8.66
Costa Rica	12.68	15.51	16.23	16.24	15.21	14.80	16.65	14.76	16.52	17.54
Dominican Republic	17.44	17.26	15.87	15.39	17.28	19.91	17.05	16.31	16.80	20.48
Ecuador	...	...	...	...	...	...	12.50	13.05	11.09	10.47
El Salvador	9.89	10.08	9.31	9.37	9.79	11.02	12.65	14.74	14.00	14.34
Guatemala	7.35	6.68	7.40	7.10	7.59	7.63	10.56	10.09	10.43	10.57
Guyana	34.63	57.75	36.60	45.42	31.35	46.32	67.14	47.86	41.25	49.57
Haiti	10.96	11.63	12.18	10.72	11.79	14.67	15.87	16.31	18.02	15.70
Honduras	15.75	14.48	13.67	12.16	15.19	17.66	17.65	18.95	20.01	18.52
Jamaica	24.47	26.07	28.49	26.47	34.27	34.62	40.47	36.74	37.31	33.86
Mexico	11.01	10.55	12.90	14.13	14.34	17.30	16.45	15.35	15.31	16.04
Nicaragua	9.03	10.18	10.50	10.92	12.91	14.30	13.55	13.45	16.29	17.60
Panama	20.16	17.93	20.11	19.54	20.80	22.97	22.85	21.78	22.92	30.42
Paraguay	10.92	10.30	10.00	8.61	8.51	9.32	10.14	9.36	9.15	9.16
Peru	14.91	16.04	16.50	16.45	15.98	17.94	18.34	19.56	18.22	16.12
Suriname	27.71	27.37	28.82	28.26	27.29	34.72	36.47	38.18	33.71	33.29
Trinidad and Tobago	12.95	14.47	15.24	14.27	16.69	17.05	23.86	24.36	26.82	32.93
Uruguay	14.96	19.80	15.85	15.67	17.14	16.29	15.98	15.73	15.14	14.19
Venezuela	14.24	14.44	14.86	14.84	27.73	26.15	21.30	24.09	21.57	16.37

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	16.01	17.52	16.15	21.42	13.90	16.42	19.92	22.68	...
Bahamas	15.69	17.30	20.13	18.89	16.94	18.24	17.56	17.20	19.72
Barbados	33.57	41.67	38.23	37.65	37.93	41.32	41.86	42.90	...
Bolivia	13.85	12.61	20.84	9.56	34.85	14.20	14.80	...	...
Brazil	24.83	27.11	29.78	30.61	28.21	...	...	...	...
Chile	30.19	31.19	37.46	32.98	33.31	31.93	31.72	29.62	...
Colombia	9.69	8.44	8.81	8.01	11.05	10.32	9.63	9.87	...
Costa Rica	18.96	16.06	14.39	15.96	15.26	13.82	13.91	12.92	...
Dominican Republic	19.30	15.31	13.34	14.18	14.90	7.06	8.67	8.59	8.07
Ecuador	14.18	16.08	15.55	13.43	13.42	14.72	15.67	16.74	...
El Salvador	18.52	19.99	19.80	22.71	22.07	23.14	15.67	15.55	15.63
Guatemala	12.27	13.74	11.08	9.95	9.46	9.55	7.91	6.88	7.56
Guyana	55.82	64.67	94.12	67.54	64.13	65.91	63.45	44.14	...
Haiti	14.77	17.37	22.85	...	23.87	23.35	20.76	20.68	...
Honduras	23.48	20.99	23.35	24.07	27.09	25.44	24.82	25.02	24.90
Jamaica	36.49	38.38	36.39	33.93	26.36	24.23	24.00	24.61	...
Mexico	17.85	20.96	25.46	23.14	22.22	22.00	18.66	20.94	...
Nicaragua (a)	32.86	35.37	42.64	67.94	72.26	...	...	...	...
Panama	25.40	23.84	24.76	23.04	25.28	21.79	22.30	21.85	16.35
Paraguay	9.26	11.00	10.63	10.61	11.15	9.94	7.90	9.17	...
Peru	19.04	17.71	16.38	17.80	16.24	15.09	14.17	13.00	...
Suriname	36.71	38.04	41.89	41.18	38.72	39.15	41.37	46.92	51.22
Trinidad and Tobago	34.72	38.30	49.03	47.87	44.26	41.89	36.10	34.59	34.81
Uruguay	15.90	17.20	23.54	19.64	18.52	16.99	16.12	16.68	...
Venezuela	19.99	24.44	22.66	20.63	21.11	21.20	20.85	24.51	...

Source: Based on data from the Inter-American Development Bank.
(a) Estimates from 1980 onward probably reflect errors in calculation of GDP; estimates from 1985 onward exceed 100 percent and are suppressed here.

TABLE I-7.

Central government health expenditure per person (1988 U.S. dollars) in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	10.36	12.44	12.10	14.48	10.31	13.73	14.31	26.33	19.37	15.06
Bahamas	...	...	...	...	...	...	...	...	...	...
Barbados	110.36	108.95	117.09	147.93	142.91	149.34	154.85	161.09	170.51	206.54
Bolivia	6.80	9.21	8.49	10.14	10.74	8.94	9.80	10.01	11.21	11.10
Brazil	18.89	18.31	19.38	21.29	23.10	24.63	29.60	28.91	32.99	31.75
Chile	43.94	81.24	88.92	65.51	55.16	45.10	39.05	43.83	46.10	42.15
Colombia	...	9.92	8.54	10.02	10.26	9.96	8.89	7.65	11.07	12.83
Costa Rica	7.22	23.87	20.20	32.55	23.63	21.37	22.62	18.96	26.74	24.31
Dominican Republic	...	19.46	18.70	19.62	22.37	23.40	26.26	25.22	27.42	33.69
Ecuador	4.14	3.77	3.35	7.15	11.35	10.94	20.05	21.27	26.92	25.27
El Salvador	10.75	11.57	10.17	10.98	11.90	13.76	14.29	16.86	15.31	15.38
Guatemala	...	...	9.15	9.74	10.30	10.25	11.30	12.75	16.04	17.02
Guyana	25.86	24.33	24.31	32.91	21.03	27.08	31.10	34.94	36.82	38.44
Haiti	2.41	2.22	2.18	2.03	3.58	3.48	3.36	2.34	2.68	3.99
Honduras	11.24	10.38	9.79	10.91	12.66	10.32	15.12	13.70	12.09	12.03
Jamaica	50.59	58.69	64.52	61.63	66.06	61.98	63.76	57.77	47.07	52.41
Mexico	42.69	42.46	48.44	50.42	52.46	56.47	61.61	60.75	61.90	64.08
Nicaragua	8.00	10.79	6.56	8.50	13.11	18.96	15.59	12.49	11.09	21.37
Panama	37.97	35.45	39.24	37.68	41.51	42.85	37.49	34.51	35.16	38.97
Paraguay	3.42	3.22	2.99	3.40	3.05	3.37	3.71	3.72	4.10	5.63
Peru	14.61	14.33	15.37	14.07	14.63	16.23	18.50	14.93	16.42	16.23
Suriname	...	61.13	68.11	76.09	75.77	86.09	108.86	...	...	15.67
Trinidad and Tobago	...	...	...	64.28	64.32	68.01	78.80	92.78	105.11	118.71
Uruguay	...	...	12.76	26.34	36.65	23.75	25.33	24.40	31.53	26.97
Venezuela	53.52	50.34	52.94	53.81	46.36	56.13	61.66	65.35	61.20	52.09

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	
Argentina	17.55	13.59	9.99	13.27	13.50	13.89	18.62	22.91	...	
Bahamas	242.59	254.48	251.71	265.35	285.05	311.35	322.73	333.82	351.24	
Barbados	245.13	240.10	195.68	195.48	218.39	207.59	224.32	230.58	...	
Bolivia	16.83	9.45	3.64	3.00	4.50	3.40	...	...	...	
Brazil	32.34	34.45	38.63	31.35	31.86	6.51	9.51	...	...	
Chile	49.01	71.59	74.11	60.59	62.78	57.66	54.85	...	...	
Colombia	11.75	12.76	10.88	10.86	9.85	...	...	...	...	
Costa Rica	36.01	21.67	18.37	16.43	20.57	7.64	7.14	6.75	...	
Dominican Republic	33.23	33.76	19.16	18.52	21.48	7.71	8.58	...	...	
Ecuador	28.58	33.92	34.03	29.91	29.07	27.26	27.01	...	...	
El Salvador	17.22	15.70	13.64	14.26	16.00	15.22	...	...	...	
Guatemala	25.60	17.84	20.47	10.13	10.63	10.79	11.04	...	...	
Guyana	44.46	45.80	46.49	34.44	28.01	29.17	25.27	21.45	...	
Haiti	3.13	2.86	4.04	...	3.49	3.30	...	...	...	
Honduras	13.37	14.31	13.89	13.75	12.91	17.22	22.96	19.29	...	
Jamaica	61.50	59.22	60.58	54.60	40.99	36.39	0.00	...	...	
Mexico	62.66	70.47	62.58	43.70	42.58	41.31	28.80	31.42	...	
Nicaragua (a)	50.20	52.96	51.33	58.44	56.92	94.13	...	...	...	
Panama	40.41	38.44	40.78	43.00	42.94	43.43	...	...	...	
Paraguay	5.75	8.07	12.49	12.67	14.25	11.95	6.79	6.24	...	
Peru	18.38	18.59	14.48	14.02	13.99	13.44	...	...	...	
Suriname	16.26	13.22	13.59	9.34	...	...	...	...	...	
Trinidad and Tobago	116.63	134.78	221.40	215.34	209.24	196.04	194.10	178.24	...	
Uruguay	34.22	30.49	28.42	29.22	21.35	23.95	...	...	...	
Venezuela	48.63	61.23	56.99	48.65	43.31	44.10	48.61	...	...	

Source: Based on data from the Inter-American Development Bank.
(a) Estimates from 1980 onward probably reflect an unrealistic exchange rate.

TABLE I-8.

Central government health expenditure as a percentage of total central government expenditure in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	3.69	4.16	4.15	3.80	2.67	3.16	3.85	5.25	3.72	3.45
Bahamas	...	...	...	...	...	...	...	...	...	...
Barbados	16.50	16.00	16.28	16.44	15.90	16.18	15.16	14.21	15.17	16.71
Bolivia	9.10	9.72	6.79	8.77	11.07	8.25	7.96	7.89	8.69	9.06
Brazil	12.54	10.94	10.59	10.42	11.27	5.83	6.64	5.46	5.83	5.70
Chile	4.25	6.03	6.84	5.90	4.75	5.49	5.16	6.36	6.33	5.75
Colombia	...	7.91	6.43	7.96	8.41	7.61	7.82	6.92	8.87	9.46
Costa Rica	3.12	8.10	6.22	9.54	7.19	6.71	6.16	5.51	6.74	5.66
Dominican Republic	...	10.59	10.31	10.14	9.97	8.83	11.10	10.88	11.51	11.37
Ecuador	...	...	...	...	...	...	11.35	11.15	16.02	15.57
El Salvador	10.53	10.92	10.13	10.61	10.59	10.55	9.41	9.18	8.42	8.56
Guatemala	...	...	8.12	8.68	8.30	8.28	6.31	7.11	8.47	8.71
Guyana	6.73	3.73	6.16	6.70	5.77	4.63	3.56	5.86	7.38	6.50
Haiti	7.51	6.25	5.92	6.10	9.43	7.43	6.22	4.26	4.29	6.93
Honduras	9.14	9.08	8.85	10.62	10.32	7.33	10.05	7.95	6.35	6.66
Jamaica	8.74	9.40	8.81	9.19	8.03	7.62	7.19	7.52	6.07	7.67
Mexico	19.17	19.73	17.52	15.85	15.82	13.79	15.58	16.32	15.81	14.69
Nicaragua	5.92	7.08	4.22	5.11	6.02	8.12	6.89	5.27	4.31	10.74
Panama	9.33	9.20	8.93	8.61	8.93	8.42	7.47	7.31	6.60	5.40
Paraguay	3.36	3.26	3.00	3.78	3.24	3.15	3.06	3.09	3.23	4.11
Peru	6.31	5.68	5.91	5.30	5.34	5.24	5.89	4.56	5.51	5.97
Suriname	...	8.89	8.76	9.18	8.86	7.65	8.38	...	...	1.17
Trinidad and Tobago	...	...	...	8.45	6.89	6.79	5.41	5.74	5.33	4.78
Uruguay	...	...	3.31	6.89	8.50	5.49	5.76	5.60	7.18	6.21
Venezuela	7.61	7.09	7.27	7.22	3.25	4.08	5.24	4.76	5.05	5.78

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	3.26	2.51	2.14	2.11	3.27	3.02	3.21	3.45	...
Bahamas	14.54	14.41	12.65	13.48	16.04	15.85	16.85	17.27	15.74
Barbados	18.28	14.92	14.00	14.17	15.26	13.19	13.42	13.13	...
Bolivia	12.37	7.76	1.94	3.83	1.63	3.11	...	...	...
Brazil	5.25	5.48	5.69	4.76	5.10	...	...	...	...
Chile	6.63	9.03	9.21	8.77	8.60	8.18	7.54	...	...
Colombia	7.60	9.47	7.83	8.65	5.62	...	...	...	...
Costa Rica	7.93	5.94	6.23	5.03	6.28	2.63	2.38	2.36	...
Dominican Republic	11.50	14.50	9.53	8.48	9.56	7.60	6.85	...	...
Ecuador	12.75	13.21	13.94	15.03	14.44	12.17	11.29	...	...
El Salvador	8.27	7.71	7.23	6.59	7.52	6.77	...	...	...
Guatemala	11.18	7.11	10.78	6.27	7.09	7.38	9.37	...	...
Guyana	6.55	5.86	4.56	5.18	4.35	4.36	3.91	4.74	...
Haiti	5.48	4.47	5.06	...	4.29	4.21	...	...	...
Honduras	5.97	7.30	6.74	6.73	5.66	8.06	11.05	9.12	...
Jamaica	8.96	8.11	8.76	8.39	8.30	8.52	...	...	...
Mexico	12.22	11.03	8.31	6.82	6.84	6.70	5.85	5.74	...
Nicaragua	13.32	12.79	10.71	7.57	7.28	9.11	13.76	...	...
Panama	6.07	6.03	5.97	6.89	6.43	7.36	...	...	...
Paraguay	3.85	4.32	7.22	7.82	8.38	7.82	5.77	4.50	...
Peru	5.62	6.01	5.19	5.41	5.80	6.01	...	...	...
Suriname	1.19	0.87	0.84	0.61	...	...	...	...	...
Trinidad and Tobago	4.14	4.25	5.38	5.97	6.74	7.05	8.47	8.88	...
Uruguay	6.68	5.44	4.11	5.42	4.30	5.28	...	...	...
Venezuela	4.66	4.96	5.09	5.20	4.71	4.84	5.22	...	...

Source: Based on data from the Inter-American Development Bank.

TABLE I-9.

Central government health expenditure as a percentage of gross domestic product in countries of Latin America and the Caribbean, 1970–1988.

Country/Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	0.34	0.40	0.38	0.45	0.31	0.42	0.45	0.79	0.61	0.45
Bahamas	...	...	...	...	...	...	...	...	...	...
Barbados	3.13	3.09	3.29	4.13	4.22	4.32	4.53	4.55	4.61	5.33
Bolivia	0.83	1.10	0.98	1.13	1.17	0.93	0.99	0.99	1.07	1.09
Brazil	1.38	1.23	1.19	1.17	1.21	1.25	1.40	1.33	1.48	1.37
Chile	1.96	3.40	3.83	3.04	2.58	2.46	2.09	2.16	2.13	1.83
Colombia	...	0.83	0.68	0.76	0.75	0.73	0.63	0.53	0.73	0.82
Costa Rica	0.40	1.26	1.01	1.55	1.09	0.99	1.03	0.81	1.11	0.99
Dominican Republic	...	1.83	1.64	1.56	1.72	1.76	1.89	1.77	1.94	2.33
Ecuador	0.46	0.40	0.32	0.57	0.87	0.82	1.42	1.45	1.78	1.63
El Salvador	1.04	1.10	0.94	0.99	1.04	1.16	1.19	1.35	1.18	1.23
Guatemala	...	...	0.60	0.62	0.63	0.63	0.67	0.72	0.88	0.92
Guyana	2.33	2.16	2.25	3.04	1.81	2.15	2.39	2.80	3.04	3.22
Haiti	0.82	0.73	0.72	0.65	1.11	1.09	0.99	0.69	0.77	1.09
Honduras	1.44	1.31	1.21	1.29	1.57	1.29	1.77	1.51	1.27	1.23
Jamaica	2.14	2.45	2.51	2.43	2.75	2.64	2.91	2.76	2.26	2.60
Mexico	2.11	2.08	2.26	2.24	2.27	2.39	2.56	2.51	2.42	2.36
Nicaragua	0.53	0.72	0.44	0.56	0.78	1.16	0.93	0.71	0.70	1.89
Panama	1.88	1.65	1.79	1.68	1.86	1.93	1.71	1.59	1.51	1.64
Paraguay	0.37	0.34	0.30	0.33	0.28	0.29	0.31	0.29	0.30	0.38
Peru	0.94	0.91	0.98	0.87	0.85	0.94	1.08	0.89	1.00	0.96
Suriname	...	2.43	2.52	2.59	2.42	2.66	3.06	0.00	0.00	0.39
Trinidad and Tobago	...	...		1.21	1.15	1.16	1.29	1.40	1.43	1.57
Uruguay	...	...	0.52	1.08	1.46	0.89	0.92	0.88	1.09	0.88
Venezuela	1.08	1.02	1.08	1.07	0.90	1.07	1.12	1.15	1.09	0.95

Country/Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	0.52	0.44	0.35	0.45	0.45	0.50	0.64	0.78	...
Bahamas	2.28	2.49	2.55	2.55	2.72	2.89	2.96	2.97	3.10
Barbados	6.14	6.22	5.35	5.34	5.79	5.45	5.62	5.63	...
Bolivia	1.71	0.98	0.40	0.37	0.57	0.44	...	...	...
Brazil	1.30	1.49	1.69	1.46	1.44	0.28	0.38	...	...
Chile	2.00	2.82	3.45	2.89	2.86	2.61	2.39	...	...
Colombia	0.74	0.80	0.69	0.69	0.62	...	...	...	...
Costa Rica	1.50	0.95	0.90	0.80	0.96	0.36	0.33	0.31	...
Dominican Republic	2.22	2.22	1.27	1.20	1.42	0.54	0.59	...	...
Ecuador	1.81	2.12	2.17	2.02	1.94	1.79	1.77	...	...
El Salvador	1.53	1.54	1.43	1.50	1.66	1.57	...	...	...
Guatemala	1.37	0.98	1.19	0.62	0.67	0.70	0.74	...	...
Guyana	3.66	3.79	4.29	3.50	2.79	2.87	2.48	2.09	...
Haiti	0.81	0.78	1.16	0.00	1.02	0.98	...	...	...
Honduras	1.40	1.53	1.57	1.62	1.53	2.05	2.74	2.28	...
Jamaica	3.27	3.11	3.19	2.85	2.19	2.07	...	...	...
Mexico	2.18	2.31	2.12	1.58	1.52	1.47	1.09	1.20	...
Nicaragua	4.38	4.52	4.57	5.14	5.26	9.39	...	...	...
Panama	1.54	1.44	1.48	1.59	1.63	1.60	...	...	...
Paraguay	0.36	0.48	0.77	0.83	0.93	0.78	0.46	0.41	...
Peru	1.07	1.06	0.85	0.96	0.94	0.91	...	...	...
Suriname	0.44	0.33	0.35	0.25	...	...	...	...	...
Trinidad and Tobago	1.44	1.63	2.64	2.86	2.98	2.95	3.06	3.07	...
Uruguay	1.06	0.93	0.97	1.07	0.80	0.90	...	...	...
Venezuela	0.93	1.21	1.15	1.07	0.99	1.03	1.09	...	...

Source: Based on data from the Inter-American Development Bank.

ANNEX II. POPULATION

TABLE II-1.

Censuses in the Americas and enumerated population, by subregion and country, around 1970 and 1980.

Subregion and country	1970 Date of census	1970 Population	1980 Date of census	1980 Population
LATIN AMERICA				
Andean Area				
Bolivia	29 IX 1976	4,613,486	...	...
Colombia	24 X 1973	22,551,811	15 X 1985	27,837,932
Ecuador	8 VI 1974	6,521,710	28 XI 1982	8,060,712
Peru	4 VI 1972	13,538,208	12 VII 1981	17,005,210
Venezuela	2 XI 1971	10,721,522	20 X 1981	14,516,735
Southern Cone				
Argentina	30 IX 1970	23,362,204	22 X 1980	27,947,446
Chile	22 IV 1970	8,884,768	21 IV 1982	11,329,736
Falkland Islands	3 XII 1972	1,957	7 XII 1980	1,855
Paraguay	9 VII 1972	2,357,955	11 VII 1982	3,029,830
Uruguay	21 V 1975	2,788,429	23 X 1985	2,955,241*
Brazil	1 IX 1970	92,341,556	1 IX 1980	121,148,582
Central American Isthmus				
Belize	7 IV 1970	120,936	12 V 1980	143,386
Costa Rica	14 IV 1973	1,871,780	10 VI 1984	2,416,809*
El Salvador	28 VI 1971	3,554,648	...	...
Guatemala	26 III 1973	5,160,221	23 III 1981	6,054,227
Honduras	6 III 1974	2,656,948	...	...
Nicaragua	20 IV 1971	1,877,952	...	...
Panama	10 V 1970	1,428,082	11 V 1980	1,831,399
Mexico	28 I 1970	48,225,238	4 VI 1980	66,846,833
Latin Caribbean				
Cuba	6 IX 1970	8,569,121	11 IX 1981	9,723,605
Dominican Republic	9 I 1970	4,006,405	12 XII 1981	5,647,977*
Haiti	31 VIII 1971	4,329,991	30 VIII 1982	5,053,792
Puerto Rico	1 IV 1970	2,712,033	1 IV 1980	3,196,520
CARIBBEAN				
Anguilla	...	...	...	...
Antigua and Barbuda	7 IV 1970	65,525	1 II 1981	60,312
Bahamas	7 IV 1970	175,192	12 V 1980	223,455
Barbados	7 IV 1970	237,701	12 V 1980	252,029
Cayman Islands	7 IV 1970	10,460	8 X 1979	16,677
Dominica	7 IV 1970	70,513	7 IV 1981	74,625
French Guiana	16 X 1974	55,125	9 III 1982	73,012
Grenada	7 IV 1970	93,858	30 IV 1981	89,088
Guadeloupe	16 X 1974	324,530	9 III 1982	327,002
Guyana	7 IV 1970	701,885	12 V 1980	758,619
Jamaica	7 IV 1970	1,848,512	8 VI 1982	2,205,507
Martinique	16 X 1974	324,832	9 III 1982	326,717
Montserrat	7 IV 1970	11,698	12 V 1980	11,932
Netherlands Antilles	31 XII 1971	218,390	1 II 1981	171,620
Saint Lucia	7 IV 1970	100,893	12 V 1980	115,153
St. Kitts and Nevis	7 IV 1970	64,000	12 V 1980	44,224
St.Vincent and the Grenadines	7 IV 1970	87,305	12 V 1980	97,914
Suriname	31 XII 1971	384,903	1 VII 1980	352,041*
Trinidad and Tobago	7 IV 1970	940,719	12 V 1980	1,079,791
Turks & Caicos Islands	29 X 1970	5,607	12 V 1980	7,435
Virgin Islands (UK)	7 IV 1970	9,825	12 V 1980	11,697
Virgin Islands (US)	1 IV 1970	62,468	1 IV 1980	96,569
NORTH AMERICA				
Bermuda	29 X 1970	58,525	12 V 1980	67,761
Canada	1 VI 1971	21,568,310	3 VI 1986	25,309,330
St. Pierre and Miquelon	18 II 1974	5,840	9 III 1982	6,037
United States	1 IV 1970	203,235,298	1 IV 1980	226,545,805

Sources: United Nations. Population and Vital Statistics Report. ST/ESA/STAT/SER.A/172. New York, 1 January 1990. United Nations. 1987 Demographic Yearbook. New York, 1989.

TABLE II-2.

Estimated and projected population and annual geometric growth rates, by subregion and country, 1985, 1990, 1995, and 2000.

Subregion and country	Population (thousands)				Annual growth rates (percent)		
	1985	1990	1995	2000	1985-1990	1990-1995	1995-2000
REGIONAL TOTAL	668,369	723,923	779,639	834,468	1.60	1.48	1.36
LATIN AMERICA	396,681	440,631	485,817	531,194	2.10	1.95	1.79
Andean Area	81,477	91,983	103,010	114,329	2.43	2.26	2.09
Bolivia	6,371	7,314	8,421	9,724	2.76	2.82	2.88
Colombia	28,713	31,819	34,939	37,998	2.05	1.87	1.68
Ecuador	9,378	10,782	12,314	13,939	2.79	2.66	2.48
Peru	19,698	22,332	25,123	27,952	2.51	2.36	2.13
Venezuela	17,317	19,736	22,213	24,716	2.61	2.37	2.14
Southern Cone	49,159	52,902	56,642	60,414	1.47	1.37	1.29
Argentina	30,331	32,322	34,264	36,238	1.27	1.17	1.12
Chile	12,121	13,173	14,237	15,272	1.66	1.55	1.40
Falkland Islands	2	2	2	2	0.0	0.0	0.0
Paraguay	3,693	4,277	4,893	5,538	2.93	2.69	2.48
Uruguay	3,012	3,128	3,246	3,364	0.76	0.74	0.71
Brazil	135,564	150,368	165,083	179,487	2.07	1.87	1.67
Central American Isthmus	25,370	29,073	33,306	37,892	2.72	2.72	2.58
Belize	163	182	201	221	2.19	2.02	1.85
Costa Rica	2,642	3,015	3,374	3,711	2.64	2.25	1.90
El Salvador	4,767	5,252	5,943	6,739	1.93	2.47	2.51
Guatemala	7,963	9,197	10,621	12,221	2.88	2.88	2.81
Honduras	4,383	5,138	5,968	6,846	3.18	3.00	2.74
Nicaragua	3,272	3,871	4,540	5,261	3.36	3.19	2.95
Panama	2,180	2,418	2,659	2,893	2.07	1.90	1.69
Mexico	79,376	88,598	97,967	107,233	2.20	2.01	1.81
Latin Caribbean	25,735	27,707	29,809	31,839	1.48	1.46	1.32
Cuba	9,946	10,324	10,788	11,189	0.75	0.88	0.73
Haiti	5,922	6,504	7,148	7,837	1.88	1.89	1.84
Puerto Rico	3,451	3,709	3,958	4,192	1.44	1.30	1.15
Dominican Republic	6,416	7,170	7,915	8,621	2.22	1.98	1.71
CARIBBEAN	6,964	7,468	7,985	8,504	1.40	1.34	1.26
Anguila	7	7	8	8	1.42	1.32	1.24
Antigua and Barbuda	81	86	93	99	1.39	1.37	1.32
Bahamas	242	260	278	297	1.41	1.34	1.33
Barbados	253	261	272	285	0.62	0.82	0.96
Cayman Islands	20	21	23	24	1.45	1.27	1.36
Dominica	76	81	87	93	1.32	1.33	1.38
French Guiana	82	92	102	112	2.25	2.06	1.87
Grenada	96	103	110	117	1.33	1.33	1.38
Guadeloupe	334	340	346	354	0.34	0.37	0.45
Guyana	953	1,040	1,119	1,197	1.74	1.46	1.34
Jamaica	2,336	2,521	2,706	2,886	1.52	1.41	1.29
Martinique	328	331	338	352	0.18	0.43	0.82
Netherlands Antilles	180	193	207	221	1.41	1.35	1.32
Turks and Caicos Islands	8	9	9	10	1.46	1.36	1.28
Virgin Islands (US)	105	113	121	129	1.40	1.36	1.32
Virgin Islands (UK)	13	14	15	16	1.36	1.41	1.32
Montserrat	12	13	14	15	1.47	1.22	1.43
St. Kitts and Nevis	46	50	53	57	1.41	1.32	1.34
St. Vincent and the Grenadines	104	111	118	127	1.33	1.34	1.36
Saint Lucia	128	136	146	156	1.32	1.34	1.37
Suriname	375	403	435	469	1.46	1.52	1.49
Trinidad and Tobago	1,185	1,283	1,385	1,480	1.59	1.53	1.32
NORTH AMERICA	264,724	275,824	285,837	294,770	0.82	0.71	0.62
Bermuda	56	58	60	62	0.70	0.70	0.70
Canada	25,379	26,525	27,567	28,508	0.88	0.77	0.67
United States	239,283	249,235	258,204	266,194	0.81	0.71	0.61
ST. Pierre and Miquelon	6	6	6	6	0.0	0.0	0.0

Source: United Nations. World Population Prospect: 1988. New York, 1989.

TABLE II-3.

Midyear population estimates (in thousands), by subregion and country, 1980–1989.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
LATIN AMERICA	354,114	362,237	370,586	379,216	387,626	396,681	405,299	414,017	422,825	431,721
ANDEAN AREA	71,806	73,677	75,576	77,568	79,474	81,477	83,517	85,592	87,697	89,848
BOLIVIA	5,570	5,720	5,874	6,034	6,200	6,371	6,547	6,730	6,918	7,113
COLOMBIA	25,794	26,355	26,929	27,575	28,110	28,713	29,325	29,943	30,566	31,210*
ECUADOR	8,123	8,361	8,605	8,857	9,114	9,378	9,647	9,922	10,203	10,490
PERU	17,295	17,754	18,224	18,705	19,197	19,698	20,208	20,727	21,254	21,790
VENEZUELA	15,024	15,487	15,944	16,397	16,853	17,317	17,790	18,270	18,756	19,245
SOUTHERN CONE	45,442	46,192	46,955	47,731	48,512	49,159	49,910	50,658	51,407	52,157
ARGENTINA	28,237	28,694	29,157	29,625	30,094	30,331	30,737	31,138	31,536	31,930
CHILE	11,127	11,299	11,478	11,663	11,850	12,121	12,328	12,537	12,748	12,964*
FALKLAND ISLANDS	2	2	2	2	2	2	2	2	2	2
PARAGUAY	3,168	3,269	3,370	3,472	3,576	3,693	3,808	3,923	4,040	4,157
URUGUAY	2,908	2,928	2,948	2,969	2,990	3,012	3,035	3,058	3,081	3,104
BRAZIL	121,286	124,070	126,895	129,757	132,648	135,564	138,502	141,459	144,427	147,399
CENTRAL AMERICAN ISTHMUS	22,285	22,814	23,427	24,057	24,699	25,370	26,060	26,777	27,520	28,286
BELIZE	145	149	152	156	159	163	167	170	174	178
COSTA RICA	2,279	2,343	2,406	2,470	2,534	2,642	2,716	2,791	2,866	2,941
EL SALVADOR	4,525	4,527	4,598	4,668	4,738	4,767	4,840	4,927	5,026	5,135
GUATEMALA	6,917	7,113	7,315	7,524	7,740	7,963	8,194	8,433	8,680	8,935
HONDURAS	3,691	3,822	3,957	4,094	4,232	4,383	4,531	4,680	4,830	4,982
NICARAGUA	2,771	2,860	2,955	3,056	3,162	3,272	3,385	3,502	3,622	3,745
PANAMA	1,957	2,000	2,044	2,089	2,134	2,180	2,227	2,274	2,322	2,370
MEXICO	69,393	71,281	73,184	75,103	77,040	79,376	81,204	83,040	84,884	86,737
LATIN CARIBBEAN	23,902	24,203	24,549	25,000	25,253	25,735	26,106	26,491	26,890	27,294
CUBA	9,732	9,760	9,815	9,970	9,924	9,946	10,006	10,075	10,154	10,237
DOMINICAN REPUBLIC	5,558	5,686	5,823	5,961	6,101	6,416	6,566	6,716	6,867	7,018
HAITI	5,413	5,509	5,616	5,723	5,830	5,922	6,032	6,146	6,263	6,381*
PUERTO RICO	3,199	3,246	3,295	3,346	3,398	3,451	3,502	3,554	3,606	3,658
CARIBBEAN	6,506	6,589	6,680	6,783	6,878	6,964	7,063	7,163	7,264	7,365
ANGUILLA	7	7	7	7	7	7	7	7	7	7
ANTIGUA AND BARBUDA	75	77	78	79	79	81	82	83	84	85
BAHAMAS	224	227	231	235	238	242	246	249	253	257
BARBADOS	249	250	250	251	252	253	254	256	257	259
CAYMAN ISLANDS	17	18	18	19	19	20	20	21	21	21
DOMINICA	73	73	73	76	76	76	77	78	79	80
FRENCH GUIANA	69	72	74	77	80	82	84	86	88	90
GRENADA	92	93	94	95	96	96	97	98	100	101
GUADELOUPE	327	327	329	331	333	334	336	337	338	339
GUYANA	865	882	900	918	936	953	971	989	1,006	1,023
JAMAICA	2,173	2,202	2,234	2,267	2,301	2,336	2,372	2,409	2,446	2,483
MARTINIQUE	326	326	327	327	328	328	329	329	330	330
MONTSERRAT	12	12	12	12	12	12	12	12	12	13
NETHERLANDS ANTILLES	172	172	172	174	177	180	183	186	188	191
ST. KITTS AND NEVIS	45	45	45	46	46	46	47	48	48	49
SAINT LUCIA	115	120	125	131	136	128	129	131	133	135
ST. VINCENT & THE GRENADINES	98	99	100	101	102	104	105	106	108	109
SURINAME	355	357	360	365	370	375	380	386	392	398*
TRINIDAD AND TOBAGO	1,095	1,112	1,129	1,149	1,166	1,185	1,204	1,223	1,243	1,263
TURKS AND CAICOS ISLANDS	7	8	8	8	8	8	8	8	8	8
VIRGIN ISLANDS (UK)	12	12	12	13	13	13	13	13	13	13
VIRGIN ISLANDS (US)	98	98	102	102	103	105	107	108	110	111
NORTH AMERICA	251,405	254,056	256,683	259,238	261,697	264,177	266,791	269,088	271,908	274,510
BERMUDA	54	54	54	55	55	56	56	57	57	58
CANADA	24,090	24,359	24,627	24,893	25,159	25,379	25,633	25,625	26,093	26,310
ST. PIERRE AND MIQUELON	6	6	6	6	6	6	6	6	6	6
UNITED STATES	227,255	229,637	231,996	234,284	236,477	238,736	241,096	243,400	245,752*	248,136*

* PROVISIONAL

TABLE II-4a.

Live births, by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	246,070*	250,890*	252,046*	...	...	...	...	...	...
COLOMBIA	821,645	839,255*	837,932*	829,348	825,842	835,922	...	...	...
ECUADOR	262,778	264,963	262,102	253,990	257,044	262,260	205,797	204,475	211,392*
PERU	692,454	705,106	679,000	689,000	698,000	699,000	714,000*	723,000	727,000*
VENEZUELA	493,009	497,270	510,532	514,381	503,973	502,329	504,278	516,773	522,392*
SOUTHERN CONE									
ARGENTINA	697,461	680,292	663,429	655,876	635,323	650,873	675,388	662,871	653,576*
CHILE	247,013	260,273	274,507	264,957	251,765	261,977	272,997	265,774	296,581*
FALKLAND ISLANDS	33	27	21	21	...	...	...	...	18*
PARAGUAY (AREA OF INFORMATION)	44,984	45,518	50,230	52,671	56,385	51,615	53,651	51,532*	...
URUGUAY	53,854	53,923	53,713	53,405	52,845	53,550	53,741	53,444*	55,556*
BRAZIL (AREA OF INFORMATION)	5,336,584	4,858,813	5,674,979	4,159,537	3,890,356	4,047,458	5,334,247	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	6,264	5,821	5,899	6,040	6,150	5,916	6,136	6,775*	6,701*
COSTA RICA	69,992	72,260	73,120	72,953	75,993	84,252	83,194	80,326	81,376
EL SALVADOR	169,930	163,305	156,796	144,193	145,202	139,514	145,126*	...	...
GUATEMALA	304,492	308,413	312,047	306,827	312,094	326,849	319,321	318,532*	341,382*
HONDURAS	155,908	161,020	161,653	158,419	...	...	...	...	...
NICARAGUA	120,560*	...	...	135,132	106,106	...	141,039	...	...
PANAMA	52,626	53,873	54,491	55,222	56,659	58,038	57,655	57,647	57,580*
MEXICO	2,446,238	2,530,662	2,392,849	2,609,088	2,511,898	2,655,040*	2,567,763	2,594,052	2,602,643*
LATIN CARIBBEAN									
CUBA	136,900	136,211	159,759	165,284	166,281	182,067	166,049	179,477	187,908*
DOMINICAN REPUBLIC	192,751	195,000*	202,221	174,093*	162,774	113,201*	...	...	...
HAITI	...	...	311,978	292,934	...	...	...	...	...
PUERTO RICO	73,060	71,365	69,336	65,742	63,321	63,629	63,550*	64,393	...
CARIBBEAN									
ANGUILLA	162*	144*	170*	172*	161*	177	154	181	...
ANTIGUA AND BARBUDA	1,238	1,177	1,152	1,174	1,126	1,190	1,130	1,094	...
BAHAMAS	5,934	5,759	5,828	6,030	5,750	5,584	4,770	4,331	4,943
BARBADOS	4,212	4,417	4,827	4,614	4,343	4,349	4,107	3,941*	...
CAYMAN ISLANDS	347	347	339	387	414	367	360	359	380*
DOMINICA	1,819	1,670	1,753	1,864	1,716	1,703	1,721	1,621	...
FRENCH GUIANA	1,933	2,069	2,379	2,315	2,313	2,482	2,392	...	...
GRENADA	2,571	2,422*	2,614*	2,872*	2,823	3,051	3,093	3,057	...
GUADELOUPE	6,425	6,486	6,616	6,722	6,671	6,750	6,374	...	...
GUYANA	22,688*	...	18,291*	16,302*	15,171	16,709*	...	...	...
JAMAICA	57,385	58,049	61,500	61,417	53,752	56,200	54,067	52,300	53,623*
MARTINIQUE	5,363	5,406	5,376	5,641	5,705	5,722	5,958	...	6,386*
MONTSERRAT	224	231	260	259*	248*	232	200*	177	...
NETHERLANDS ANTILLES (CURACAO)	...	4,000*	...	...	...	...	...	...	3,456*
ST. KITTS AND NEVIS	1,170	1,137	1,307	1,093	1,115	1,026	1,007	...	...
SAINT LUCIA	3,789	3,860	4,045	3,936	4,130	4,299	4,010	3,831	3,587
ST. VINCENT & THE GRENADINES	3,075	3,227	3,352	3,295	2,831	2,910	2,708*	...	...
SURINAME	9,844	10,095	11,205	11,823	11,501	11,703	...	9,660*	...
TRINIDAD AND TOBAGO	29,869	32,177	32,537	33,208	31,599*	33,719*	31,886*	29,167*	...
TURKS AND CAICOS ISLANDS	214	112*	204	152*	200	265	185	254	...
VIRGIN ISLANDS (UK)	272	224	235	288	234	248	213	263	237*
VIRGIN ISLANDS (US)	2,548	2,442	2,528	2,600	2,452	2,402	2,288	2,375	2,375*
NORTH AMERICA									
BERMUDA	807	777	805	913	840	914	889	899*	935*
CANADA	370,709	371,346	373,082	373,689	377,031	375,727	372,431	369,742*	375,743*
ST. PIERRE AND MIQUELON	90	109	127	81	128	...	...	...	...
UNITED STATES	3,612,258	3,629,238	3,680,537	3,638,933	3,669,141	3,760,561	3,756,547	3,829,000*	3,913,000*

* PROVISIONAL

TABLE II-4b.

Birth rates per 1,000 population, by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	44.2*	43.9*	42.9*	...	...	...	...	...	...
COLOMBIA	31.9	31.8*	31.1*	30.1	29.4	29.1	...	...	...
ECUADOR	32.3	31.7	30.5	28.7	28.2	28.0	21.3	20.6	20.7*
PERU	40.0	39.7	37.3	36.8	36.4	35.5	35.3*	34.9	34.2*
VENEZUELA	32.8	32.1	32.0	31.4	29.9	29.0	28.3	28.3	27.9*
SOUTHERN CONE									
ARGENTINA	24.7	23.7	22.8	22.1	21.1	21.5	22.0	21.3	20.7*
CHILE	22.2	23.0	23.9	22.7	21.2	21.6	22.1	21.2	23.3*
FALKLAND ISLANDS	16.5	13.5	10.5	10.5	...	...	...	...	9.0*
PARAGUAY (AREA OF INFORMATION)	23.2	22.7	24.5	25.2	26.4	23.4	23.6	22.0*	...
URUGUAY	18.5	18.4	18.2	18.0	17.7	17.8	17.7	17.5*	18.0*
BRAZIL (AREA OF INFORMATION)	44.0	39.2	44.7	32.1	29.3	29.9	38.5	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	43.2	39.1	38.8	38.7	38.7	36.3	36.7	39.9*	38.5*
COSTA RICA	30.7	30.8	30.4	29.5	30.0	31.9	30.6	28.8	28.4
EL SALVADOR	37.6	36.1	34.1	30.9	30.6	29.3	30.0*	...	...
GUATEMALA	44.0	43.4	42.7	40.8	40.3	41.0	39.0	37.8*	39.3*
HONDURAS	42.2	42.1	40.9	38.7	...	...	...	...	...
NICARAGUA	43.5*	...	...	44.2	33.6	...	41.7	...	...
PANAMA	26.9	26.9	26.7	26.4	26.6	26.6	25.9	25.4	24.8*
MEXICO	35.3	35.5	32.7	34.7	32.6	33.4*	31.6	31.2	30.7*
LATIN CARIBBEAN									
CUBA	14.1	14.0	16.3	16.6	16.8	18.3	16.6	17.8	18.5*
DOMINICAN REPUBLIC	34.7	34.3*	34.7	29.2*	26.7	17.6*	...	...	...
HAITI	...	...	55.6	51.2	...	...	...	...	...
PUERTO RICO	22.8	22.0	21.0	19.6	18.6	18.4	18.1*	18.1	...
CARIBBEAN									
ANGUILLA	23.1*	20.6*	24.3*	24.6*	23.0*	25.3	22.0	25.9	...
ANTIGUA AND BARBUDA	16.5	15.3	14.8	14.9	14.3	14.7	13.8	13.2	...
BAHAMAS	26.5	25.4	25.2	25.7	24.2	23.1	19.4	17.4	19.5
BARBADOS	16.9	17.7	19.3	18.4	17.2	17.2	16.2	15.4*	...
CAYMAN ISLANDS	20.4	19.3	18.8	20.4	21.8	18.4	18.0	17.1	18.1*
DOMINICA	24.9	22.9	24.0	24.5	22.6	22.4	22.4	20.8	...
FRENCH GUIANA	28.0	28.7	32.1	30.1	28.9	30.3	28.5	...	...
GRENADA	27.9	26.0*	27.8*	30.2*	29.4	31.8	31.9	31.2	...
GUADELOUPE	19.6	19.8	20.1	20.3	20.0	20.2	19.0	...	...
GUYANA	26.2*	...	20.3*	17.8*	16.2	17.5*	...	...	...
JAMAICA	26.4	26.4	27.5	27.1	23.4	24.1	22.8	21.7	21.9*
MARTINIQUE	16.5	16.6	16.4	17.3	17.4	17.4	18.1	...	19.4*
MONTSERRAT	18.7	19.3	21.7	21.6*	20.7*	19.3	16.7*	14.8	...
NETHERLANDS ANTILLES (CURACAO)	...	24.2*	...	...	...	...	...	...	...*
ST. KITTS AND NEVIS	26.0	25.3	29.0	23.8	24.2	22.3	21.4	...	...
SAINT LUCIA	32.8	32.1	32.2	30.1	30.4	33.6	31.1	29.2	27.0
ST. VINCENT & THE GRENADINES	31.4	32.6	33.5	32.6	27.7	28.0	25.8*	...	...
SURINAME	27.7	28.3	31.1	32.4	31.1	31.2	...	25.0*	...
TRINIDAD AND TOBAGO	27.3	28.9	28.8	28.9	27.1*	28.5*	26.5*	23.8*	...
TURKS AND CAICOS ISLANDS	30.6	14.0*	25.5	19.0*	25.0	33.1	23.1	31.8	...
VIRGIN ISLANDS (UK)	22.7	18.7	19.6	22.2	18.0	19.1	16.4	20.2	18.2*
VIRGIN ISLANDS (US)	26.0	24.9	24.8	25.5	23.8	22.9	21.4	22.0	21.6*
NORTH AMERICA									
BERMUDA	14.9	14.4	14.9	16.6	15.3	16.3	15.9	15.8*	16.4*
CANADA	15.4	15.2	15.1	15.0	15.0	14.8	14.5	14.4*	14.4*
ST. PIERRE AND MIQUELON	15.0	18.2	21.2	13.5	21.3	...	...	...	...
UNITED STATES	15.9	15.8	15.9	15.5	15.5	15.8	15.6	15.7*	15.9*

* PROVISIONAL

TABLE II-5a.

Estimated and projected population (in thousands) under 15 years, 15 to 64 years, and 65 years and over, by subregion and country, 1985 and 2000.

Subregion and country	Under 15 years		15 to 64 years		65 years and over	
	1985	2000	1985	2000	1985	2000
REGIONAL TOTAL[a]	208,959	236,412	409,961	531,404	49,311	66,472
LATIN AMERICA	149,184	174,561	229,778	328,372	17,724	28,257
Andean area	32,185	40,457	46,361	69,015	2,931	4,856
Bolivia	2,787	4,234	3,379	5,178	204	312
Colombia	10,668	12,420	16,960	23,868	1,084	1,710
Ecuador	3,920	5,333	5,113	8,054	345	553
Peru	7,971	9,950	11,020	16,795	707	1,206
Venezuela	6,839	8,520	9,889	15,120	591	1,075
Southern cone	15,380	17,310	30,009	37,904	3,768	5,199
Argentina	9,241	9,864	18,479	22,810	2,611	3,564
Chile	3,814	4,488	7,601	9,757	707	1,027
Paraguay	1,143	2,118	2,050	3,222	128	198
Uruguay	811	840	1,879	2,115	322	410
Brazil	49,366	56,988	80,372	112,782	5,828	9,717
Central American Isthmus	11,272	15,295	13,273	21,105	825	1,490
Belize	69	75	86	130	4	10
Costa Rica	971	1,198	1,567	2,325	104	189
El Salvador	2,195	2,799	2,411	3,661	161	281
Guatemala	3,656	5,247	4,073	6,520	234	454
Honduras	2,033	2,818	2,210	3,791	143	236
Nicaragua	1,529	2,247	1,660	2,852	82	163
Panama	819	911	1,266	1,826	97	157
Mexico	32,479	35,144	44,039	67,205	2,857	4,886
Latin Caribbean	8,502	9,367	15,724	20,361	1,515	2,109
Cuba	2,554	2,389	6,601	7,750	793	1,048
Haiti	2,379	2,961	3,319	4,565	227	313
Puerto Rico	1,024	1,097	2,141	2,714	286	380
Dominican Republic	2,545	2,920	3,663	5,332	209	368
CARIBBEAN[b]	2,355	2,403	4,117	5,459	410	532
Barbados	69	71	156	188	27	26
Guadeloupe	94	90	213	230	26	35
Guyana	352	337	563	800	37	59
Jamaica	858	860	1,338	1,855	142	172
Martinique	81	86	218	227	30	39
Suriname	139	140	220	302	16	27
Trinidad and Tobago	390	418	730	982	65	81
AMERICA DEL NORTE	57,420	59,448	176,066	197,573	31,177	37,683
Canada	5,459	5,381	17,274	19,507	2,647	3,622
United States	51,961	54,067	158,792	178,066	28,530	34,061

Source: Based on: United Nations. Global Estimates and Projections of Population by Sex and Age. The 1988 Revision. ST/ESA/SER.A/93. New York, 1989.

[a] The regional total is the sum of all subregions.

[b] The subregional total includes Anguilla, Antigua and Barbuda, Netherland Antilles, Bahamas, Dominica, Grenada, Cayman Islands, Turks and Caicos Islands, Virgin Islands (US), Virgin Islands (UK), Montserrat, St. Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines; excludes French Guyana.

TABLE II-5b.

Estimated and projected percentage population under 15 years, 15 to 64 years, and 65 years and over, by subregion and country, 1985 and 2000.

Subregion and country	Under 15 years		15 to 64 years		65 and over	
	1985	2000	1985	2000	1985	2000
REGIONAL TOTAL	31.3	28.3	61.4	63.7	7.4	8.0
LATIN AMERICA	37.6	32.9	57.9	61.8	4.5	5.3
Andean area	39.5	35.4	56.9	60.4	3.6	4.2
Bolivia	43.8	43.5	53.0	53.3	3.2	3.2
Colombia	27.1	32.7	69.1	62.8	3.8	4.5
Ecuador	41.8	38.3	54.5	57.7	3.7	4.0
Peru	40.4	35.6	56.0	60.1	3.6	4.3
Venezuela	39.5	34.5	57.1	61.2	3.4	4.3
Southern Cone	31.3	28.7	61.0	62.7	7.7	8.6
Argentina	30.6	27.3	60.8	62.9	8.6	9.8
Chile	33.5	29.4	60.7	63.9	5.8	6.7
Paraguay	41.0	38.2	55.5	58.2	3.5	3.6
Uruguay	26.8	24.9	62.5	62.9	10.7	12.2
Brazil	36.4	31.7	59.3	62.9	4.3	5.4
Central American Isthmus	44.4	40.4	52.3	55.7	3.2	3.9
Belize	42.3	35.8	50.3	60.2	3.4	4.0
Costa Rica	36.8	32.3	59.3	62.6	3.9	5.1
El Salvador	46.0	41.5	50.6	54.3	3.4	4.2
Guatemala	45.9	42.9	51.2	53.4	2.9	3.7
Honduras	46.3	41.2	50.5	55.3	3.2	3.5
Nicaragua	46.8	42.7	50.7	54.2	2.5	3.1
Panama	37.6	31.5	57.9	63.1	4.5	5.4
Mexico	40.9	32.8	55.5	62.6	3.6	4.6
Latin Caribbean	33.0	29.3	61.1	63.9	5.9	6.6
Cuba	25.7	21.4	66.3	69.2	8.0	9.4
Haiti	40.1	37.8	56.1	58.2	3.8	4.0
Puerto Rico	29.7	26.2	62.0	64.7	8.3	9.1
Dominican Republic	39.7	33.9	57.1	61.8	3.2	4.3
CARIBBEAN	33.8	28.3	59.1	64.2	5.9	6.3
Barbados	27.1	24.7	62.2	66.0	10.7	9.3
Guadeloupe	28.0	25.4	63.9	64.5	8.1	10.1
Guyana	37.0	28.2	59.1	66.9	3.9	4.9
Jamaica	36.7	29.8	57.2	64.3	6.1	5.9
Martinique	24.4	24.6	66.4	64.3	9.2	11.1
Suriname	37.3	29.8	58.4	64.7	4.3	5.5
Trinidad and Tobago	32.9	28.3	61.7	66.2	5.4	5.5
NORTH AMERICA	21.7	20.2	66.5	67.0	11.8	12.8
Canada	21.5	18.9	68.1	68.4	10.4	12.7
United States	21.7	20.3	66.4	66.9	11.9	12.8

Source: Based on: United Nations. Global Estimates and Projections of Population by Sex and Age. The 1988 Revision. ST/ESA/SER.A/93. New York, 1989.

TABLE II-6a.

Estimated population (in thousands) in selected age groups, by subregion and country, 1985.

Subregion and country	Under 5 years	5-14	15-24	25-44	45-64	Women 15-49
REGIONAL TOTAL	74,689	134,271	126,329	184,000	99,632	169,281
LATIN AMERICA	53,942	95,242	80,704	100,069	49,003	97,919
Andean area	12,084	20,101	16,921	20,329	9,111	19,930
Bolivia	1,107	1,680	1,207	1,462	710	1,479
Colombia	3,938	6,730	6,261	7,424	3,275	7,287
Ecuador	1,480	2,440	1,913	2,223	977	2,215
Peru	3,000	4,971	3,990	4,761	2,269	4,697
Venezuela	2,559	4,280	3,550	4,459	1,880	4,252
Southern Cone a/	5,465	9,915	8,513	13,143	8,353	11,933
Argentina	3,240	6,001	4,770	8,078	5,631	7,139
Chile	1,368	2,446	2,495	3,395	1,711	3,210
Paraguay	581	933	762	918	370	881
Uruguay	276	535	486	752	641	703
Brazil	18,072	31,294	27,566	35,800	17,006	34,405
Central American Isthmus	4,277	6,995	5,075	5,578	2,622	5,745
Belize	24	45	34	37	17	34
Costa Rica	364	607	571	697	299	673
El Salvador	788	1.407	940	963	508	1,067
Guatemala	1,434	2,222	1,541	1,705	827	1,738
Honduras	782	1,251	873	916	421	958
Nicaragua	604	925	655	709	296	735
Panama	281	538	461	551	254	540
Mexico	11,172	21,307	17,076	18,647	8,314	19,280
Latin Caribbean	2,872	5,630	5,553	6,572	3,597	6,626
Cuba	715	1,839	2,251	2,703	1,645	2,687
Dominican Republic	931	1,614	1,416	1,563	684	1,575
Haiti	872	1,507	1,212	1,381	726	1,450
Puerto Rico	354	670	674	925	542	914
CARIBBEAN b/	829	1,527	1,574	1,687	858	1,765
Barbados	22	47	52	69	35	67
Guadeloupe	34	60	75	86	52	89
Guyana	124	228	213	247	103	245
Jamaica	306	552	570	505	263	576
Martinique	29	52	76	86	56	90
Suriname	50	89	90	82	48	96
Trinidad and Tobago	140	250	254	328	148	316
NORTH AMERICA	19,918	37,502	44,051	82,244	49,771	69,597
Canada	1,881	3,578	4,256	8,178	4,840	6,820
United States	18,037	33,924	39,795	74,066	44,931	62,777

Source: Based on: United Nations. Global Estimates and Projections of Population by Sex and Age. The 1988 Revision. ST/ESA/SER.A/93. New York, 1989.

a/ The regional total is the sum of all subregions. Subregional totals are the sum of the countries included in each subregion.

b/ The subregional total also includes Anguilla, Antigua and Barbuda, Netherlands Antilles, Bahamas, Dominica, Grenada, Cayman Islands, Turks and Caicos Islands, Virgin Islands (US), Virgin Islands (UK), Montserrat, St. Kitts and Nevis, St. Vincent and the Grenadines and Saint Lucia.

TABLE II-6b.

Projected population (in thousands) in selected age groups, by subregion and country, 2000.

Subregion and country	Under 5 years	5-14	15-24	25-44	45-64	Women 15-49
REGIONAL TOTAL[a]	80,170	156,242	141,407	244,859	145,138	225,517
LATIN AMERICA	60,359	114,202	100,081	152,621	75,670	147,709
Andean area	14,186	26,271	22,025	31,854	15,136	29,361
Bolivia	1,633	2,601	1,890	2,247	1,041	2,281
Colombia	4,218	8,202	7,192	11,293	5,383	10,105
Ecuador	1,934	3,399	2,695	3,690	1,669	3,457
Peru	3,445	6,505	5,454	7,697	3,644	7,110
Venezuela	2,956	5,564	4,794	6,927	3,399	6,408
Southern Cone	5,959	11,351	10,529	16,683	10,692	15,175
Argentina	3,394	6,470	6,405	9,610	6,795	8,962
Chile	1,516	2,972	2,528	4,644	2,585	4,007
Paraguay	765	1,353	1,060	1,490	672	1,383
Uruguay	284	556	536	939	640	823
Brazil	19,419	37,569	33,671	52,331	26,780	47,771
Central American Isthmus	5,594	9,701	7,625	9,373	4,107	9,209
Belize	26	49	43	62	25	59
Costa Rica	404	794	698	1,097	530	976
El Salvador	1,050	1,749	1,406	1,546	709	1,656
Guatemala	1,961	3,286	2,480	2,811	1,229	2,834
Honduras	1,019	1,799	1,396	1,712	683	1,662
Nicaragua	824	1,423	1,066	1,272	514	1,259
Panama	310	601	536	873	417	763
Mexico	12,001	23,143	22,887	32,549	13,769	29,170
Latin Caribbean	3,200	6,167	5,344	9,831	5,186	8,061
Cuba	789	1,600	1,462	3,954	2,334	3,028
Dominican Republic	980	1,940	1,664	2,544	1,124	2,252
Haiti	1,070	1,891	1,529	2,080	956	1,733
Puerto Rico	361	736	689	1,253	772	1,094
CARIBBEAN[b]	781	1,622	1,495	2,774	1,190	2,586
Barbados	24	47	42	96	50	77
Guadeloupe	28	62	50	112	68	91
Guyana	109	228	234	395	171	343
Jamaica	278	582	535	1,002	318	814
Martinique	27	59	47	114	66	80
Suriname	45	95	89	154	59	132
Trinidad and Tobago	134	284	267	472	243	409
NORTH AMERICA	19,030	40,418	39,831	89,464	68,278	75,222
Canada	1,702	3,679	3,848	8,744	6,915	7,286
United States	17,328	36,739	35,983	80,720	61,363	67,936

Source: Based on: United Nations. Global estimates and Projections of Population by Sex and Age. The 1988 Revision. ST/ESA/SER.A/93. New York, 1989.

[a] The regional total is the sum of all subregions. Subregional totals are the sum of the countries included in each subregion.

[b] The subregional total also includes Anguilla, Antigua and Barbuda, Netherlands Antilles, Bahamas, Dominica, Grenada, Cayman Islands, Turks and Caicos Islands, Virgin Islands (US), Virgin Islands (UK), Montserrat, St. Kitts and Nevis, St. Vincent and the Grenadines, and Saint Lucia.

TABLE II-7.

Estimated and projected urban population (in thousands) and percent of total population living in urban areas, by subregion and country, 1985, 1990, and 2000.

Country	Urban population (thousands)			Urban percentage		
	1985	1990	2000	1985	1990	2000
REGIONAL TOTAL[a/]	475,165	528,909	637,805	71.1	73.1	76.4
LATIN AMERICA	275,709	320,181	411,760	69.5	72.7	77.5
Andean area	55,754	65,806	87,451	68.4	71.5	76.5
Bolivia	3,046	3,759	5,687	47.8	51.4	58.5
Colombia	19,357	22,371	28,557	67.4	70.3	75.2
Ecuador	4,901	6,136	9,042	52.3	56.9	64.9
Peru	13,282	15,681	21,014	67.4	70.2	75.2
Venezuela	15,168	17,859	23,151	87.6	90.5	93.7
Southern cone	39,968	43,839	51,631	81.3	82.9	85.5
Argentina	25,648	27,856	32,163	84.6	86.2	88.8
Chile	10,130	11,280	13,538	83.6	85.6	88.6
Paraguay	1,641	2,030	2,993	44.4	47.5	54.0
Uruguay	2,549	2,673	2,937	84.6	85.5	87.3
Brazil	98,599	115,674	148,397	72.7	76.9	82.7
Central American Isthmus	11,351	13,783	20,254	44.7	47.4	53.5
Belize	82	94	126	50.3	51.6	57.0
Costa Rica	1,316	1,617	2,258	49.8	53.6	60.8
El Salvador	2,035	2,332	3,333	42.7	44.4	49.5
Guatemala	3,184	3,861	5,800	40.0	42.0	47.5
Honduras	1,739	2,240	3,522	39.7	43.6	51.5
Nicaragua	1,851	2,313	3,466	56.6	59.8	65.9
Panama	1,144	1,324	1,749	52.4	54.8	60.4
Mexico	55,276	64,304	82,985	69.6	72.6	77.4
Latin Caribbean	14,761	16,775	21,042	57.4	60.5	66.1
Cuba	7,136	7,736	8,942	71.7	74.9	79.9
Haiti	1,613	1,968	2,921	27.2	30.3	37.3
Puerto Rico	2,441	2,742	3,304	70.7	73.9	78.8
Dominican Republic	3,571	4,329	5,875	55.7	60.4	68.1
CARIBBEAN [b/]	3,421	3,895	4,958	49.1	52.2	59.1
Barbados	107	117	146	42.2	44.8	51.2
Guadaloupe	153	165	196	45.7	48.5	55.4
Guyana	307	360	501	32.2	34.6	41.9
Jamaica	1,155	1,319	1,689	49.4	52.3	58.5
Martinique	233	247	279	71.0	74.6	79.3
Suriname	171	192	254	45.6	47.6	54.2
Trinidad and Tobago	757	887	1,110	63.9	69.1	75.0
NORTH AMERICA	196,035	204,833	221,087	74.1	74.3	75.0
Canada	19,253	20,274	22,400	75.9	76.4	78.6
United States	176,782	184,559	198,687	73.9	74.1	74.6

Source: Based on: United Nations. World Population Prospects 1988. New York, 1989.

a/ The regional total is the sum of all subregions. Subregional totals are the sum of the countries included in each subregion.

b/ The subregional total also includes Anguilla, Antigua and Barbuda, Netherlands Antilles, Bahamas, Dominica, Grenada, Cayman Islands, Turks and Caicos Islands, Virgin Islands (US), Virgin Islands (UK), Montserrat, St. Kitts and Nevis, St. Vincent and the Grenadines and Saint Lucia.

ANNEX III. MORTALITY

TABLE III-1.

Crude birth and death rates (per 1,000 population) and infant mortality rates (per 1,000 births) reported around 1987 and estimated for 1985–1990, by subregion and country.

Subregion and country	Birth rate		Death rate		Infant mortality rate	
	Around 1987	Estimated 1985-1990	Around 1987	Estimated 1985-1990	Around 1987	Estimated 1985-1990
LATIN AMERICA						
Andean Area						
Bolivia[a]	42.9[b]	44.0	16.2[b]	15.9	...	124
Colombia	29.1	29.2	5.0	7.4	21.5	46
Ecuador	20.6	35.4	5.2	7.6	47.7	63
Peru	34.9	34.3	5.0[a]	10.7	33.8[a]	99
Venezuela	28.3	30.7	4.4	5.4	24.4	36
Southern Cone						
Argentina	20.7	21.4	8.4	8.6	25.7	32
Chile	21.2	23.8	5.6	6.4	19.5	20
Paraguay	22.0[c]	34.8	5.4[c]	6.6	40.3[c]	42
Uruguay	17.5	18.9	9.8	10.2	27.5	27
Brazil	38.5[c]	28.6	5.8[c]	6.1	24.8[c]	63
Central American Isthmus						
Costa Rica	28.4	28.3	3.8	4.0	14.7	18
El Salvador	29.3	36.3	5.7	8.5	32.5	59
Guatemala	37.8	40.8	7.1	9.0	56.1	59
Honduras[a]	38.7	42.3	4.7	9.0	17.4	82
Nicaragua	41.7	41.8	4.0	8.0	28.5	62
Panama	24.8	26.7	3.8	5.2	17.1	23
Mexico	31.2	29.0	5.0	5.8	23.6	47
Latin Caribbean						
Cuba	18.5	16.0	6.7	6.8	11.9	15
Dominican Republic	17.6	31.3	4.3	6.8	56.6	65
Haiti[a]	51.2	35.4	...	12.7	...	128
Puerto Rico	18.1	21.0	6.7	6.5	14.2	15
CARIBBEAN						
Barbados	15.4	18.5	8.5	8.4	21.7	11
Guadaloupe	19.0	19.5	6.7	7.3	15.4	12
Guyana	17.5	24.8	5.1[a]	5.9	36.2[a]	36
Jamaica	21.9	26.0	5.0	5.5	16.5[a]	21
Martinique	19.4	18.6	6.2	7.7	9.1	13
Suriname	25.0	25.9	4.6	6.1	17.6	31
Trinidad and Tobago	23.8	24.0	6.6	6.4	11.4	20
NORTH AMERICA						
Canada	14.3	14.1	7.3	7.4	7.3	7
United States	15.9	15.1	8.8	8.8	9.9	10

Sources: United Nations, World Population Prospects 1988, New York, 1989; PAHO, 1990.

[a]Since the reported data refer to years prior to 1985, the United Nations estimates refer to 1980-1985.

[b]Country estimate.

[c]Area of information.

TABLE III-2a.

Total number of deaths, by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	93,433*	94,287*	95,108*	...	...	...	...	...	...
COLOMBIA	125,573*	167,293	137,678*	140,292*	137,189	153,947	146,346	151,957*	...
ECUADOR	57,020	54,910*	53,009	55,202*	53,118	51,134	50,957	51,567	52,732*
PERU	105,325	88,441	85,441	93,290	...	...	...	...	...
VENEZUELA	76,834	80,346	78,329	76,725	78,797*	79,356	78,436	80,991	81,442
SOUTHERN CONE									
ARGENTINA	241,125	241,904	233,071	251,301	255,591	241,377	241,004	250,226*	263,655
CHILE	73,710	69,871	69,928*	74,428*	74,669	73,534	72,209	70,559	74,435*
FALKLAND ISLANDS	10	9	19	18	...	...	...	...	28*
PARAGUAY (AREA OF INFORMATION)	13,059	12,603	12,308	13,507	14,106	13,478	12,695	12,733*	...
URUGUAY	29,844	27,644	27,186	28,475	30,011	28,565	28,792	29,882	...
BRAZIL (AREA OF INFORMATION)	750,727	750,276	741,614	771,203	809,825	788,231	811,623	816,397*	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	815	691	703	719	785	693*	787	761*	738*
COSTA RICA	9,273	8,990	9,168	9,432	9,931	10,493	10,449	10,687	10,944
EL SALVADOR	38,967*	37,483	33,309	32,715	28,870	27,225	25,731*	...	...
GUATEMALA	71,360	71,748	76,346	74,434	66,260	69,455	69,275	68,597*	81,977*
HONDURAS	18,343	18,313	18,506	19,304	...	...	...	...	...
NICARAGUA	...	...	...	14,471	13,541	14,606	14,227	13,985*	...
PANAMA	7,959	7,976	8,142	8,499	8,250	8,991	8,942	9,105	8,727
MEXICO	...	424,274	412,345	413,403	410,550*	414,003	400,079	414,483*	414,003*
LATIN CARIBBEAN									
CUBA	55,801	57,941	56,224	58,348	59,801	64,430	63,145	65,079	67,944
DOMINICAN REPUBLIC	24,959	24,743	26,589	26,542	28,236	27,844	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	20,412	21,069	21,416	21,400	21,732	23,192	23,386	23,950	...
CARIBBEAN									
ANGUILLA	55*	67*	62*	41*	60*	57*	55*	27*	16*
ANTIGUA AND BARBUDA	422*	...	...	404*	386	405	383	364*	...
BAHAMAS	1,311	1,207	1,180	1,104	1,139	1,301	1,408	1,411	1,319*
BARBADOS	2,012	1,878	1,723	2,000	2,027	2,226*	2,090*	2,181*	2,174
CAYMAN ISLANDS	111	106	108	105	108*	116*	129*	103*	110
DOMINICA	387	340	414	349*	432	466	488*	...	...
FRENCH GUIANA	...	...	478	455	469	501*	507*	...	...
GRENADA	721*	...	...	...	729	...	...	...	...
GUADELOUPE	1,948	2,091	2,055*	2,153*	2,239*	2,309*	2,238	...	...
GUYANA	...	...	...	...	4,781	...	...	...	...
JAMAICA	12,706*	12,578*	10,861*	12,588*	13,706	13,900*	13,341*	12,400	12,167
MARTINIQUE	...	1,862	1,891	2,154*	2,039*	2,140	2,104*	...	2,092
MONTSERRAT	103*	117*	114*	124*	104*	...	123	...	...
NETHERLANDS ANTILLES (CURACAO)	...	893	...	...	...	1,027*	...	1,075*	1,219
ST. KITTS AND NEVIS	493	450	503	476	481	441	461	...	...
SAINT LUCIA	864*	843	845	795	736	816	847	925	885
ST. VINCENT & THE GRENADINES	724*	772*	717	700	700*	651	619	...	...
SURINAME	2,695	2,345	2,377	2,657	2,290	2,275	...	1,767*	...
TRINIDAD AND TOBAGO	7,506	7,354	7,641	7,546	7,819	8,000*	7,699	8,054*	...
TURKS AND CAICOS ISLANDS	11	27*	25	50	41*	49*	34*	25	...
VIRGIN ISLANDS (UK)	78*	68	68	67*	66*	70*	82*	85*	59*
VIRGIN ISLANDS (US)	540	...	522*	513*	511*	547*	508*	558	549*
NORTH AMERICA									
BERMUDA	...	...	...	398	396*	421	415*	438	399
CANADA	171,473	171,029	174,413	174,484	175,727	181,323	184,224	184,953	190,011
ST. PIERRE AND MIQUELON	39*	50*	...	25*	58	...	...	...	...
UNITED STATES	1,989,841	1,977,981	1,974,797	2,019,201	2,039,369	2,086,440	2,105,361	2,123,323	2,171,000*

* PROVISIONAL

TABLE III-2b.

Crude death rates (per 1,000 population), by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	16.8*	16.5*	16.2*	...	...	...	...	...	...
COLOMBIA	4.9*	6.3	5.1*	5.1*	4.9	5.4	5.0	5.1*	...
ECUADOR	7.0	6.6*	6.2	6.2*	5.8	5.5	5.3	5.2	5.2*
PERU	6.1	5.0	4.7	5.0	...	...	...	...	...
VENEZUELA	5.1	5.2	4.9	4.7	4.7*	4.6	4.4	4.4	4.3
SOUTHERN CONE									
ARGENTINA	8.5	8.4	8.0	8.5	8.5	8.0	7.8	8.0*	8.4
CHILE	6.6	6.2	6.1*	6.4*	6.3	6.1	5.9	5.6	5.8*
FALKLAND ISLANDS	5.0	4.5	9.5	9.0	...	...	...	...	14.0*
PARAGUAY (AREA OF INFORMATION)	6.7*	6.3	6.0*	6.5*	6.6*	6.1*	5.6*	5.4*	...
URUGUAY	10.3	9.4	9.2	9.6	10.0	9.5	9.5	9.8	...
BRAZIL (AREA OF INFORMATION)	6.2	6.0	5.8	5.9	6.1	5.8	5.9	5.8*	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	5.6	4.6	4.6	4.6	4.9	4.3*	4.7	4.5*	4.2*
COSTA RICA	4.1	3.8	3.8	3.8	3.9	4.0	3.8	3.8	3.8
EL SALVADOR	8.6*	8.3	7.2	7.0	6.1	5.7	5.3*	...	...
GUATEMALA	10.3	10.1	10.4	9.9	8.6	8.7	8.5	8.1*	7.1*
HONDURAS	5.0	4.8	4.7	4.7	...	...	...	...	...
NICARAGUA	...	...	...	4.7	4.3	4.5	4.2	4.0*	...
PANAMA	4.1	4.0	4.0	4.1	3.9	4.1	4.0	4.0	3.8
MEXICO	...	6.0	5.6	5.5	5.3*	5.2	4.9	5.0*	4.9*
LATIN CARIBBEAN									
CUBA	5.7	5.9	5.7	5.9	6.0	6.5	6.3	6.5	6.7
DOMINICAN REPUBLIC	4.5	4.4	4.6	4.5	4.6	4.3	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	6.4	6.5	6.5	6.4	6.4	6.7	6.7	6.7	...
CARIBBEAN									
ANGUILLA	7.9*	9.6*	8.9*	5.8*	8.6*	8.1*	7.9*	3.9*	2.3*
ANTIGUA AND BARBUDA	5.6*	...	...	5.1*	4.9	5.0	4.7	4.4*	...
BAHAMAS	5.9	5.3	5.1	4.7	4.8	5.4	5.7	5.7	5.2*
BARBADOS	8.1	7.5	6.9	8.0	8.0	8.8*	8.2*	8.5*	8.5
CAYMAN ISLANDS	6.5	5.9	6.0	5.5	5.7*	5.8*	6.5*	4.9*	5.2
DOMINICA	5.3	4.7	5.7	4.6*	5.7	6.1	6.3*	...	...
FRENCH GUIANA	...	...	6.5	5.9	5.9	6.1*	6.0*	...	...
GRENADA	7.8*	...	...	...	7.6	...	...	...	...
GUADELOUPE	6.0	6.4	6.2*	6.5*	6.7*	6.9*	6.7	...	...
GUYANA	...	...	...	...	5.1	...	...	...	...
JAMAICA	5.8*	5.7*	4.9*	5.6*	6.0	6.0*	5.6*	5.1	5.0
MARTINIQUE	...	5.7	5.8	6.6*	6.2*	6.5	6.4*	...	6.3
MONTSERRAT	8.6*	9.8*	9.5*	10.3*	8.7*	...	10.3	...	...
NETHERLANDS ANTILLES (CURACAO)	...	5.4	...	...	...	6.2*	...	...	...
ST. KITTS AND NEVIS	11.0	10.0	11.2	10.4	10.5	9.6	9.8	...	...
SAINT LUCIA	7.5*	7.0	6.7	6.1	5.4	6.4	6.6	7.1	6.7
ST. VINCENT & THE GRENADINES	7.4*	7.8*	7.2	6.9	6.8*	6.3	5.9	...	...
SURINAME	7.6	6.6	6.6	7.3	6.2	6.1	...	4.6*	...
TRINIDAD AND TOBAGO	6.9	6.6	6.8	6.6	6.7	6.8*	6.4	6.6*	...
TURKS AND CAICOS ISLANDS	1.6	3.4*	3.1	6.3	5.1*	6.1*	4.3*	3.1	...
VIRGIN ISLANDS (UK)	6.5*	5.7	5.7	5.2*	5.1*	5.4*	6.3*	6.5*	4.5*
VIRGIN ISLANDS (US)	5.5	...	5.1*	5.0*	5.0*	5.2*	4.7*	5.2	5.0*
NORTH AMERICA									
BERMUDA	...	...	...	7.2	7.2*	7.5	7.4*	7.7	7.0
CANADA	7.1	7.0	7.1	7.0	7.0	7.1	7.2	7.2	7.3
ST. PIERRE AND MIQUELON	6.5*	8.3*	...	4.2*	9.7	...	...	...	...
UNITED STATES	8.8	8.6	8.5	8.6	8.6	8.7	8.7	8.7	8.8*

* PROVISIONAL

TABLE III-3a.

Total number of deaths by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	241004	18163	2985	2364	4327	5742	9985	18995	36325	51612	88059	2447
BAHAMAS	1987	1411	127	32	29	70	105	95	166	213	263	301	10
BARBADOS	1988	2174	73	7	14	33	62	56	110	206	468	1143	2
BELIZE	1986	787	152	36	22	28	50	34	33	76	109	233	14
BRAZIL (AREA OF INFORMATION)	1986	811623	132211	24616	16468	38504	48059	57041	76749	104241	129290	177524	6920
CANADA	1988	190011	2705	605	837	3253	4249	5720	10021	24745	44198	93647	31
CAYMAN ISLANDS	1983	105	4	-	2	-	-	-	-	-	-	-	1
CHILE	1987	70559	5182	906	844	2131	2725	3380	5410	9634	14851	25755	41
COLOMBIA	1984	137189	13201	9745	3817	9025	9845	8443	11276	16299	22410	31227	1901
COSTA RICA	1988	10944	1194	262	179	389	513	528	746	1202	1871	3984	74
CUBA	1988	67944	2235	515	722	2534	2378	3081	4971	8145	13467	28665	30
DOMINICA	1985	466	32	9	2	9	12	11	23	44	78	175	71
DOMINICAN REPUBLIC	1985	27844	6411	1961	781	1233	1292	1313	1933	2551	3309	7056	4
ECUADOR	1987	51567	9761	4626	2041	2696	2827	2880	3371	4478	5916	12574	397
EL SALVADOR	1984	28870	4994	2037	924	2986	2009	1882	2130	2691	3381	5353	483
FALKLAND ISLANDS	1983	18	-	-	-	2	2	-	3	4	3	4	-
FRENCH GUIANA	1984	469	51	8	6	18	35	37	48	53	87	123	3
GUADELOUPE	1981	2091	140	2	32	78	82	104	188	282	431	751	-
GUATEMALA	1984	66260	20444	11960	3600	3140	3532	3148	3540	4364	5304	7040	188
GUYANA	1984	4781	549	201	146	245	242	296	465	736	782	893	228
HONDURAS	1981	18313	3697	2529	996	1070	1017	1021	1121	1324	1616	3922	-
JAMAICA	1984	13706	889	483	269	325	358	428	849	1615	3020	5344	118
MARTINIQUE	1985	2140	54	8	16	52	42	77	147	324	448	955	17
MEXICO	1986	400079	60516	19266	11972	22052	24747	26006	32525	43141	50286	104019	5549
NETHERLANDS ANTILLES (CURACAO)	1981	893	95	2	13	25	19	33	63	101	200	349	-
PANAMA	1987	9105	1121	406	247	451	469	458	588	930	1685	2678	71
PARAGUAY (AREA OF INFORMATION	1986	12695	2150	761	347	493	486	598	793	1301	1874	3598	294
PERU	1983	93290	23282	12788	3479	3967	3807	4021	5097	6351	8388	18167	3943
PUERTO RICO	1987	23950	913	106	155	589	1024	1345	1667	2974	4896	10172	89
ST. KITTS AND NEVIS	1985	441	31	10	3	8	14	7	21	53	...	...	5
SAINT LUCIA	1988	885	53	7	11	24	31	45	58	137	185	329	5
ST. VINCENT & THE GRENADINES	1986	619	68	17	13	13	30	19	49	63	124	208	15
SURINAME	1985	2275	313	87	44	101	88	113	223	314	382	598	12
TRINIDAD AND TOBAGO	1986	7699	355	95	78	272	322	409	672	1203	1859	2416	18
TURKS AND CAICOS ISLANDS	1987	25	1	-	-	-	-	1	1	8	6	7	1
UNITED STATES	1987	2123323	38408	7473	8743	38023	57701	73483	115920	273324	486103	1023583	582
URUGUAY	1987	29882	1280	191	210	358	459	870	1912	4301	6767	13341	193
VENEZUELA	1987	80991	12823	2982	2008	4275	4541	4694	6616	10388	12872	19830	162
VIRGIN ISLANDS (UK)	1982	68	11	3	-	2	3	4	4	5	10	24	2
VIRGIN ISLANDS (US)	1980	540	63	7	8	24	23	52	59	72	93	138	1
Male													
ARGENTINA	1986	133798	10195	1637	1390	2816	3487	6203	12588	23993	30784	39364	1351
BAHAMAS	1987	771	64	18	14	55	65	51	107	122	145	126	6
BARBADOS	1988	1075	37	4	3	21	39	31	64	121	260	493	2
BELIZE	1986	437	94	12	14	16	34	24	20	45	64	107	7
BRAZIL (AREA OF INFORMATION)	1986	477138	74774	13092	9898	28333	34602	38804	50185	64980	74021	83904	4475
CANADA	1988	104106	1547	343	536	2489	3070	3869	6303	15921	27089	43120	19
CAYMAN ISLANDS	1983	...	...	...	...	...	...	...	...	...	...	...	...
CHILE	1987	38086	2907	543	523	1508	1962	2159	3297	5751	8145	11251	40
COLOMBIA	1984	78160	7633	5179	2300	6646	7300	5402	6360	9081	12128	14805	1245
COSTA RICA	1988	6238	711	158	107	275	340	326	463	705	1078	2031	44
CUBA	1988	38384	1286	286	460	1535	1458	1857	2880	4722	7844	16030	26
DOMINICA	1985	230	12	3	1	6	9	6	15	19	52	77	30
DOMINICAN REPUBLIC	1985	15248	3443	1011	419	738	783	749	1042	1520	1949	3594	-
ECUADOR	1987	28235	5416	2362	1148	1687	1873	1755	2008	2616	3356	5824	190
EL SALVADOR	1984	17320	2778	1074	523	2417	1542	1292	1349	1631	1815	2618	281
FALKLAND ISLANDS	1983	13	-	-	-	2	2	-	3	3	2	1	-
FRENCH GUIANA	1984	283	25	6	6	12	25	23	34	34	58	59	1
GUADELOUPE	1981	1132	80	1	20	54	41	74	121	174	265	302	-
GUATEMALA	1984	35848	11036	5908	1892	1912	2268	1764	2112	2440	2892	3528	108
GUYANA	1984	2774	305	112	80	152	165	196	286	459	467	409	143
HONDURAS	1981	10239	2084	1307	541	664	673	626	684	737	889	2054	-
JAMAICA	1984	7048	528	248	146	208	231	236	435	854	1695	2402	65
MARTINIQUE	1985	1146	28	3	11	39	23	48	86	196	264	438	10
MEXICO	1986	224138	32850	9911	7179	15846	17846	17529	20032	24671	26947	48165	3162
NETHERLANDS ANTILLES (CURACAO)	1981	444	51	1	9	16	16	22	32	59	110	128	-
PANAMA	1987	5250	641	219	132	322	323	291	371	554	1004	1339	54
PARAGUAY (AREA OF INFORMATION	1986	6667	1151	388	186	275	288	324	431	801	1086	1602	157
PERU	1983	48676	12468	6449	1869	2240	2093	2129	2928	3648	4614	8193	2045
PUERTO RICO	1987	14040	516	57	98	445	774	1007	1180	1922	2903	5061	77
ST. KITTS AND NEVIS	1985	210	16	1	-	7	6	4	19	31	...	...	5
SAINT LUCIA	1988	458	34	4	6	16	22	27	33	67	107	140	2
ST. VINCENT & THE GRENADINES	1986	310	34	9	8	9	22	12	24	31	60	94	7
SURINAME	1985	1265	191	42	25	63	65	76	124	185	210	279	5
TRINIDAD AND TOBAGO	1986	4169	185	52	47	170	212	255	380	707	1032	1120	9
TURKS AND CAICOS ISLANDS	1987	11	1	-	-	-	-	1	-	6	1	2	-
UNITED STATES	1987	1107958	21798	4261	5579	28231	41733	49349	72857	168402	283057	432282	409
URUGUAY	1987	16210	721	103	129	245	271	542	1254	2890	4088	5846	121
VENEZUELA	1987	45816	7245	1510	1181	3118	3160	2887	4049	6313	7240	8999	114
VIRGIN ISLANDS (UK)	1982	47	8	3	-	2	2	3	2	4	4	18	1
VIRGIN ISLANDS (US)	1980	304	39	4	3	16	20	36	38	41	56	50	1
Female													
ARGENTINA	1986	105801	7859	1325	920	1467	2216	3726	6336	12199	20645	48340	768
BAHAMAS	1987	605	61	12	15	14	32	35	52	89	117	175	3
BARBADOS	1988	1099	36	3	11	12	23	25	46	85	208	650	-
BELIZE	1986	350	58	24	8	12	16	10	13	31	45	126	7
BRAZIL (AREA OF INFORMATION)	1986	333388	57025	11506	6559	10149	13355	18181	26492	39181	55186	93486	2268
CANADA	1988	85905	1158	262	301	764	1179	2051	3718	8824	17109	50527	12
CAYMAN ISLANDS	1983	...	...	...	...	...	...	...	...	...	...	...	...
CHILE	1987	32473	2275	363	321	623	763	1221	2113	3883	6406	14504	1
COLOMBIA	1984	59009	5568	4566	1517	2379	2545	3041	4916	7218	10281	16322	656
COSTA RICA	1988	4706	483	104	72	114	173	202	285	497	793	1953	30
CUBA	1988	29560	949	229	262	999	920	1224	2091	3423	5823	13636	4
DOMINICA	1985	236	20	6	1	3	3	5	8	25	26	98	41
DOMINICAN REPUBLIC	1985	12596	2968	950	362	495	509	564	891	1031	1360	3462	4
ECUADOR	1987	23332	4345	2264	893	1009	954	1125	1363	1862	2560	6750	207
EL SALVADOR	1984	11550	2216	963	401	569	467	590	781	1060	1566	2735	202
FALKLAND ISLANDS	1983	5	-	-	-	-	-	-	-	-	1	1	-
FRENCH GUIANA	1984	186	26	2	-	6	10	14	14	19	29	64	2
GUADELOUPE	1981	959	60	1	12	25	41	30	67	108	166	449	-
GUATEMALA	1984	30412	9408	6052	1708	1228	1276	1384	1428	1924	2412	3512	80
GUYANA	1984	2007	244	89	66	91	77	100	179	277	315	484	85
HONDURAS	1981	8074	1613	1222	455	406	344	395	457	587	727	1868	-
JAMAICA	1984	6658	361	235	123	117	135	192	414	761	1325	2942	53
MARTINIQUE	1985	994	26	5	5	13	19	29	61	128	184	517	7
MEXICO	1986	172423	26250	9112	4679	6063	6783	8331	12336	18262	23102	55309	2196
NETHERLANDS ANTILLES (CURACAO)	1981	449	44	1	4	9	3	11	31	41	90	215	-
PANAMA	1987	3855	480	187	115	129	146	167	217	376	681	1340	17

TABLE III-3a (*Cont.*).

Total number of deaths by age, sex, and country, latest data available.

Country	Year	Age in years										
		All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Female													
PARAGUAY (AREA OF INFORMATION)	1986	6028	999	373	161	218	200	274	362	500	808	1896	137
PERU	1983	44614	10814	6339	1610	1727	1714	1892	2169	2703	3774	9974	1898
PUERTO RICO	1987	9910	397	49	57	144	250	338	507	1052	1993	5111	12
ST. KITTS AND NEVIS	1985	231	15	9	3	1	8	3	2	22	...	...	-
SAINT LUCIA	1988	427	19	3	5	8	9	18	25	70	78	189	3
ST. VINCENT & THE GRENADINES	1986	309	34	8	5	4	8	7	25	32	64	114	8
SURINAME	1985	1010	122	45	19	38	23	37	99	129	172	319	7
TRINIDAD AND TOBAGO	1986	3530	170	43	31	102	110	154	292	496	827	1296	9
TURKS AND CAICOS ISLANDS	1987	14	-	-	-	-	-	-	1	2	5	5	1
UNITED STATES	1987	1015365	16610	3212	3164	9792	15968	24114	43063	104922	203046	591301	173
URUGUAY	1987	13668	556	88	81	113	188	328	658	1411	2679	7495	71
VENEZUELA	1987	35175	5578	1472	827	1157	1381	1807	2567	4075	5632	10831	48
VIRGIN ISLANDS (UK)	1982	21	3	-	-	-	1	1	2	1	6	6	1
VIRGIN ISLANDS (US)	1980	236	24	3	5	8	3	16	21	31	37	88	-

TABLE III-3b.

Crude, age-adjusted, and age-specific death rates (per 1,000 population), by sex and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	7.6	4.7	26.9	1.1	0.4	0.9	1.3	2.7	6.2	13.9	30.0	97.3
BAHAMAS	1987	5.7	5.1	29.3	1.4	0.5	1.4	2.5	3.5	8.5	15.7	30.1	68.1
BARBADOS	1988	8.5	...	...	0.4	0.3	0.6	1.4	2.1	6.0	11.9	30.8	103.0
BELIZE	1986	4.7	3.7	24.8	2.3	0.6	0.8	2.1	2.0	2.6	8.2	17.2	68.9
BRAZIL (AREA OF INFORMATION)	1986	5.9	5.2	24.8	1.6	0.5	1.4	2.2	3.9	7.5	14.6	31.6	95.0
CANADA	1988	7.3	3.2	7.2	0.4	0.2	0.7	0.9	1.5	3.8	10.4	26.5	89.1
CAYMAN ISLANDS	1983	5.5	...	10.3	-	0.5	...	...	...	...	...	...	...
CHILE	1987	5.6	4.3	19.5	0.9	0.3	0.8	1.3	2.2	5.1	12.4	31.4	105.1
COLOMBIA	1984	4.9	4.9	16.0	3.4	0.6	1.5	2.2	3.0	5.9	12.2	28.6	107.2
COSTA RICA	1988	3.6	3.7	14.7	0.8	0.3	0.6	1.1	1.8	3.9	9.1	24.9	118.5
CUBA	1988	6.7	4.0	11.9	0.8	0.4	1.1	1.6	2.4	5.2	11.5	26.9	101.5
DOMINICA	1985	6.1	3.8	18.8	1.2	0.1	0.5	1.1	1.9	5.2	11.2	25.2	92.1
DOMINICAN REPUBLIC	1985	4.3	5.5	56.6	2.6	0.5	0.9	1.3	2.3	4.9	10.0	26.0	105.6
ECUADOR	1987	5.2	5.7	47.7	3.7	0.8	1.3	2.0	3.1	5.4	10.9	24.0	106.1
EL SALVADOR	1984	6.1	6.3	34.4	3.1	0.7	3.2	3.1	4.7	7.7	13.8	31.5	99.7
FALKLAND ISLANDS	1983	9.0	7.1	-	-	-	4.9	5.9	-	19.0	36.4	43.5	111.1
FRENCH GUIANA	1984	6.9	5.6	22.0	0.9	0.3	1.1	2.8	4.5	8.5	13.5	38.8	124.2
GUADELOUPE	1981	6.4	4.2	21.6	0.1	0.4	1.1	1.9	3.2	6.8	12.9	26.9	75.1
GUATEMALA	1984	8.6	8.4	65.5	10.9	1.7	2.1	3.5	4.9	7.4	13.4	33.7	101.9
GUYANA	1984	5.1	5.4	36.2	2.0	0.7	1.2	1.5	3.5	7.9	17.0	29.4	83.5
HONDURAS	1981	4.8	5.4	23.0	4.4	0.9	1.5	2.2	3.2	4.9	9.1	21.1	145.8
JAMAICA	1984	6.0	4.5	16.5	2.0	0.5	0.8	1.1	2.7	6.2	13.1	33.7	104.2
MARTINIQUE	1985	6.5	3.3	9.4	0.4	0.3	0.7	0.8	2.2	5.0	12.7	23.7	73.5
MEXICO	1986	4.9	5.0	23.6	2.0	0.5	1.3	2.1	3.6	6.5	13.3	27.1	102.1
NETHERLANDS ANTILLES (CURACAO)	1981	5.4	4.0	23.8	0.1	0.3	0.8	0.9	1.9	5.3	11.1	33.3	85.8
PANAMA	1987	4.0	3.7	19.4	1.7	0.4	0.9	1.4	2.0	3.8	8.6	24.5	83.2
PARAGUAY (AREA OF INFORMATION	1986	5.6	6.0	40.1	2.6	0.8	1.1	1.4	2.9	5.9	13.3	33.3	145.7
PERU	1983	5.0	4.7	33.8	5.6	0.7	1.0	1.4	2.2	3.9	7.5	17.5	94.7
PUERTO RICO	1987	6.7	4.0	14.2	0.4	0.2	0.8	2.0	3.1	5.4	12.1	26.6	92.4
ST. KITTS AND NEVIS	1985	9.6	...	30.2	2.3	0.3	0.7	1.9	2.3	9.1	20.8	...	...
SAINT LUCIA	1988	6.7	5.3	14.8	0.4	0.4	0.8	1.6	3.9	7.8	20.9	38.9	128.0
ST. VINCENT & THE GRENADINES	1986	5.9	5.2	25.1	1.3	0.5	0.5	2.2	2.9	9.2	15.3	34.5	101.0
SURINAME	1985	6.1	5.5	26.7	2.2	0.5	1.1	1.8	3.5	7.7	16.5	38.2	98.7
TRINIDAD AND TOBAGO	1986	6.4	5.0	11.1	0.8	0.3	1.0	1.6	3.1	7.9	18.8	41.6	112.9
TURKS AND CAICOS ISLANDS	1987	3.1	2.3	3.9	-	-	-	-	1.1	1.6	18.6	22.2	50.0
UNITED STATES	1987	8.7	3.6	10.0	0.5	0.3	1.0	1.3	2.1	5.0	12.4	27.5	84.1
URUGUAY	1987	9.8	4.8	24.0	0.9	0.4	0.7	1.1	2.5	5.6	14.0	32.7	109.5
VENEZUELA	1987	4.4	4.6	24.8	1.4	0.4	1.1	1.6	2.5	5.6	13.0	30.5	98.4
VIRGIN ISLANDS (UK)	1982	5.7	5.1	46.8	2.6	-	0.8	1.7	3.2	4.3	7.7	23.3	120.0
VIRGIN ISLANDS (US)	1980	5.5	4.7	24.7	0.7	0.4	1.1	1.6	3.1	7.8	13.5	26.0	86.3
Male													
ARGENTINA	1986	8.8	5.7	29.6	1.2	0.5	1.2	1.6	3.3	8.3	19.3	40.3	107.8
BAHAMAS	1987	6.3	6.0	29.6	1.6	0.5	2.0	3.1	3.9	11.3	19.3	37.3	79.7
BARBADOS	1988	8.8	...	...	0.4	0.1	0.8	1.7	2.5	7.8	17.0	43.3	123.3
BELIZE	1986	5.2	4.1	30.0	1.5	0.7	0.9	2.8	2.8	5.2	10.0	20.8	65.2
BRAZIL (AREA OF INFORMATION)	1986	6.9	6.2	28.0	1.7	0.6	2.0	3.2	5.4	9.9	18.5	37.7	97.7
CANADA	1988	8.1	4.1	8.1	0.4	0.3	1.1	1.3	2.0	4.8	13.9	36.2	107.5
CAYMAN ISLANDS	1983	...	...	...	-	-	...	...	...	...	...	...	...
CHILE	1987	6.1	5.2	21.3	1.0	0.4	1.2	1.9	2.9	6.4	15.9	40.3	120.1
COLOMBIA	1984	5.5	5.8	18.1	3.6	0.7	2.1	3.2	3.7	6.7	14.3	33.9	123.4
COSTA RICA	1988	4.3	4.6	16.9	1.0	0.3	0.9	1.4	2.3	4.8	10.8	30.5	142.0
CUBA	1988	7.4	4.5	13.3	0.9	0.5	1.3	2.0	2.9	6.0	13.3	30.4	107.1
DOMINICA	1985	6.0	4.3	13.8	0.8	0.1	0.6	1.5	2.1	7.9	10.7	37.1	108.5
DOMINICAN REPUBLIC	1985	4.7	6.0	59.4	2.7	0.5	1.0	1.6	2.7	5.3	11.6	30.1	112.7
ECUADOR	1987	5.7	6.4	52.1	3.8	0.9	1.6	2.6	3.8	6.5	13.0	28.6	110.1
EL SALVADOR	1984	7.3	7.8	36.8	3.3	0.8	5.1	4.7	6.4	9.9	17.3	38.1	118.5
FALKLAND ISLANDS	1983	13.1	11.4	-	-	-	9.6	11.8	-	39.0	58.8	64.5	76.9
FRENCH GUIANA	1984	7.1	6.9	21.5	1.4	0.6	1.5	4.0	5.6	12.1	17.8	54.7	131.1
GUADELOUPE	1981	7.1	5.2	24.5	0.1	0.5	1.5	2.0	4.7	9.5	16.0	37.9	75.5
GUATEMALA	1984	9.2	9.1	69.6	10.6	1.7	2.5	4.4	5.4	8.8	15.0	37.2	106.6
GUYANA	1984	5.9	6.3	39.2	2.2	0.7	1.4	2.1	4.9	10.0	21.3	36.5	83.5
HONDURAS	1981	5.3	6.2	25.3	4.5	1.0	1.6	2.9	3.9	5.8	10.2	23.8	165.6
JAMAICA	1984	6.2	5.1	19.3	2.0	0.5	0.7	1.4	3.2	6.8	15.0	41.0	110.7
MARTINIQUE	1985	7.2	4.0	10.4	0.3	0.4	1.0	0.9	2.9	6.2	16.6	29.3	87.6
MEXICO	1986	5.5	5.8	25.1	2.0	0.6	1.8	3.1	4.9	8.3	16.1	31.8	108.9
NETHERLANDS ANTILLES (CURACAO)	1981	5.4	4.3	25.5	0.1	0.4	0.9	1.5	2.8	5.3	14.8	36.7	64.0
PANAMA	1987	4.5	4.3	21.7	1.8	0.5	1.3	1.8	2.4	4.7	10.0	28.3	85.8
PARAGUAY (AREA OF INFORMATION	1986	5.9	6.6	41.1	2.7	0.6	1.2	1.6	3.2	6.6	17.0	41.0	152.6
PERU	1983	5.2	5.1	35.5	5.6	0.8	1.2	1.5	2.3	4.5	8.9	20.6	99.2
PUERTO RICO	1987	8.1	5.2	15.7	0.4	0.3	1.3	3.2	5.0	8.1	16.8	33.6	100.4
ST. KITTS AND NEVIS	1985	9.3	...	31.1	0.5	-	1.2	1.6	3.0	18.6	27.4	...	...
SAINT LUCIA	1988	7.1	6.5	19.2	0.5	0.4	1.2	2.4	4.9	9.7	24.0	50.2	140.0
ST. VINCENT & THE GRENADINES	1986	6.1	6.0	24.6	1.4	0.6	0.7	3.6	3.9	10.7	16.5	37.7	119.0
SURINAME	1985	6.8	6.7	33.0	2.1	0.6	1.4	2.7	5.1	8.9	18.5	42.0	139.5
TRINIDAD AND TOBAGO	1986	6.9	5.8	11.5	0.9	0.4	1.3	2.1	3.9	9.1	23.2	48.5	121.7
TURKS AND CAICOS ISLANDS	1987	2.8	2.5	7.5	-	-	-	-	2.4	-	30.0	8.3	40.0
UNITED STATES	1987	9.3	4.6	11.1	0.6	0.3	1.5	1.9	2.9	6.4	16.2	36.2	100.6
URUGUAY	1987	10.8	5.7	26.5	0.9	0.5	1.0	1.3	3.1	7.4	19.8	43.8	122.5
VENEZUELA	1987	5.0	5.4	27.5	1.4	0.5	1.6	2.2	3.0	6.9	16.0	36.5	105.3
VIRGIN ISLANDS (UK)	1982	7.9	7.8	64.5	5.0	-	1.5	2.4	4.9	4.5	12.9	21.1	225.0
VIRGIN ISLANDS (US)	1980	6.3	5.8	30.1	0.8	0.3	1.5	2.9	7.3	10.6	16.2	35.2	74.6
Female													
ARGENTINA	1986	6.6	3.7	23.7	1.0	0.3	0.6	1.0	2.0	4.1	9.0	21.6	89.5
BAHAMAS	1987	4.8	4.0	28.1	1.0	0.6	0.6	1.5	2.5	5.2	12.3	24.2	61.6
BARBADOS	1988	8.1	...	...	0.3	0.5	0.5	1.0	1.8	4.5	8.3	22.6	91.5
BELIZE	1986	4.2	3.1	19.3	3.0	0.4	0.7	1.3	1.1	2.0	6.4	13.8	72.4
BRAZIL (AREA OF INFORMATION)	1986	4.8	4.1	21.4	1.5	0.4	0.7	1.2	2.5	5.1	10.7	26.0	92.6
CANADA	1988	6.5	2.4	6.3	0.3	0.2	0.4	0.5	1.1	2.9	7.2	18.6	77.8
CAYMAN ISLANDS	1983	...	...	...	-	-	...	...	...	...	...	...	...
CHILE	1987	5.1	3.5	17.6	0.7	0.3	0.5	0.7	1.5	3.8	9.4	24.5	95.9
COLOMBIA	1984	4.2	4.1	13.8	3.3	0.5	0.8	1.1	2.2	5.2	10.3	24.2	95.8
COSTA RICA	1988	3.3	3.0	12.3	0.7	0.2	0.4	0.7	1.4	3.0	7.4	20.0	98.1
CUBA	1988	5.9	3.5	10.4	0.7	0.3	0.9	1.3	1.9	4.4	9.7	23.2	95.6
DOMINICA	1985	6.3	3.4	24.1	1.7	0.1	0.3	0.6	1.7	3.2	11.6	15.3	82.4
DOMINICAN REPUBLIC	1985	4.0	5.0	53.7	2.6	0.4	0.7	1.1	2.0	4.4	8.3	21.7	99.2
ECUADOR	1987	4.7	5.0	43.2	3.7	0.7	1.0	1.3	2.4	4.3	8.9	19.8	102.9
EL SALVADOR	1984	4.9	4.8	31.8	3.0	0.6	1.2	1.5	2.9	5.6	10.5	26.2	86.6
FALKLAND ISLANDS	1983	5.0	2.9	-	-	-	-	-	-	-	16.9	26.3	130.4
FRENCH GUIANA	1984	4.7	4.2	22.6	0.5	-	0.7	1.6	3.4	4.9	9.5	24.6	118.5
GUADELOUPE	1981	5.7	3.3	18.6	0.1	0.3	0.7	1.8	1.8	4.5	9.9	18.4	74.8
GUATEMALA	1984	7.9	7.7	61.3	11.3	1.6	1.7	2.5	4.3	5.0	11.8	30.3	97.6
GUYANA	1984	4.3	4.5	33.1	1.8	0.6	0.9	1.0	2.3	5.9	12.8	22.8	83.4
HONDURAS	1981	4.2	4.7	20.5	4.2	0.8	1.1	1.5	2.5	4.0	8.0	18.5	128.8
JAMAICA	1984	5.7	4.0	13.7	2.0	0.5	0.4	0.8	2.2	5.7	11.5	27.4	99.4
MARTINIQUE	1985	5.9	2.6	8.6	0.5	0.2	0.3	0.8	1.5	3.9	9.3	18.6	64.6
MEXICO	1986	4.3	4.0	20.9	1.9	0.4	0.7	1.2	2.3	4.8	10.7	22.9	95.9
NETHERLANDS ANTILLES (CURACAO)	1981	5.5	3.8	22.0	0.1	0.2	0.6	0.3	1.2	5.2	8.2	30.0	107.5
PANAMA	1987	3.5	3.2	17.1	1.6	0.4	0.5	0.9	1.5	2.9	7.1	20.4	80.7

TABLE III-3b (*Cont.*).

Crude, age-adjusted, and age-specific death rates (per 1,000 population), by sex and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years								
				Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Female													
PARAGUAY (AREA OF INFORMATION)	1986	5.3	5.4	39.0	2.6	0.6	0.9	1.2	2.7	5.3	9.9	26.7	140.6
PERU	1983	4.8	4.4	32.0	5.7	0.7	0.9	1.3	2.1	3.3	6.2	14.7	91.3
PUERTO RICO	1987	5.4	2.9	12.6	0.5	0.2	0.4	0.9	1.5	3.0	8.0	20.4	85.6
ST. KITTS AND NEVIS	1985	9.8	...	29.3	4.2	0.6	0.2	2.1	1.7	1.6	15.5	...	...
SAINT LUCIA	1988	6.2	4.4	10.5	0.4	0.3	0.5	0.9	2.9	6.1	18.6	29.8	120.4
ST. VINCENT & THE GRENADINES	1986	5.7	4.5	25.6	1.2	0.4	0.3	1.1	2.0	8.1	14.3	32.0	89.8
SURINAME	1985	5.3	4.4	20.6	2.3	0.4	0.8	0.9	2.2	6.6	14.3	34.4	79.8
TRINIDAD AND TOBAGO	1988	5.8	4.3	10.8	0.8	0.3	0.8	1.1	2.3	5.7	14.8	35.3	108.2
TURKS AND CAICOS ISLANDS	1987	3.5	2.1	-	-	-	-	-	-	3.1	8.7	33.3	85.6
UNITED STATES	1987	8.1	2.8	8.9	0.5	0.2	0.5	0.7	1.4	3.6	9.0	20.6	75.1
URUGUAY	1987	8.8	3.7	21.2	0.8	0.3	0.5	0.9	1.8	3.8	8.8	23.6	101.1
VENEZUELA	1987	3.9	3.9	22.0	1.4	0.4	0.6	1.0	1.9	4.3	10.1	25.2	93.3
VIRGIN ISLANDS (UK)	1982	5.4	2.8	27.0	-	-	-	1.1	1.5	4.1	2.9	25.0	50.0
VIRGIN ISLANDS (US)	1980	4.8	3.8	19.2	0.6	0.5	0.7	0.4	3.0	5.3	11.1	18.6	94.6

TABLE III-4a.

Number of infant deaths, by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	...	...	...	...	...	...	...	...	...
COLOMBIA	22,189*	32,713	20,125*	19,134*	13,201	17,944	16,185	...	...
ECUADOR	14,261	13,402*	13,101	12,694*	11,161	10,615	10,372	9,761	9,443*
PERU	25,614	20,506	21,578	23,282	...	...	...	...	...
VENEZUELA	15,631	17,493	15,231	14,106	14,338*	13,517	13,028	12,823	11,253*
SOUTHERN CONE									
ARGENTINA	23,167	22,881	20,207	19,478	19,307	17,034	16,163	17,248*	16,824
CHILE	8,072	7,082	6,428*	5,785*	5,182	5,105	5,220	5,182	5,598*
FALKLAND ISLANDS	-	2	-	-	...	...	...	...	...
PARAGUAY (AREA OF INFORMATION)	2,645	2,688	2,570	2,688	2,808	2,372	2,150	2,078*	...
URUGUAY	2,024	1,803	1,603	1,525	1,605	1,579	1,503	1,280	1,184*
BRAZIL (AREA OF INFORMATION)	180,048	173,207	163,628	154,234	155,107	130,707	132,211	120,455*	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	203	162	141	137	162	122*	152	142*	138*
COSTA RICA	1,337	1,302	1,385	1,360	1,447	1,490	1,478	1,401	1,194
EL SALVADOR	7,138	7,184	6,624	6,316	4,994	4,540*	4,155*	...	...
GUATEMALA	24,625	16,599	20,048	20,164	20,444	18,292	18,138	17,883*	14,931*
HONDURAS	3,607	3,697	3,557*	2,758*	...	...	...	...	...
NICARAGUA	...	...	...	...	...	3,752	4,025	3,862*	...
PANAMA	1,144	1,199	1,090	1,128	1,134	1,264	1,117	1,121	987
MEXICO	...	87,358	79,056	78,545	73,238*	66,639	60,516	...	...
LATIN CARIBBEAN									
CUBA	2,684	2,520	2,759	2,778	2,496	2,997	2,262	2,387	2,235
DOMINICAN REPUBLIC	5,718	5,511	6,276	6,323	6,609	6,411	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	1,347	1,323	1,185	1,139	991	946	871	913	810*
CARIBBEAN									
ANGUILLA	5*	4*	13*	-*	-*	6*	1*	-*	-*
ANTIGUA AND BARBUDA	43*	14*	14*	20*	22*	29	14	24	...
BAHAMAS	154	158	119	113	116	146	169	127	106*
BARBADOS	94	76	60	113	75	92*	77*	85*	73
CAYMAN ISLANDS	6	7	5	4	1*	4*	4*	1*	2
DOMINICA	26	17	20	26*	37	32	26*	30	...
FRENCH GUIANA	55*	...	67	42	51	50*	53*	...	...
GRENADA	54*	...	...	...	39*	56	50	45	...
GUADELOUPE	98*	140	108*	107*	118*	103*	98	...	...
GUYANA	...	...	...	...	549	...	...	...	...
JAMAICA	...	...	589*	564*	889	...	...	...	...
MARTINIQUE	...	60	67	83*	30*	54	61*	...	55
MONTSERRAT	9*	5*	2*	7*	3*	...	1	5	...
NETHERLANDS ANTILLES (CURACAO)	...	95	...	...	...	80*	...	...	48
ST. KITTS AND NEVIS	62	53	56	45	31	31	40	...	...
SAINT LUCIA	88*	96	92	105	71	99	79	76	53
ST. VINCENT & THE GRENADINES	185*	151*	128	107	75*	59	68	...	...
SURINAME	343	269	299	296	317	313	...	170*	...
TRINIDAD AND TOBAGO	648	513	523	420	434	...	355	332*	...
TURKS AND CAICOS ISLANDS	1	1*	4	7	4*	6*	4*	1	...
VIRGIN ISLANDS (UK)	9*	12	11	8*	3*	4*	5	13*	7
VIRGIN ISLANDS (US)	63	...	50*	55*	56*	43*	29*	46*	28*
NORTH AMERICA									
BERMUDA	...	...	...	8	6*	10	12*	6	3
CANADA	3,868	3,562	3,385	3,182	3,058	2,982	2,938	2,706	2,705
ST. PIERRE AND MIQUELON	-*	1	...	-	...	...	...	...	...
UNITED STATES	45,526	43,305	42,401	40,627	39,580	40,030	38,891	38,408	38,700*

* PROVISIONAL

TABLE III-4b.

Infant mortality rates (per 1,000 live births), by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	...	...	...	...	...	...	...	...	...
COLOMBIA	27.0*	39.0*	24.0*	23.1*	16.0	21.5	...	...	...
ECUADOR	54.3	50.6*	50.0	50.0*	43.4	40.5	50.4	47.7	44.7*
PERU	37.0	29.1	31.8	33.8	...	...	...	...	...
VENEZUELA	31.7	35.2	29.8	27.4	28.4*	26.9	25.8	24.8	21.5*
SOUTHERN CONE									
ARGENTINA	33.2	33.6	30.5	29.7	30.4	26.2	26.9	26.0*	25.7*
CHILE	32.7	27.2	23.4*	21.8*	20.6	19.5	19.1	19.5	18.9*
FALKLAND ISLANDS	-	74.1	-	-	...	...	...	...	...
PARAGUAY (AREA OF INFORMATION)	63.2	59.1	51.2	51.0	49.8	46.0	40.1	40.3*	...
URUGUAY	37.6	33.4	29.8	28.6	30.4	29.5	28.0	24.0*	21.0*
BRAZIL (AREA OF INFORMATION)	33.7	35.6	28.8	37.1	39.9	32.3	24.8	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	32.4	27.8	23.9	22.7	26.3	20.6*	24.8	21.0*	20.6*
COSTA RICA	19.1	18.0	18.9	18.6	19.0	17.7	17.8	17.4	14.7
EL SALVADOR	42.0	44.0	42.2	43.8	34.4	32.5*	28.6*	...	...
GUATEMALA	80.9	53.8	64.2	65.7	65.5	56.0	56.8	56.1*	43.7*
HONDURAS	23.1	23.0	22.0*	17.4*	...	...	...	...	...
NICARAGUA	...	...	...	...	...	...	28.5	...	...
PANAMA	21.7	22.3	20.0	20.4	20.0	21.8	19.4	19.4	17.1*
MEXICO	...	34.5	33.0	30.1	29.2*	25.1*	23.6	...	...
LATIN CARIBBEAN									
CUBA	19.6	18.5	17.3	16.8	15.0	16.5	13.6	13.3	11.9*
DOMINICAN REPUBLIC	29.7	28.3*	31.0	36.3*	40.6	56.6*	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	18.4	18.5	17.1	17.3	15.7	14.9	13.7*	14.2	...
CARIBBEAN									
ANGUILLA	30.9*	27.8*	76.5*	-*	-*	33.9*	6.5*	-*	...
ANTIGUA AND BARBUDA	34.7*	11.9*	12.2*	17.0*	19.5*	24.4	12.4	21.9	...
BAHAMAS	26.0	27.4	20.4	18.7	20.2	26.1	35.4	29.3	21.4*
BARBADOS	22.3	17.2	12.4	24.5	17.3	21.2*	18.7*	21.6*	...
CAYMAN ISLANDS	17.3	20.2	14.7	10.3	2.4*	10.9*	11.1*	2.8*	5.3*
DOMINICA	14.3	10.2	11.4	13.9*	21.6	18.8	15.1*	18.5	...
FRENCH GUIANA	28.5*	...	28.2	18.1	22.0	20.1*	22.2*	...	...
GRENADA	21.0*	...	...	...	13.8*	18.4	16.2	14.7	...
GUADELOUPE	15.3*	21.6	16.3*	15.9*	17.7*	15.3*	15.4	...	...
GUYANA	...	...	...	...	36.2	...	...	...	...
JAMAICA	...	...	9.6*	9.2*	16.5	...	...	...	...
MARTINIQUE	...	11.1	12.5	14.7*	5.3*	9.4	10.2*	...	8.6*
MONTSERRAT	40.2*	21.6*	7.7*	27.0*	12.1*	...	5.0*	28.2	...
NETHERLANDS ANTILLES (CURACAO)	...	23.8*	...	...	...	...	...	...	13.9*
ST. KITTS AND NEVIS	53.0	46.6	42.8	41.2	27.8	30.2	39.7	...	...
SAINT LUCIA	23.2*	24.9	22.7	26.7	17.2	23.0	19.7	19.8	14.8
ST. VINCENT & THE GRENADINES	60.2*	46.8*	38.2	32.5	26.5*	20.3	25.1*	...	...
SURINAME	34.8	26.6	26.7	25.0	27.6	26.7	...	17.6*	...
TRINIDAD AND TOBAGO	21.7	15.9	16.1	12.6	13.7*	...	11.1*	11.4*	...
TURKS AND CAICOS ISLANDS	4.7	8.9*	19.6	46.1*	20.0*	22.6*	21.6*	3.9	...
VIRGIN ISLANDS (UK)	33.1*	53.6	46.8	27.8*	12.8*	16.1*	23.5	49.4*	29.5*
VIRGIN ISLANDS (US)	24.7	...	19.8*	21.2*	22.8*	17.9*	12.7*	19.4*	11.8*
NORTH AMERICA									
BERMUDA	...	...	...	8.8	7.1*	10.9	13.5*	6.7*	3.2*
CANADA	10.4	9.6	9.1	8.5	8.1	7.9	7.9	7.3*	7.2*
ST. PIERRE AND MIQUELON	-*	9.2	...	-	...	...	...	...	...
UNITED STATES	12.6	11.9	11.5	11.2	10.8	10.6	10.4	10.0*	9.9*

* PROVISIONAL

TABLE III-5a.

Number of deaths of children 1 to 4 years of age, by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	...	...	...	...	...	...	...	...	...
COLOMBIA	8,231*	13,459	8,231*	7,674*	9,745	6,151	5,699	...	...
ECUADOR	8,203	8,156*	6,667	6,477*	6,312	4,641	4,647	4,626	4,383*
PERU	17,419	11,757	10,884	12,788	...	...	...	...	...
VENEZUELA	3,801	4,823	3,657	3,438	3,495*	3,209	3,089	2,982	...
SOUTHERN CONE									
ARGENTINA	3,971	4,023	3,391	3,468	3,560	2,768	2,985	...	...
CHILE	1,267	1,171	1,078*	1,178*	1,096	952	960	906	...
FALKLAND ISLANDS	-	-	-	-	...	...	...	...	...
PARAGUAY (AREA OF INFORMATION)	900	948	937	985	1,120	917	761	766*	...
URUGUAY	239	276	178	155	212	183	187	191	...
BRAZIL (AREA OF INFORMATION)	34,600	30,511	27,153	28,761	31,916	25,555	24,616	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	93	46	52	30	43	33*	36	43*	...
COSTA RICA	257	247	206	264	201	207	239	241	262
EL SALVADOR	...	3,087	2,310	2,136	2,037	1,632	...	...	...
GUATEMALA	13,112	11,838	14,240	14,177*	11,960	12,066	...	12,242*	8,151*
HONDURAS	2,254	2,529	2,233*	1,701*	...	...	...	...	...
NICARAGUA	...	...	...	803	681	675	705	704*	...
PANAMA	507	409	433	371	339	382	347	406	...
MEXICO	...	24,820	21,948	22,077	21,011*	22,465	19,266	...	...
LATIN CARIBBEAN									
CUBA	633	613	517	470	497	571	513	506	515
DOMINICAN REPUBLIC	2,300	1,749	1,980	1,790	2,113	1,961	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	151	151	121	101	113	122	136	106	...
CARIBBEAN									
ANGUILLA	1*	-*	1*	-*	2*	1*	-*	-*	-*
ANTIGUA AND BARBUDA	...	...	...	4*	4	2	2	4	...
BAHAMAS	36	25	24	28	20	31	30	32	...
BARBADOS	14	13	11	9	12	12*	9*	9*	7
CAYMAN ISLANDS	-	-	-	-	1*	1*	-*	1*	2
DOMINICA	7	4	4	3*	3	9	11	6	...
FRENCH GUIANA	...	...	6	9	8	...	17*	...	...
GRENADA	19*	...	...	...	14*	14	9	15	...
GUADELOUPE	...	2	16*	14*	...	36	21	...	...
GUYANA	...	...	...	...	201	...	...	...	...
JAMAICA	...	...	321*	...	483	...	...	...	...
MARTINIQUE	...	13	9	20*	53*	8	8*	...	...
MONTSERRAT	-*	-	1*	...	...	...	-	-	...
NETHERLANDS ANTILLES (CURACAO)	...	2	...	...	...	...	...	...	...
ST. KITTS AND NEVIS	14	10	6	9	5	10	8	...	...
SAINT LUCIA	21*	23	27	15	19	18	19	19	7
ST. VINCENT & THE GRENADINES	...	...	33	34	23*	11	17	...	...
SURINAME	59	81	89	78	82	87	...	44*	...
TRINIDAD AND TOBAGO	126	134	129	98	120	...	95	106*	...
TURKS AND CAICOS ISLANDS	1	-*	-	-	-*	-*	-*	-	...
VIRGIN ISLANDS (UK)	1*	-	3	2*	1*	1*	-	1*	...
VIRGIN ISLANDS (US)	7	...	5*	4*	7*	8*	2*	6*	5*
NORTH AMERICA									
BERMUDA	...	...	...	...	2	...	-	...	...
CANADA	829	746	684	678	675	633	655	641	605
ST. PIERRE AND MIQUELON	...	...	...	...	...	...	...	...	...
UNITED STATES	8,187	8,046	7,910	7,801	7,372	7,339	7,480	7,473	...

* PROVISIONAL

TABLE III-5b.

Death rates of children 1 to 4 years of age (per 1,000 population), by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	...	...	...	...	...	...	...	...	...
COLOMBIA	2.9*	4.6	2.8*	2.8*	3.4	2.1	1.9	...	...
ECUADOR	7.9	7.7*	6.1	5.9*	5.6	4.0	3.9	3.7	3.4*
PERU	8.2	5.4	4.9	5.6	...	...	...	...	...
VENEZUELA	2.1	2.6	1.9	1.8	1.8*	1.6	1.5	1.4	...
SOUTHERN CONE									
ARGENTINA	1.5	1.5	1.3	1.3	1.3	1.0	1.1	...	...
CHILE	1.4	1.3	1.2*	1.2*	1.1	0.9	0.9	0.9	...
FALKLAND ISLANDS	-	-	-	-	...	...	...	...	...
PARAGUAY (AREA OF INFORMATION)	3.6*	3.7*	3.6*	3.7*	4.2*	3.3*	2.6*	2.6*	...
URUGUAY	1.0	1.2	0.7	0.7	1.0	0.8	0.8	0.9	...
BRAZIL (AREA OF INFORMATION)	2.6	2.2	2.0	2.0	2.2	1.7	1.6	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	6.7	3.2	3.6	2.0	2.8	2.1*	2.3	2.6*	...
COSTA RICA	1.0	1.0	0.8	1.0	0.7	0.7	0.8	0.8	0.8
EL SALVADOR	...	4.9	3.6	3.4	3.1	2.5	...	...	...
GUATEMALA	13.2	11.6	13.5	13.3*	10.9	10.7	...	10.3*	6.6*
HONDURAS	4.0	4.4	3.7*	2.8*	...	...	...	...	...
NICARAGUA	...	...	...	1.8	1.5.	1.4	1.4	1.4*	...
PANAMA	2.3	1.8	1.9	1.7	1.5	1.7	1.5	1.7	...
MEXICO	...	2.7	2.3	2.5	2.3*	2.4	2.0	...	...
LATIN CARIBBEAN									
CUBA	1.0	1.0	0.8	0.8	0.8	0.9	0.8	0.8	0.8
DOMINICAN REPUBLIC	3.5	2.6	2.9	2.6	3.0	2.6	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.4	...
CARIBBEAN									
ANGUILLA	1.5*	-*	1.5*	-*	3.1*	1.6*	-*	-*	-*
ANTIGUA AND BARBUDA	...	...	...	0.7*	0.7	0.4	0.4	0.7	...
BAHAMAS	1.6	1.1	1.1	1.3	0.9	1.4	1.3	1.4	...
BARBADOS	0.8	0.7	0.6	0.5	0.7	0.7*	0.5*	0.5*	0.4
CAYMAN ISLANDS	-	-	-	-	0.6*	0.5*	-*	0.5*	1.0
DOMINICA	1.0	0.5	0.6	0.4*	0.4	1.2	1.4	0.8	...
FRENCH GUIANA	...	...	0.7	1.1	0.9	...	1.9*	...	...
GRENADA	2.1*	...	...	...	1.4*	1.4	0.7	1.5	...
GUADELOUPE	...	0.1	0.8*	0.5*	...	1.3	0.7	...	...
GUYANA	...	...	...	...	2.0	...	...	...	...
JAMAICA	...	...	1.4*	...	2.0	...	...	...	...
MARTINIQUE	...	0.8	0.6	0.9*	2.3*	0.4	0.4*	...	...
MONTSERRAT	-*	-	0.9*	...	...	...	-	-	...
NETHERLANDS ANTILLES (CURACAO)	...	0.1*	...	...	...	...	...	...	...
ST. KITTS AND NEVIS	3.3	2.4	1.4	2.1	1.2	2.3	1.8	...	...
SAINT LUCIA	1.6*	1.7	1.9	1.0	1.2	1.2	1.3	1.2	0.4
ST. VINCENT & THE GRENADINES	...	...	2.8	2.7	1.8*	0.8	1.3	...	...
SURINAME	1.8	2.5	2.7	2.0	2.1	2.2	...	1.1*	...
TRINIDAD AND TOBAGO	1.2	1.3	1.2	0.9	1.1	...	0.8	0.9*	...
TURKS AND CAICOS ISLANDS	1.5	-*	-	-	-*	-*	-*	-	...
VIRGIN ISLANDS (UK)	0.9*	-	2.6	1.7*	0.8*	0.8*	-	0.8*	...
VIRGIN ISLANDS (US)	0.7	...	0.5*	0.4*	0.7*	0.8*	0.2*	0.6*	0.5*
NORTH AMERICA									
BERMUDA	...	...	...	...	0.4	...	-	...	...
CANADA	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
ST. PIERRE AND MIQUELON	...	...	...	...	...	...	...	...	...
UNITED STATES	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	...

* PROVISIONAL

TABLE III-6.

Number of deaths of children under 5 years and percent of all deaths, by subregion and country, latest data available.

Subregion and Country	Year	All ages	Under 5 years		Under 1 year		1 to 4 years	
			No.	%	No.	%	No.	%
LATIN AMERICA								
Andean Area								
Colombia	1986	158,731	34,225	21.6	25,244	15.9	8,981	5.7
Ecuador	1987	51,567	14,387	27.9	9,761	18.9	4,626	9.3
Peru	1983	93,290	36,070	38.7	23,282	25.0	12,788	13.7
Venezuela	1987	80,991	15,401	19.0	12,620	15.6	2,781	3.4
Southern Cone								
Argentina	1986	241,004	21,148	8.8	18,163	7.5	2,985	1.2
Chile	1987	70,559	6,088	8.6	5,182	7.3	906	1.2
Falkland Islands	1983	18	-	-	-	-	-	-
Paraguay a/	1986	12,695	2,911	22.9	2,150	16.9	761	6.0
Uruguay	1986	28,792	1,690	5.9	1,503	5.2	187	0.6
Brazil a/	1986	811,623	156,827	19.3	132,211	16.3	24,616	3.0
Central American Isthmus								
Belize	1986	787	188	23.9	152	19.3	36	4.6
Costa Rica	1988	10,944	1,456	13.3	1,194	10.9	262	2.4
El Salvador	1984	28,870	7,031	24.4	4,994	17.3	2,037	7.1
Guatemala	1987	68,597	30,125	43.9	17,833	26.1	12,242	17.8
Honduras	1983	19,304	4,459	23.1	2,758	14.3	1,701	8.8
Nicaragua	1977	12,492	4,564	36.5	3,459	27.7	1,105	8.8
Panama	1987	9,105	1,527	16.8	1,121	12.3	406	4.5
Mexico	1986	400,079	79,782	19.9	60,516	15.1	19,266	4.8
Latin Caribbean								
Cuba	1988	67,944	2,750	4.0	2,235	3.3	515	0.8
Dominican Republic	1985	27,844	8,372	30.1	6,411	23.0	1,961	7.0
Puerto Rico	1987	23,950	1,019	4.3	913	3.8	106	0.4
CARIBBEAN								
Anguilla	1984	65	3	4.6	3	4.6	-	-
Antigua and Barbuda	1980	422	49	11.6	43	10.2	6	1.4
Bahamas	1987	1,411	159	11.3	127	9.0	32	2.3
Barbados	1988	2,174	80	3.7	73	3.4	7	0.3
Cayman Islands	1983	105	4	3.8	4	3.8	-	-
Dominica	1986	488	37	7.6	26	5.3	11	2.3
French Guiana	1986	507	122	24.1	105	20.7	17	3.4
Grenada	1984	729	53	7.3	39	5.3	14	1.9
Guadeloupe	1983	2,153	121	5.6	107	5.0	14	0.7
Guyana	1984	4,781	750	15.7	549	11.5	201	4.2
Jamaica	1984	13,706	1,372	10.0	889	6.5	483	3.5
Martinique	1985	2,140	62	2.9	54	2.5	8	0.4
Montserrat	1982	114	3	2.7	2	1.8	1	0.9
Netherlands Antilles	1981	893	97	10.9	95	10.6	2	0.2
Saint Lucia	1987	925	95	10.3	76	8.2	19	2.1
St. Kitts and Nevis	1986	461	48	10.4	40	8.7	8	1.7
St.Vincent & the Grenadines	1986	619	85	13.7	68	11.0	17	2.7
Suriname	1985	2,275	400	17.6	313	13.8	87	3.8
Trinidad and Tobago	1986	7,699	450	5.8	355	4.6	95	1.2
Turks and Caicos Islands	1987	25	1	4.0	1	4.0	-	-
Virgin Islands (UK)	1985	70	5	7.1	4	5.7	1	1.4
Virgin Islands (US)	1988	885	60	6.8	53	6.0	7	0.8
NORTH AMERICA								
Canada	1988	190,011	3,310	1.7	2,705	1.4	605	0.3
United States	1987	2,123,323	45,881	2.2	38,408	1.8	7,473	0.4

a/ Information area.

TABLE III-7a.

Maternal deaths, by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	...	...	...	...	...	...	...	...	...
COLOMBIA	...	969	...	...	642	720	625	...	...
ECUADOR	426	443*	394	413*	384	397	330	355	329*
PERU	749	648	576	611	...	...	...	...	...
VENEZUELA	319	265	257	303	307*	291	296	284	...
SOUTHERN CONE									
ARGENTINA	485	472	464	395	386	386	369	...	...
CHILE	185	173	142*	105*	94	131	129	135	...
FALKLAND ISLANDS	-	-	-	-	...	...	...	...	...
PARAGUAY (AREA OF INFORMATION)	164	134	149	164	155	146	140	100*	...
URUGUAY	27	33	20	21	20	23	14	15	...
BRAZIL (AREA OF INFORMATION)	2,551	2,540	2,293	2,118	1,962	1,892	1,814	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	2	1	3	3	3	2*	4	1*	...
COSTA RICA	16	26	21	19	18	29	30	16	15
EL SALVADOR	118*	101	133	107	99	82*	...	...	...
GUATEMALA	276	326	387	355*	236	365	360	352*	315*
HONDURAS	147	28	149	79	...	...	...	...	...
NICARAGUA	...	...	...	63	50	24*	17*	...	...
PANAMA	38	33	49	33	28	33	36	22	...
MEXICO	2,296	2,199	2,166	2,133	...	1,702	1,681	...	...
LATIN CARIBBEAN									
CUBA	82	70	89	75	77	84	87	88	73
DOMINICAN REPUBLIC	139	127	124	114	120	106	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	6	12	8	4	6	8	10	11	...
CARIBBEAN									
ANGUILLA	...	...	...	-*	-*	-*	-*	1*	-*
ANTIGUA AND BARBUDA	1*	1*	2*	2*	-*	-	1	-	...
BAHAMAS	-	3	3	1	1	1	1	3	...
BARBADOS	1	-	-	-	3	-*	1*	-*	1
CAYMAN ISLANDS	-	-	-	-	-*	1*	-*	-*	-
DOMINICA	2	1	-	-*	1	2	1*	1	...
FRENCH GUIANA	...	...	3	5	3	...	-*	...	...
GRENADA	1*	...	...	...	4	2	2	2	...
GUADELOUPE	-	3	6*	6*	...	...	...	...	...
GUYANA	...	...	...	...	17	...	...	...	...
JAMAICA	...	...	22*	...	14	...	...	...	...
MARTINIQUE	...	3	-	5*	1*	-	...	...	...
MONTSERRAT	-*	...	...	...	...	...	1	-	...
NETHERLANDS ANTILLES (CURACAO)	...	1	...	...	...	...	...	...	...
ST. KITTS AND NEVIS	1	1	3	2	1	3	...	...	...
SAINT LUCIA	1*	1	-	1	-	-	1	1	-
ST. VINCENT & THE GRENADINES	4*	1*	-	-	-*	3	-	...	...
SURINAME	8	7	10	10	8	7	...	3*	...
TRINIDAD AND TOBAGO	19	19	14	18	9	...	18	26*	...
TURKS AND CAICOS ISLANDS	-	-*	-	-	-*	-*	-*	-	...
VIRGIN ISLANDS (UK)	...	-	-	...	...	...	-	1*	...
VIRGIN ISLANDS (US)	7	...	...	...	...	...	...	...	...
NORTH AMERICA									
BERMUDA	...	...	...	...	...	...	...	...	...
CANADA	28	23	7	20	12	15	11	15	18
ST. PIERRE AND MIQUELON	...	...	...	...	...	...	...	...	...
UNITED STATES	334	309	292	290	285	295	272	251	...

* PROVISIONAL

TABLE III-7b.

Maternal mortality rates (per 10,000 live births), by subregion and country, 1980–1988.

COUNTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
LATIN AMERICA									
ANDEAN AREA									
BOLIVIA	...	...	...	...	...	...	...	...	...
COLOMBIA	...	11.5*	...	...	7.8	8.6	...	...	...
ECUADOR	16.2	16.7*	15.0	16.3*	14.9	15.1	16.0	17.4	15.6*
PERU	10.8	9.2	8.5	8.9	...	...	...	...	...
VENEZUELA	6.5	5.3	5.0	5.9	6.1*	5.8	5.9	5.5	...
SOUTHERN CONE									
ARGENTINA	7.0	6.9	7.0	6.0	6.1	5.9	5.5	...	...
CHILE	7.5	6.6	5.2*	4.0*	3.7	5.0	4.7	5.1	...
FALKLAND ISLANDS	-	-	-	-	...	...	...	...	...
PARAGUAY (AREA OF INFORMATION)	36.5	29.4	29.7	31.1	27.5	28.3	26.1	19.4*	...
URUGUAY	5.0	6.1	3.7	3.9	3.8	4.3	2.6	2.8*	...
BRAZIL (AREA OF INFORMATION)	4.8	5.2	4.0	5.1	5.0	4.7	3.4	...	...
CENTRAL AMERICAN ISTHMUS									
BELIZE	3.2	1.7	5.1	5.0	4.9	3.4*	6.5	1.5*	...
COSTA RICA	2.3	3.6	2.9	2.6	2.4	3.4	3.6	2.0	1.8
EL SALVADOR	6.9*	6.2	8.5	7.4	6.8	5.9*	...	...	...
GUATEMALA	9.1	10.6	12.4	11.6*	7.6	11.2	11.3	11.1*	9.2*
HONDURAS	9.4	1.7	9.2	5.0	...	...	...	...	...
NICARAGUA	...	...	...	4.7	4.7	...	1.2*	...	...
PANAMA	7.2	6.1	9.0	6.0	4.9	5.7	6.2	3.8	...
MEXICO	9.4	8.7	9.1	8.2	...	6.4*	6.5	...	...
LATIN CARIBBEAN									
CUBA	6.0	5.1	5.6	4.5	4.6	4.6	5.2	4.9	3.9*
DOMINICAN REPUBLIC	7.2	6.5*	6.1	6.5*	7.4	9.4*	...	...	...
HAITI	...	...	...	...	...	...	...	...	...
PUERTO RICO	0.8	1.7	1.2	0.6	0.9	1.3	1.6*	1.7	...
CARIBBEAN									
ANGUILLA	...	...	...	-*	-*	-*	-*	55.2*	...
ANTIGUA AND BARBUDA	8.1*	8.5*	17.4*	17.0*	-*	-	8.8	-	...
BAHAMAS	-	5.2	5.1	1.7	1.7	1.8	2.1	6.9	...
BARBADOS	2.4	-	-	-	6.9	-*	2.4*	-*	...
CAYMAN ISLANDS	-	-	-	-	-*	27.2*	-*	-*	-*
DOMINICA	11.0	6.0	-	-*	5.8	11.7	5.8*	6.2	...
FRENCH GUIANA	...	...	12.6	21.6	13.0	...	-*	...	...
GRENADA	3.9*	...	...	...	14.2	6.6	6.5	6.5	...
GUADELOUPE	-	4.6	9.1*	8.9*	...	...	...	...	...
GUYANA	...	...	...	...	11.2	...	...	...	...
JAMAICA	...	...	3.6*	...	2.6	...	...	...	...
MARTINIQUE	...	5.5	-	8.9*	1.8*	-	...	...	...
MONTSERRAT	-*	...	...	...	...	...	50.0*	-	...
NETHERLANDS ANTILLES (CURACAO)	...	2.5*	...	...	...	...	...	...	...
ST. KITTS AND NEVIS	8.5	8.8	23.0	18.3	9.0	29.2	...	...	...
SAINT LUCIA	2.8*	2.6	-	2.5	-	-	2.5	2.6	-
ST. VINCENT & THE GRENADINES	13.0*	3.1*	-	-	-*	10.3	-*	...	...
SURINAME	8.1	6.9	8.9	6.5	7.0	6.0	...	3.1*	...
TRINIDAD AND TOBAGO	6.4	5.9	4.3	5.4	2.8*	...	5.6*	8.9*	...
TURKS AND CAICOS ISLANDS	-	-*	-	-*	-*	-*	-*	-	...
VIRGIN ISLANDS (UK)	...	-	-	...	...	...	-	38.0*	...
VIRGIN ISLANDS (US)	27.5	...	...	...	...	...	...	...	...
NORTH AMERICA									
BERMUDA	...	...	...	...	...	...	...	...	...
CANADA	0.8	0.6	0.2	0.5	0.3	0.4	0.3	0.4*	0.5*
ST. PIERRE AND MIQUELON	...	...	...	...	...	...	...	...	...
UNITED STATES	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7*	...

* PROVISIONAL

TABLE III-8.

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	ARGENTINA											
	1982			1983			1984			1985		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	233071	799.4	488.3	251301	848.3	498.0	255591	849.3	506.9	241377	795.8	485.1
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	6	0.0	0.0	8	0.0	0.0	4	0.0	0.0	4	0.0	0.0
Paratyphoid fever and food poisoning 002.1-002.9 003,005	35	0.1	0.1	32	0.1	0.1	36	0.1	0.1	31	0.1	0.1
Shigellosis and amebiasis 004,006	6	0.0	0.0	17	0.1	0.0	2	0.0	0.0	5	0.0	0.0
Other intestinal infections 007-009	1833	6.3	7.9	1743	5.9	7.3	1585	5.3	6.7	1129	3.7	4.7
Tuberculosis of respiratory system 010-012	1385	4.8	3.1	1582	5.3	3.4	1361	4.5	3.0	1171	3.9	2.5
Other tuberculosis 013-018	206	0.7	0.6	214	0.7	0.6	214	0.7	0.6	188	0.6	0.5
Plague 020	1	0.0	0.0	-	-	-	-	-	-	-	-	-
Diphtheria 032	6	0.0	0.0	5	0.0	0.0	3	0.0	0.0	2	0.0	0.0
Whooping cough 033	29	0.1	0.1	45	0.2	0.2	108	0.4	0.5	40	0.1	0.2
Meningococcal infection 036	43	0.1	0.2	30	0.1	0.1	30	0.1	0.1	26	0.1	0.1
Tetanus 037	112	0.4	0.2	85	0.3	0.2	80	0.3	0.2	68	0.2	0.1
Septicemia 038	2006	6.9	5.5	2555	8.6	6.5	2924	9.7	7.0	3181	10.5	7.0
Acute poliomyelitis 045	5	0.0	0.0	6	0.0	0.0	4	0.0	0.0	1	0.0	0.0
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	19	0.1	0.1	30	0.1	0.1	112	0.4	0.5	79	0.3	0.4
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	1	0.0	0.0	3	0.0	0.0	-	-	-	1	0.0	0.0
Viral hepatitis 070	109	0.4	0.3	95	0.3	0.3	102	0.3	0.3	110	0.4	0.3
Rabies 071	4	0.0	0.0	3	0.0	0.0	4	0.0	0.0	-	-	-
Malaria 084	2	0.0	0.0	-	-	-	-	-	-	1	0.0	0.0
Trypanosomiasis 086	867	3.0	1.8	949	3.2	1.8	948	3.2	1.8	947	3.1	1.8
Syphilis 090-097	54	0.2	0.2	82	0.3	0.3	83	0.3	0.3	101	0.3	0.4
All other infectious and parasitic diseases rest of 001-139	415	1.4	1.1	426	1.4	1.1	393	1.3	1.0	425	1.4	1.0
Malignant neoplasm of stomach 151	3407	11.7	5.8	3342	11.3	5.4	3379	11.2	5.6	3374	11.1	5.4
Malignant neoplasm of colon 153	3006	10.3	5.0	2938	9.9	4.6	2869	9.5	4.5	3181	10.5	4.9
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	891	3.1	1.5	941	3.2	1.5	1005	3.3	1.6	913	3.0	1.4
Malignant neoplasm of trachea, bronchus and lung 162	7133	24.5	12.7	7524	25.4	13.1	7313	24.3	12.8	7351	24.2	12.6
Malignant neoplasm of female breast 174	3455	11.8	6.5	3558	12.0	6.5	3569	11.9	6.6	3661	12.1	6.6
Malignant neoplasm of cervix uteri 180	700	2.4	1.6	708	2.4	1.6	768	2.6	1.7	774	2.6	1.7
Leukemia 204-208	1435	4.9	3.7	1362	4.6	3.3	1405	4.7	3.4	1417	4.7	3.3
Malignant neoplasm of other and unspecified sites rest of 140-208	21138	72.5	38.0	21760	73.5	37.5	22039	73.2	38.3	21736	71.7	37.1
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	1186	4.1	2.5	1169	3.9	2.5	1332	4.4	2.8	1227	4.0	2.5
Diabetes mellitus 250	4662	16.0	7.7	4954	16.7	7.8	5145	17.1	8.1	4872	16.1	7.5
Kwashiorkor 260	8	0.0	0.0	23	0.1	0.1	14	0.0	0.0	11	0.0	0.0
Nutritional marasmus 261	182	0.6	0.6	188	0.6	0.7	164	0.5	0.6	81	0.3	0.3
Other protein-calorie malnutrition 262,263	1005	3.4	3.9	1218	4.1	4.5	1291	4.3	4.6	1061	3.5	3.7
Avitaminosis 264-269	88	0.3	0.3	143	0.5	0.5	67	0.2	0.2	16	0.1	0.0
Other endocrine and metabolic diseases rest of 240-279	1829	6.3	5.0	2111	7.1	5.3	2327	7.7	5.2	1923	6.3	3.9
Anemias 280-285	474	1.6	1.1	537	1.8	1.2	550	1.8	1.2	475	1.6	1.0
Other diseases of blood and blood-forming organs 286-289	227	0.8	0.6	217	0.7	0.6	279	0.9	0.7	196	0.6	0.5
Mental disorders 290-319	1211	4.2	2.8	1478	5.0	3.0	1672	5.6	3.4	1363	4.5	2.7
Meningitis 320-322	662	2.3	2.6	715	2.4	2.8	665	2.2	2.7	635	2.1	2.4
Other diseases of nervous system and sense organs 323-389	2078	7.1	5.1	2130	7.2	5.1	2052	6.8	4.8	2028	6.7	4.5
Acute rheumatic fever 390-392	23	0.1	0.0	27	0.1	0.0	39	0.1	0.1	31	0.1	0.1
Chronic rheumatic heart disease 393-398	281	1.0	0.6	288	1.0	0.6	304	1.0	0.6	255	0.8	0.5
Hypertensive disease 401-405	3471	11.9	5.9	3677	12.4	5.8	3514	11.7	5.6	3455	11.4	5.4
Acute myocardial infarction 410	16995	58.3	29.0	17350	58.6	28.3	16871	56.1	27.5	15724	51.8	25.3
Other ischemic heart disease 411-414	9486	32.5	14.9	9997	33.7	14.5	9914	32.9	14.5	8239	27.2	11.8
Diseases of pulmonary circulation and other heart disease 415-429	39926	136.9	69.5	47192	159.3	77.0	51092	169.8	83.1	49394	162.8	77.8
Cerebrovascular disease 430-438	23461	80.5	39.8	25756	86.9	41.2	25673	85.3	41.0	23859	78.7	37.5
Atherosclerosis 440	10026	34.4	15.2	10066	34.0	13.7	9369	31.1	12.6	8361	27.6	11.2
Other diseases of circulatory system 441-459	1688	5.8	2.9	1854	6.3	3.1	1911	6.4	3.2	2007	6.6	3.3
Pneumonia 480-486	5525	18.9	14.6	6732	22.7	16.1	6635	22.0	15.9	5383	17.7	11.9
Influenza 487	38	0.1	0.1	55	0.2	0.1	57	0.2	0.1	36	0.1	0.1
Bronchitis,emphysema and asthma 490-493	1996	6.8	3.8	2232	7.5	3.9	2300	7.6	4.2	2351	7.8	4.3
Other diseases of respiratory system 460-478 494-519	5206	17.9	11.2	6489	21.9	12.8	6831	22.7	13.5	6348	20.9	11.8
Ulcer of stomach and duodenum 531-533	630	2.2	1.0	684	2.3	1.1	573	1.9	0.9	517	1.7	0.8
Appendicitis 540-543	135	0.5	0.3	116	0.4	0.3	102	0.3	0.2	98	0.3	0.2
Intestinal obstruction and hernia 550-553 560	1332	4.6	2.4	1321	4.5	2.4	1281	4.3	2.2	1184	3.9	1.9
Chronic liver disease and cirrhosis 571	3848	13.2	7.8	3984	13.4	8.0	3936	13.1	7.9	3168	10.4	6.1
Other diseases of digestive system rest of 520-579	6171	21.2	11.7	6714	22.7	12.1	6580	21.9	12.1	6395	21.1	11.3
Nephritis, nephrotic syndrome and nephrosis 580-589	4085	14.0	7.7	4570	15.4	8.1	4581	15.2	8.0	4542	15.0	7.7
Hyperplasia of prostate 600	173	0.6	0.3	126	0.4	0.2	150	0.5	0.2	88	0.3	0.1
Other diseases of genitourinary system 590-599 601-629	667	2.3	1.2	738	2.5	1.3	738	2.5	1.3	718	2.4	1.2
Abortion 630-639	185	0.6	0.6	188	0.6	0.6	129	0.4	0.4	136	0.4	0.4
Direct obstetric causes 640-646 651-676	268	0.9	0.8	216	0.7	0.7	237	0.8	0.7	242	0.8	0.8
Other obstetric causes 647,648,650	11	0.0	0.0	11	0.0	0.0	20	0.1	0.1	8	0.0	0.0
Congenital anomalies 740-759	2942	10.1	12.6	2958	10.0	12.7	2947	9.8	12.9	2898	9.6	12.2
Birth trauma 767	258	0.9	1.2	294	1.0	1.4	331	1.1	1.6	326	1.1	1.6
Other conditions originating in the perinatal period 760-766 768-779	9511	32.6	44.6	8578	29.0	40.5	9017	30.0	43.6	8458	27.9	39.9
Symptoms and ill-defined conditions 780-799	6687	22.9	14.7	7573	25.6	15.8	7908	26.3	16.0	7891	26.0	17.3
All other diseases 580-739	585	2.0	1.2	569	1.9	1.2	538	1.8	1.1	586	1.9	1.2
Motor vehicle traffic accidents E810-E819	3458	11.9	10.0	3534	11.9	10.1	3388	11.3	9.6	2668	8.8	7.4
Accidental falls E880-E888	1277	4.4	2.5	1338	4.6	2.5	1309	4.3	2.4	1128	3.7	2.0
All other accidents rest of E800-E949	6418	22.0	19.8	6698	22.6	20.5	6894	22.9	20.4	6120	20.2	17.7
Suicide E950-E959	2028	7.0	4.9	1878	6.3	4.4	1894	6.3	4.4	2048	6.8	4.7
Homicide E960-E969	1221	4.2	3.7	1248	4.2	3.6	1416	4.7	4.2	1554	5.1	4.5
Injury unknown whether accidentally or purposely inflicted E980-E989	1064	3.6	3.0	1251	4.2	3.5	1055	3.5	2.9	1147	3.8	3.2
Injury from operations of war and legal intervention E970-E978,E990-E999	96	0.3	0.3	79	0.3	0.3	159	0.5	0.5	211	0.7	0.6

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	ARGENTINA 1986			BAHAMAS 1982			1983			1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	241004	784.1	465.3	1180	510.4	438.4	1104	469.6	399.5	1139	479.2	406.7
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	28	0.1	0.0	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9	31	0.1	0.1	-	-	-	1	0.4	0.5	1	0.4	0.5
Shigellosis and amebiasis 003,005	7	0.0	0.0	-	-	-	-	-	-	1	0.4	0.3
Other intestinal infections 004,006	1059	3.4	4.2	7	3.0	3.3	11	4.7	5.2	3	1.3	1.5
Tuberculosis of respiratory system 007-009	1167	3.8	2.5	6	2.6	2.0	6	2.6	2.1	12	5.0	4.4
Other tuberculosis 010-012	191	0.6	0.5	-	-	-	1	0.4	0.4	2	0.8	0.8
Plague 013-018	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 020	3	0.0	0.0	-	-	-	-	-	-	-	-	-
Whooping cough 032	27	0.1	0.1	-	-	-	-	-	-	-	-	-
Meningococcal infection 033	42	0.1	0.2	-	-	-	-	-	-	-	-	-
Tetanus 036	65	0.2	0.1	1	0.4	0.3	-	-	-	-	-	-
Septicemia 037	3501	11.4	7.6	4	1.7	1.4	8	3.4	2.6	3	1.3	1.5
Acute poliomyelitis 038	3	0.0	0.0	-	-	-	-	-	-	-	-	-
Smallpox 045	-	-	-	-	-	-	-	-	-	-	-	-
Measles 050	41	0.1	0.2	-	-	-	-	-	-	-	-	-
Yellow fever 055	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 060	4	0.0	0.0	-	-	-	-	-	-	-	-	-
Viral hepatitis 062-064	92	0.3	0.2	-	-	-	-	-	-	-	-	-
Rabies 070	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 071	5	0.0	0.0	-	-	-	-	-	-	-	-	-
Trypanosomiasis 084	890	2.9	1.7	-	-	-	-	-	-	1	0.4	0.4
Syphilis 086	89	0.3	0.3	-	-	-	-	-	-	-	-	-
All other infectious and parasitic diseases 090-097, rest of 001-139	501	1.6	1.2	1	0.4	0.4	1	0.4	0.4	4	1.7	1.7
Malignant neoplasm of stomach 151	3286	10.7	5.2	B) ...	...	...	B) ...	...	...	19	8.0	5.9
Malignant neoplasm of colon 153	3182	10.4	4.9	B) ...	...	...	B) ...	...	...	7	2.9	2.0
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	881	2.9	1.4	B) ...	...	...	B) ...	...	...	11	4.6	3.5
Malignant neoplasm of trachea, bronchus and lung 162	7193	23.4	12.3	B) ...	...	...	B) ...	...	...	32	13.5	10.7
Malignant neoplasm of female breast 174	3712	12.1	6.6	B) ...	...	...	B) ...	...	...	21	8.8	7.5
Malignant neoplasm of cervix uteri 180	827	2.7	1.8	B) ...	...	...	B) ...	...	...	8	3.4	2.9
Leukemia 204-208	1424	4.6	3.3	B) ...	...	...	B) ...	...	...	7	2.9	2.5
Malignant neoplasm of other and unspecified sites 140-208, rest of	22178	72.2	37.2	1) 235	101.6	82.9	1) 210	89.3	71.2	126	53.0	43.0
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	1259	4.1	2.6	3	1.3	1.0	4	1.7	1.3	4	1.7	1.2
Diabetes mellitus 250	4709	15.3	7.3	33	14.3	10.2	31	13.2	9.9	46	19.4	14.2
Kwashiorkor 260	12	0.0	0.0	-	-	-	-	-	-	-	-	-
Nutritional marasmus 261	78	0.3	0.3	-	-	-	-	-	-	-	-	-
Other protein-calorie malnutrition 262,263	966	3.1	3.2	1	0.4	0.5	4	1.7	1.2	4	1.7	1.8
Avitaminosis 264-269	15	0.0	0.0	-	-	-	-	-	-	-	-	-
Other endocrine and metabolic diseases 240-279, rest of	1983	6.5	3.9	7	3.0	2.4	8	3.4	2.3	11	4.6	3.8
Anemias 280-285	503	1.6	1.0	6	2.6	2.5	5	2.1	2.0	16	6.7	5.6
Other diseases of blood and blood-forming organs 286-289	237	0.8	0.6	-	-	-	1	0.4	0.4	5	2.1	1.5
Mental disorders 290-319	1303	4.2	2.5	10	4.3	3.4	7	3.0	2.3	10	4.2	3.2
Meningitis 320-322	587	1.9	2.3	4	1.7	1.9	2	0.9	0.8	9	3.8	3.4
Other diseases of nervous system and sense organs 323-389	2011	6.5	4.4	28	12.1	11.2	35	14.9	14.7	26	10.9	9.8
Acute rheumatic fever 390-392	26	0.1	0.1	E) ...	...	...	E) ...	...	...	-	-	-
Chronic rheumatic heart disease 393-398	252	0.8	0.5	E) ...	...	...	E) ...	...	...	-	-	-
Hypertensive disease 401-405	3465	11.3	5.3	E) ...	...	...	E) ...	...	...	32	13.5	10.0
Acute myocardial infarction 410	16057	52.2	25.4	E) ...	...	...	E) ...	...	...	54	22.7	17.1
Other ischemic heart disease 411-414	7783	25.3	11.2	E) ...	...	...	E) ...	...	...	70	29.4	21.7
Diseases of pulmonary circulation and other heart disease 415-429	49273	160.3	77.9	1) 189	81.7	64.2	1) 193	82.1	62.5	48	20.2	15.4
Cerebrovascular disease 430-438	24383	79.3	38.2	68	29.4	23.2	74	31.5	25.3	70	29.4	23.4
Atherosclerosis 440	7447	24.2	9.8	10	4.3	3.1	11	4.7	3.2	7	2.9	1.9
Other diseases of circulatory system 441-459	2185	7.1	3.5	17	7.4	6.4	2	0.9	0.5	10	4.2	3.3
Pneumonia 480-486	5033	16.4	11.0	55	23.8	21.0	54	23.0	18.0	81	34.1	30.0
Influenza 487	18	0.1	0.0	-	-	-	-	-	-	-	-	-
Bronchitis,emphysema and asthma 490-493	2080	6.8	3.8	88	38.1	28.6	39	16.6	13.6	11	4.6	3.8
Other diseases of respiratory system 460-478, 494-519	6402	20.8	11.6	12	5.2	4.3	19	8.1	7.0	27	11.4	10.5
Ulcer of stomach and duodenum 531-533	479	1.6	0.8	2	0.9	0.6	3	1.3	0.9	3	1.3	1.0
Appendicitis 540-543	118	0.4	0.3	1	0.4	0.3	1	0.4	0.4	-	-	-
Intestinal obstruction and hernia 550-553, 560	1172	3.8	2.0	6	2.6	2.2	4	1.7	1.7	7	2.9	2.9
Chronic liver disease and cirrhosis 571	3137	10.2	6.0	56	24.2	22.5	42	17.9	16.7	36	15.1	12.8
Other diseases of digestive system 520-529, rest of	6375	20.7	11.2	17	7.4	5.8	30	12.8	11.4	19	8.0	6.3
Nephritis, nephrotic syndrome and nephrosis 580-589	4752	15.5	8.0	4	1.7	1.3	10	4.3	3.8	6	2.5	1.7
Hyperplasia of prostate 600	81	0.3	0.1	3	1.3	0.8	-	-	-	1	0.4	0.3
Other diseases of genitourinary system 590-599, 601-629	743	2.4	1.2	11	4.8	3.5	7	3.0	2.1	11	4.6	3.6
Abortion 630-639	129	0.4	0.4	2	0.9	0.8	1	0.4	0.4	-	-	-
Direct obstetric causes 640-646, 651-676	234	0.8	0.7	1	0.4	0.4	-	-	-	1	0.4	0.3
Other obstetric causes 647,648,650	6	0.0	0.0	-	-	-	-	-	-	-	-	-
Congenital anomalies 740-759	2920	9.5	13.1	21	9.1	9.7	14	6.0	7.1	18	7.6	9.3
Birth trauma 767	373	1.2	1.7	...	...	...	...	...	...	...	...	...
Other conditions originating in the perinatal period 760-766, 768-779	9258	30.1	43.3	...	...	...	...	...	...	...	...	...
Symptoms and ill-defined conditions 780-799	5455	17.7	12.1	30	13.0	9.1	29	12.3	8.7	32	13.5	11.0
All other diseases 680-739	607	2.0	1.2	5	2.2	1.9	13	5.5	4.3	4	1.7	1.4
Motor vehicle traffic accidents E810-E819	3103	10.1	8.7	F) ...	...	...	F) ...	...	...	33	13.9	13.1
Accidental falls E880-E888	1101	3.6	1.9	F) ...	...	...	F) ...	...	...	3	1.3	0.9
All other accidents rest of E800-E949	6968	22.7	19.9	1) 100	43.3	40.8	1) 71	30.2	27.8	18	7.6	7.6
Suicide E950-E959	2315	7.5	5.4	1	0.4	0.5	5	2.1	1.8	7	2.9	2.5
Homicide E960-E969	1778	5.8	5.1	15	6.5	6.2	9	3.8	3.3	25	10.5	9.4
Injury unknown whether accidentally or purposely inflicted E980-E989	1179	3.8	3.2	44	19.0	18.0	56	23.8	21.4	61	25.7	22.3
Injury from operations of war and legal intervention E970-E978,E990-E999	225	0.7	0.7	1	0.4	0.4	-	-	-	-	-	-

1) CATEGORY INCLUDES OTHER CAUSES OF DEATH.

B) DATA INCLUDED IN MALIGNANT NEOPLASMS OF OTHER AND UNSPECIFIED SITES.
E) DATA INCLUDED IN DISEASES OF PULMONARY CIRCULATION AND OTHER FORMS OF HEART DISEASE.
F) DATA INCLUDED IN ALL OTHER ACCIDENTS.

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	BAHAMAS									BARBADOS		
	1985			1986			1987			1988		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	1301	537.5	459.0	1408	572.3	...	1411	566.6	505.3	2174	845.9	...
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9, 003,005	-	-	-	-	-	-	-	-	-	1	0.4	...
Shigellosis and amebiasis 004,006	-	-	-	-	-	-	-	-	-	-	-	-
Other intestinal infections 007-009	5	2.1	2.6	18	7.3	...	5	2.0	2.6	-	-	-
Tuberculosis of respiratory system 010-012	13	5.4	4.4	14	5.7	...	15	6.0	5.1	1	0.4	...
Other tuberculosis 013-018	1	0.4	0.4	-	-	-	-	-	-	-	-	-
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 033	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection 036	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus 037	-	-	-	-	-	-	-	-	-	-	-	-
Septicemia 038	2	0.8	0.7	-	-	-	-	-	-	2	0.8	...
Acute poliomyelitis 045	22	9.1	8.2	7	2.8	...	12	4.8	3.5	35	13.6	...
Smallpox 050	-	-	-	-	-	-	1	0.4	0.4	-	-	-
Measles 055	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	1	0.4	0.4	-	-	-	2	0.8	0.6	3	1.2	...
Rabies 071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 084	-	-	-	-	-	-	-	-	-	-	-	-
Trypanosomiasis 086	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis 090-097	-	-	-	-	-	-	1	0.4	0.7	2	0.8	...
All other infectious and parasitic diseases, rest of 001-139	2	0.8	0.6	4	1.6	...	6	2.4	1.5	7	2.7	...
Malignant neoplasm of stomach 151	27	11.2	8.2	27	11.0	...	15	6.0	4.3	48	18.7	...
Malignant neoplasm of colon 153	2	0.8	0.8	11	4.5	...	7	2.8	2.5	19	7.4	...
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	6	2.5	2.0	3	1.2	...	11	4.4	3.5	11	4.3	...
Malignant neoplasm of trachea, bronchus and lung 162	26	10.7	8.5	40	16.3	...	34	13.7	11.1	21	8.2	...
Malignant neoplasm of female breast 174	13	5.4	4.3	26	10.6	...	13	5.2	4.5	46	17.9	...
Malignant neoplasm of cervix uteri 180	10	4.1	3.4	12	4.9	...	12	4.8	3.7	26	10.1	...
Leukemia 204-208	2	0.8	0.8	10	4.1	...	13	5.2	4.2	7	2.7	...
Malignant neoplasm of other and unspecified sites, rest of 140-208	131	54.1	43.0	156	63.4	...	162	65.1	50.5	235	91.4	...
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	2	0.8	0.6	-	-	-	4	1.6	2.1	12	4.7	...
Diabetes mellitus 250	44	18.2	13.5	69	28.0	...	68	27.3	20.4	174	67.7	...
Kwashiorkor 260	-	-	-	-	-	-	-	-	-	-	-	-
Nutritional marasmus 261	-	-	-	-	-	-	-	-	-	-	-	-
Other protein-calorie malnutrition 262,263	2	0.8	0.7	3	1.2	...	-	-	-	14	5.4	...
Avitaminosis 264-269	1	0.4	0.3	-	-	-	1	0.4	0.3	-	-	-
Other endocrine and metabolic diseases, rest of 240-279	17	7.0	5.8	29	11.8	...	74	29.7	28.2	31	12.1	...
Anemias 280-285	18	7.4	6.4	8	3.3	...	6	2.4	2.4	8	3.1	...
Other diseases of blood and blood-forming organs 286-289	6	2.5	2.4	1	0.4	...	3	1.2	1.1	-	-	-
Mental disorders 290-319	14	5.8	4.3	13	5.3	...	5	2.0	1.6	6	2.3	...
Meningitis 320-322	7	2.9	3.2	5	2.0	...	7	2.8	3.6	-	-	-
Other diseases of nervous system and sense organs 323-389	27	11.2	10.4	31	12.6	...	28	11.2	9.1	39	15.2	...
Acute rheumatic fever 390-392	-	-	-	-	-	-	-	-	-	1	0.4	...
Chronic rheumatic heart disease 393-398	-	-	-	3	1.2	...	3	1.2	1.0	2	0.8	...
Hypertensive disease 401-405	66	27.3	20.0	67	27.2	...	79	31.7	23.5	69	26.8	...
Acute myocardial infarction 410	77	31.8	23.9	75	30.5	...	71	28.5	21.5	168	65.4	...
Other ischemic heart disease 411-414	44	18.2	13.3	75	30.5	...	63	25.3	18.9	62	24.1	...
Diseases of pulmonary circulation and other heart disease 415-429	62	25.6	18.8	52	21.1	...	34	13.7	11.4	205	79.8	...
Cerebrovascular disease 430-438	109	45.0	35.2	108	43.9	...	115	46.2	33.9	274	106.6	...
Atherosclerosis 440	19	7.9	4.7	13	5.3	...	8	3.2	2.3	66	25.7	...
Other diseases of circulatory system 441-459	10	4.1	3.1	10	4.1	...	9	3.6	2.3	24	9.3	...
Pneumonia 480-486	80	33.1	29.7	61	24.8	...	55	22.1	21.7	55	21.4	...
Influenza 487	2	0.8	0.5	-	-	-	1	0.4	0.5	-	-	-
Bronchitis,emphysema and asthma 490-493	10	4.1	3.0	19	7.7	...	8	3.2	2.7	23	8.9	...
Other diseases of respiratory system 460-478, 494-519	41	16.9	16.4	21	8.5	...	30	12.0	10.6	45	17.5	...
Ulcer of stomach and duodenum 531-533	1	0.4	0.3	5	2.0	...	6	2.4	2.0	15	5.8	...
Appendicitis 540-543	-	-	-	3	1.2	...	1	0.4	0.4	1	0.4	...
Intestinal obstruction and hernia 550-553, 560	1	0.4	0.3	1	0.4	...	2	0.8	1.1	14	5.4	...
Chronic liver disease and cirrhosis 571	34	14.0	12.4	40	16.3	...	44	17.7	15.2	27	10.5	...
Other diseases of digestive system, rest of 520-579	27	11.2	9.8	24	9.8	...	30	12.0	10.1	37	14.4	...
Nephritis, nephrotic syndrome and nephrosis 580-589	16	6.6	4.9	7	2.8	...	14	5.6	4.5	39	15.2	...
Hyperplasia of prostate 600	-	-	-	2	0.8	...	-	-	-	-	-	-
Other diseases of genitourinary system 590-599, 601-629	8	3.3	2.2	7	2.8	...	9	3.6	3.0	15	5.8	...
Abortion 630-639	1	0.4	0.3	1	0.4	...	-	-	-	1	0.4	...
Direct obstetric causes 640-646, 651-676	-	-	-	-	-	-	3	1.2	1.0	-	-	-
Other obstetric causes 647,648,650	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies 740-759	7	2.9	3.8	22	8.9	...	23	9.2	14.2	19	7.4	...
Birth trauma 767	-	-	-	13	5.3	...	-	-	-	-	-	-
Other conditions originating in the perinatal period 760-766, 768-779	68	28.1	38.4	89	36.2	...	-	-	-	44	17.1	...
Symptoms and ill-defined conditions 780-799	41	16.9	16.0	25	10.2	...	36	14.5	11.7	82	31.9	...
All other diseases 680-739	13	5.4	3.7	16	6.5	...	5	2.0	1.6	25	9.7	...
Motor vehicle traffic accidents E810-E819	39	16.1	14.4	41	16.7	...	47	18.9	18.1	28	10.9	...
Accidental falls E880-E888	3	1.2	0.9	4	1.6	...	3	1.2	0.9	20	7.8	...
All other accidents, rest of E800-E949	17	7.0	7.3	51	20.7	...	55	22.1	23.8	24	9.3	...
Suicide E950-E959	1	0.4	0.4	4	1.8	...	3	1.2	1.1	12	4.7	...
Homicide E960-E969	35	14.5	12.8	26	10.6	...	26	10.4	8.6	18	7.0	...
Injury unknown whether accidentally or purposely inflicted E980-E989	67	27.7	26.3	35	14.2	...	50	20.1	17.3	11	4.3	...
Injury from operations of war and legal intervention E970-E978,E990-E999	1	0.4	0.4	1	0.4	...	-	-	-	-	-	-

BAH 1986 PROVISIONAL

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	BELIZE 1986			BRAZIL (AREA OF INFORMATION) 1983			1984			1985		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	787	471.2	362.6	771203	594.3	...	809825	610.5	568.0	788231	581.4	535.3
Cholera 001	-	-	-	-	-	...	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	95	0.1	...	81	0.1	0.1	81	0.1	0.0
Paratyphoid fever and food poisoning 002.1-002.9 003,005	-	-	-	269	0.2	...	266	0.2	0.2	161	0.1	0.1
Shigellosis and amebiasis 004,006	-	-	-	77	0.1	...	98	0.1	0.1	59	0.0	0.0
Other intestinal infections 007-009	27	16.2	15.3	31027	23.9	...	31547	23.8	25.2	23428	17.3	17.9
Tuberculosis of respiratory system 010-012	3	1.8	1.3	4782	3.7	...	4985	3.8	3.5	4571	3.4	3.1
Other tuberculosis 013-018	-	-	-	641	0.5	...	604	0.5	0.4	569	0.4	0.4
Plague 020	-	-	-	-	-	...	-	-	-	-	-	-
Diphtheria 032	-	-	-	-	-	...	-	-	-	-	-	-
Whooping cough 033	-	-	-	413	0.3	...	358	0.3	0.3	251	0.2	0.2
Meningococcal infection 036	-	-	-	168	0.1	...	122	0.1	0.1	140	0.1	0.1
Tetanus 037	-	-	-	276	0.2	...	336	0.3	0.3	303	0.2	0.2
Septicemia 038	2	1.2	1.0	684	0.5	...	723	0.5	0.5	654	0.5	0.4
Acute poliomyelitis 045	12	7.2	5.6	6418	4.9	...	8035	6.1	6.1	7263	5.4	5.3
Smallpox 050	-	-	-	10	0.0	...	17	0.0	0.0	15	0.0	0.0
Measles 055	-	-	-	-	-	...	-	-	-	-	-	-
Yellow fever 060	-	-	-	1769	1.4	...	2344	1.8	2.0	1165	0.9	0.9
Arthropod-borne encephalitis 062-064	-	-	-	5	0.0	...	17	0.0	0.0	6	0.0	0.0
Viral hepatitis 070	-	-	-	-	-	...	-	-	-	2	0.0	0.0
Rabies 071	2	1.2	1.1	921	0.7	...	870	0.7	0.6	810	0.6	0.6
Malaria 084	-	-	-	69	0.1	...	57	0.0	0.0	33	0.0	0.0
Trypanosomiasis 086	2	1.2	1.3	815	0.6	...	897	0.7	0.7	943	0.7	0.7
Syphilis 090-097	-	-	-	6016	4.6	...	6274	4.7	4.3	6124	4.5	4.1
All other infectious and parasitic diseases 001-139	-	-	-	307	0.2	...	246	0.2	0.2	282	0.2	0.2
Malignant neoplasm of stomach 151	4	2.4	2.8	2838	2.2	...	2874	2.2	2.1	3086	2.3	2.2
Malignant neoplasm of colon 153	7	4.2	2.4	9263	7.1	...	9259	7.0	6.1	9121	6.7	5.9
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	1	0.6	0.3	2340	1.8	...	2422	1.8	1.6	2491	1.8	1.6
Malignant neoplasm of trachea, bronchus and lung 162	2	1.2	0.7	1270	1.0	...	1281	1.0	0.8	1231	0.9	0.8
Malignant neoplasm of female breast 174	6	3.6	2.8	7654	5.9	...	7902	6.0	5.2	8213	6.1	5.3
Malignant neoplasm of cervix uteri 180	4	2.4	1.6	4097	3.2	...	4238	3.2	2.9	4489	3.3	3.0
Leukemia 204-208	3	1.8	1.4	2286	1.8	...	2311	1.7	1.6	2561	1.9	1.7
Malignant neoplasm of other and unspecified sites 140-208	3	1.8	1.8	3046	2.3	...	3069	2.3	2.2	3045	2.2	2.1
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	26	15.6	11.6	36202	27.9	...	37326	28.1	25.0	38672	28.5	25.3
Diabetes mellitus 250	1	0.6	0.6	1304	1.0	...	1352	1.0	0.9	1200	0.9	0.8
Kwashiorkor 260	30	18.0	12.1	12806	9.9	...	12610	9.5	8.3	13558	10.0	8.7
Nutritional marasmus 261	1	0.6	0.4	223	0.2	...	320	0.2	0.3	229	0.2	0.2
Other protein-calorie malnutrition 262,263	4	2.4	1.7	1395	1.1	...	2060	1.6	1.7	1558	1.1	1.2
Avitaminosis 264-269	13	7.8	7.5	8025	6.2	...	9479	7.1	7.4	8171	6.0	6.1
Other endocrine and metabolic diseases 240-279	-	-	-	215	0.2	...	275	0.2	0.2	237	0.2	0.2
Anemias 280-285	14	8.4	8.1	2838	2.2	...	2978	2.2	2.0	3088	2.3	2.0
Other diseases of blood and blood-forming organs 286-289	4	2.4	2.0	2067	1.6	...	2169	1.6	1.6	2234	1.6	1.6
Mental disorders 290-319	1	0.6	0.8	702	0.5	...	639	0.5	0.5	622	0.5	0.4
Meningitis 320-322	3	1.8	1.5	2190	1.7	...	2363	1.8	1.6	2376	1.8	1.6
Other diseases of nervous system and sense organs 323-389	3	1.8	1.8	3556	2.6	...	3364	2.5	2.6	3183	2.3	2.4
Acute rheumatic fever 390-392	8	4.8	4.5	6174	4.8	...	6180	4.7	4.5	5900	4.4	4.2
Chronic rheumatic heart disease 393-398	-	-	-	184	0.1	...	166	0.1	0.1	166	0.1	0.1
Hypertensive disease 401-405	1	0.6	0.5	1405	1.1	...	1482	1.1	1.0	1490	1.1	1.0
Acute myocardial infarction 410	15	9.0	5.8	13409	10.3	...	13914	10.5	9.2	14749	10.9	9.6
Other ischemic heart disease 411-414	30	18.0	11.6	40917	31.5	...	42690	32.2	28.3	44461	32.8	28.8
Diseases of pulmonary circulation and other heart disease 415-429	-	-	-	17092	13.2	...	17179	13.0	11.1	17643	13.0	11.2
Cerebrovascular disease 430-438	52	31.1	21.3	50445	38.9	...	51772	39.0	34.2	52755	38.9	34.0
Atherosclerosis 440	63	37.7	26.1	67336	51.9	...	71819	54.1	47.3	73205	54.0	47.2
Other diseases of circulatory system 441-459	26	15.6	9.3	6715	5.2	...	6546	4.9	4.2	5782	4.3	3.6
Pneumonia 480-486	7	4.2	2.5	3655	2.8	...	3720	2.8	2.5	3942	2.9	2.6
Influenza 487	80	47.9	37.4	32879	25.3	...	34903	26.3	26.1	32730	24.1	23.5
Bronchitis,emphysema and asthma 490-493	-	-	-	251	0.2	...	232	0.2	0.2	230	0.2	0.1
Other diseases of respiratory system 460-478	6	3.6	2.3	8393	6.5	...	8461	6.4	5.6	8473	6.3	5.5
Ulcer of stomach and duodenum 531-533	36	21.6	17.0	17921	13.8	...	19932	15.0	13.7	20896	15.4	13.8
Appendicitis 540-543	3	1.8	1.2	2388	1.8	...	2467	1.9	1.6	2403	1.8	1.6
Intestinal obstruction and hernia 550-553	-	-	-	422	0.3	...	393	0.3	0.3	454	0.3	0.3
Chronic liver disease and cirrhosis 571	3	1.8	1.6	2229	1.7	...	2385	1.8	1.6	2398	1.8	1.6
Other diseases of digestive system 520-579	15	9.0	7.5	10222	7.9	...	11014	8.3	7.7	11077	8.2	7.5
Nephritis, nephrotic syndrome and nephrosis 580-589	5	3.0	2.2	11420	8.8	...	12045	9.1	8.2	12364	9.1	8.2
Hyperplasia of prostate 600	-	-	-	6665	5.1	...	7119	5.4	4.9	7000	5.2	4.7
Other diseases of genitourinary system 590-599 601-629	-	-	-	293	0.2	...	251	0.2	0.2	250	0.2	0.2
Abortion 630-639	25	15.0	10.1	2328	1.8	...	2473	1.9	1.7	2583	1.9	1.7
Direct obstetric causes 640-646	-	-	-	285	0.2	...	267	0.2	0.2	243	0.2	0.2
Other obstetric causes 647,648,650 651-676	4	2.4	2.2	1769	1.4	...	1613	1.2	1.1	1558	1.1	1.0
Congenital anomalies 740-759	-	-	-	84	0.0	...	82	0.1	0.1	91	0.1	0.1
Birth trauma 767	7	4.2	3.9	9048	7.0	...	8468	6.4	6.9	8535	6.3	6.7
Other conditions originating in the perinatal period 760-766 768-779	1	0.6	0.5	709	0.5	...	628	0.5	0.5	660	0.5	0.5
Symptoms and ill-defined conditions 780-799	50	29.9	25.7	52347	40.3	...	48966	36.9	39.7	45759	33.8	35.7
All other diseases 680-739	85	50.9	34.5	165774	127.8	...	182244	137.4	127.7	166809	122.9	112.8
Motor vehicle traffic accidents E810-E819	2	1.2	0.7	1569	1.2	...	1860	1.4	1.3	1755	1.3	1.2
Accidental falls E880-E888	18	10.8	9.7	20077	15.5	...	21942	16.5	15.5	24298	17.9	16.8
All other accidents rest of E800-E949	3	1.8	1.8	2320	1.8	...	2069	1.6	1.4	2453	1.8	1.6
Suicide E950-E959	61	36.5	33.7	22391	17.3	...	21338	16.1	15.3	21446	15.8	15.0
Homicide E960-E969	3	1.8	1.6	4586	3.5	...	4433	3.3	3.1	4255	3.1	2.9
Injury unknown whether accidentally or purposely inflicted E980-E989	-	-	-	17408	13.4	...	19767	14.9	13.4	19747	14.6	13.1
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	11224	8.7	...	12836	9.7	8.8	13645	10.1	9.2
	-	-	-	2	0.0	...	1	0.0	0.0	1	0.0	0.0

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	BRAZIL (AREA OF INF.) 1986			CANADA 1985			1986			1987		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	811623	586.0	516.1	181323	714.5	320.6	184224	718.7	315.5	184953	721.8	...
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	81	0.1	0.0	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food 002.1-002.9 poisoning 003,005	162	0.1	0.1	13	0.1	0.0	10	0.0	0.0	11	0.0	...
Shigellosis and amebiasis 004,006	75	0.1	0.0	1	0.0	0.0	2	0.0	0.0	1	0.0	...
Other intestinal infections 007-009	24016	17.3	14.9	42	0.2	0.1	36	0.1	0.1	26	0.1	...
Tuberculosis of respiratory system 010-012	4633	3.3	3.0	99	0.4	0.1	89	0.3	0.1	93	0.4	...
Other tuberculosis 013-018	559	0.4	0.4	34	0.1	0.1	22	0.1	0.0	15	0.1	...
Plague 020	1	0.0	0.0	-	-	-	-	-	-	-	-	-
Diphtheria 032	165	0.1	0.1	-	-	-	-	-	-	-	-	-
Whooping cough 033	145	0.1	0.1	-	-	-	-	-	-	1	0.0	...
Meningococcal infection 036	369	0.3	0.3	15	0.1	0.1	18	0.1	0.1	25	0.1	...
Tetanus 037	678	0.5	0.4	-	-	-	-	-	-	-	-	-
Septicemia 038	7600	5.5	4.8	429	1.7	0.8	445	1.7	0.7	492	1.9	...
Acute poliomyelitis 045	33	0.0	0.0	-	-	-	3	0.0	0.0	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	1632	1.2	1.1	-	-	-	-	-	-	1	0.0	...
Yellow fever 060	7	0.0	0.0	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	3	0.0	0.0	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	811	0.6	0.6	56	0.2	0.1	57	0.2	0.1	89	0.3	...
Rabies 071	29	0.0	0.0	-	-	-	-	-	-	-	-	-
Malaria 084	1053	0.8	0.7	-	-	-	-	-	-	-	-	-
Trypanosomiasis 086	6158	4.4	4.0	-	-	-	-	-	-	-	-	-
Syphilis 090-097	293	0.2	0.2	9	0.0	0.0	3	0.0	0.0	6	0.0	...
All other infectious and parasitic diseases rest of 001-139	3002	2.2	2.0	311	1.2	0.6	387	1.5	0.9	323	1.3	...
Malignant neoplasm of stomach 151	9231	6.7	5.8	2119	8.3	3.3	2213	8.6	3.4	2186	8.5	...
Malignant neoplasm of colon 153	2548	1.8	1.6	4147	16.3	6.4	4203	16.4	6.4	4358	17.0	...
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	1368	1.0	0.9	1399	5.5	2.2	1387	5.4	2.1	1384	5.4	...
Malignant neoplasm of trachea, bronchus and lung 162	8694	6.3	5.5	11442	45.1	19.4	11833	46.2	19.6	12281	47.9	...
Malignant neoplasm of female breast 174	4706	3.4	3.1	4201	16.6	7.8	4335	16.9	7.8	4350	17.0	...
Malignant neoplasm of cervix uteri 180	2535	1.8	1.7	428	1.7	0.8	428	1.7	0.9	415	1.6	...
Leukemia 204-208	3277	2.4	2.2	1808	7.1	3.8	1701	6.6	3.5	1794	7.0	...
Malignant neoplasm of other and unspecified sites rest of 140-208	40327	29.1	25.8	20789	81.9	34.9	21348	83.3	35.1	21849	85.3	...
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	1241	0.9	0.8	462	1.8	0.8	561	2.2	1.0	570	2.2	...
Diabetes mellitus 250	14577	10.5	9.2	3496	13.8	5.1	3697	14.4	5.2	3733	14.6	...
Kwashiorkor 260	276	0.2	0.2	-	-	-	-	-	-	2	0.0	...
Nutritional marasmus 261	1413	1.0	0.9	3	0.0	0.0	8	0.0	0.0	5	0.0	...
Other protein-calorie malnutrition 262,263	7680	5.5	4.9	188	0.7	0.2	170	0.7	0.2	171	0.7	...
Avitaminosis 264-269	182	0.1	0.1	18	0.1	0.0	12	0.0	0.0	12	0.0	...
Other endocrine and metabolic diseases rest of 240-279	3428	2.5	2.2	1140	4.5	2.5	1350	5.3	3.0	1568	6.1	...
Anemias 280-285	2225	1.6	1.5	435	1.7	0.8	435	1.7	0.7	483	1.9	...
Other diseases of blood and blood-forming organs 286-289	622	0.4	0.4	283	1.1	0.5	310	1.2	0.5	300	1.2	...
Mental disorders 290-319	2974	2.1	2.0	1901	7.5	2.9	2193	8.6	3.3	2178	8.5	...
Meningitis 320-322	3287	2.4	2.2	75	0.3	0.4	82	0.3	0.4	75	0.3	...
Other diseases of nervous system and sense organs 323-389	6040	4.4	4.1	3336	13.1	6.1	3624	14.1	6.4	4065	15.9	...
Acute rheumatic fever 390-392	158	0.1	0.1	14	0.1	0.0	12	0.0	0.0	8	0.0	...
Chronic rheumatic heart disease 393-398	1458	1.1	1.0	602	2.4	1.0	628	2.4	1.0	574	2.2	...
Hypertensive disease 401-405	14629	10.6	9.3	1337	5.3	1.8	1365	5.3	1.8	1272	5.0	...
Acute myocardial infarction 410	46200	33.4	29.3	27045	106.6	41.0	27072	105.8	39.6	26299	102.6	...
Other ischemic heart disease 411-414	16343	11.8	10.1	20362	80.2	28.3	20389	79.5	27.3	20295	79.2	...
Diseases of pulmonary circulation and other heart disease 415-429	53616	38.7	33.7	9585	37.8	14.0	9976	38.9	14.1	9824	38.3	...
Cerebrovascular disease 430-438	73887	53.3	46.5	13874	54.7	18.9	14029	54.7	18.5	13856	54.1	...
Atherosclerosis 440	5836	4.2	3.6	2776	10.9	3.3	2678	10.4	3.1	2555	10.0	...
Other diseases of circulatory system 441-459	4352	3.1	2.8	2915	11.5	4.2	3110	12.1	4.3	3107	12.1	...
Pneumonia 460-486	35384	25.5	22.6	5650	22.3	7.8	6019	23.5	8.0	5812	22.7	...
Influenza 487	203	0.1	0.1	229	0.9	0.3	365	1.4	0.4	135	0.5	...
Bronchitis,emphysema and asthma 490-493	8570	6.2	5.4	2328	9.2	3.5	2261	8.8	3.4	2200	8.6	...
Other diseases of respiratory system 460-478 494-519	22842	16.5	14.4	5849	23.0	8.5	6286	24.5	8.7	6287	24.5	...
Ulcer of stomach and duodenum 531-533	2273	1.6	1.4	723	2.8	1.1	745	2.9	1.0	755	2.9	...
Appendicitis 540-543	455	0.3	0.3	31	0.1	0.0	40	0.2	0.1	38	0.1	...
Intestinal obstruction and hernia 550-553 560	2337	1.7	1.5	601	2.4	0.9	618	2.4	0.9	599	2.3	...
Chronic liver disease and cirrhosis 571	12407	9.0	8.2	2205	8.7	4.4	2203	8.6	4.2	2156	8.4	...
Other diseases of digestive system rest of 520-579	13024	9.4	8.4	3220	12.7	4.9	3260	12.7	4.8	3378	13.2	...
Nephritis, nephrotic syndrome and nephrosis 580-589	7060	5.1	4.6	151	0.6	0.2	1778	6.9	2.5	1854	7.2	...
Hyperplasia of prostate 600	284	0.2	0.2	89	0.4	0.1	84	0.3	0.1	63	0.2	...
Other diseases of genitourinary system 590-599 601-629	2647	1.9	1.7	2366	9.3	3.3	797	3.1	1.0	845	3.3	...
Abortion 630-639	241	0.2	0.2	-	-	-	1	0.0	0.0	4	0.0	...
Direct obstetric causes 640-646 651-676	1439	1.0	0.9	13	0.1	0.0	9	0.0	0.0	10	0.0	...
Other obstetric causes 647,648,650	134	0.1	0.1	2	0.0	0.0	1	0.0	0.0	1	0.0	...
Congenital anomalies 740-759	8541	6.2	5.3	1406	5.5	10.1	1387	5.4	10.0	1228	4.8	...
Birth trauma 767	695	0.5	0.4	39	0.2	0.3	38	0.1	0.3	27	0.1	...
Other conditions originating in the perinatal period 760-766 768-779	45159	32.6	26.7	1175	4.6	9.9	1181	4.6	10.0	1098	4.3	...
Symptoms and ill-defined conditions 780-799	165552	119.5	104.4	3815	15.0	11.2	2288	8.9	7.0	2711	10.6	...
All other diseases 680-739	1795	1.3	1.2	845	3.3	1.4	901	3.5	1.4	891	3.5	...
Motor vehicle traffic accidents E810-E819	29574	21.4	19.9	4099	16.2	14.3	3922	15.3	13.4	4180	16.3	...
Accidental falls E880-E888	2412	1.7	1.5	1829	7.2	2.8	2012	7.8	3.0	1907	7.4	...
All other accidents rest of E800-E949	23404	16.9	15.8	3317	13.1	10.7	3162	12.3	10.0	3405	13.3	...
Suicide E950-E959	4312	3.1	2.8	3259	12.8	9.5	3670	14.3	10.6	3594	14.0	...
Homicide E960-E969	20483	14.8	13.3	551	2.2	1.9	513	2.0	1.8	565	2.2	...
Injury unknown whether accidentally or purposely inflicted E980-E989	15779	11.4	10.3	360	1.4	1.0	459	1.8	1.3	543	2.1	...
Injury from operations of war and legal intervention E970-E978,E990-E999	2	0.0	0.0	2	0.0	0.0	3	0.0	0.0	15	0.1	...

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		CANADA			CHILE								
		1983			1984			1985			1986		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		190011	728.2	318.3	74669	630.1	484.2	73534	606.7	461.9	72209	585.7	444.4
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	-	-	-	29	0.2	0.2	20	0.2	0.1	37	0.3	0.2
Paratyphoid fever and food poisoning	002.1-002.9												
	003,005	12	0.0	0.0	14	0.1	0.1	13	0.1	0.1	12	0.1	0.1
Shigellosis and amebiasis	004,006	2	0.0	0.0	5	0.0	0.0	13	0.1	0.1	15	0.1	0.1
Other intestinal infections	007-009	47	0.2	0.1	545	4.6	4.9	474	3.9	3.9	504	4.1	4.0
Tuberculosis of respiratory system	010-012	91	0.3	0.1	780	6.6	5.0	686	5.7	4.2	633	5.1	3.8
Other tuberculosis	013-018	17	0.1	0.0	106	0.9	0.8	86	0.7	0.6	99	0.8	0.7
Plague	020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	032	-	-	-	10	0.1	0.1	11	0.1	0.1	14	0.1	0.1
Whooping cough	033	-	-	-	30	0.3	0.4	10	0.1	0.1	2	0.0	0.0
Meningococcal infection	036	23	0.1	0.1	14	0.1	0.2	14	0.1	0.1	11	0.1	0.1
Tetanus	037	1	0.0	0.0	4	0.0	0.0	8	0.1	0.1	4	0.0	0.0
Septicemia	038	501	1.9	0.8	660	5.6	5.0	721	5.9	4.9	688	5.6	4.7
Acute poliomyelitis	045	3	0.0	0.0	-	-	-	-	-	-	-	-	-
Smallpox	050	-	-	-	-	-	-	-	-	-	-	-	-
Measles	055	3	0.0	0.0	10	0.1	0.1	25	0.2	0.3	24	0.2	0.3
Yellow fever	060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	73	0.3	0.1	59	0.5	0.5	53	0.4	0.4	52	0.4	0.4
Rabies	071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria	084	-	-	-	-	-	-	-	-	-	-	-	-
Trypanosomiasis	086	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis	090-097	8	0.0	0.0	33	0.3	0.2	55	0.5	0.3	47	0.4	0.3
All other infectious and parasitic diseases	rest of 001-139	342	1.3	0.7	18	0.1	0.1	15	0.1	0.1	10	0.1	0.1
Malignant neoplasm of stomach	151	2130	8.2	3.2	387	3.3	2.8	319	2.6	2.2	364	3.0	2.4
Malignant neoplasm of colon	153	4434	17.0	6.6	2335	19.7	13.4	2256	18.6	12.6	2421	19.6	13.3
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	1360	5.2	2.1	398	3.4	2.2	430	3.5	2.4	471	3.8	2.5
Malignant neoplasm of trachea, bronchus and lung	162	13104	50.2	21.1	221	1.8	1.3	230	1.9	1.3	238	1.9	1.3
Malignant neoplasm of female breast	174	4480	17.2	7.9	1202	10.1	7.1	1298	10.7	7.4	1261	10.2	7.1
Malignant neoplasm of cervix uteri	180	418	1.6	0.8	664	5.6	4.0	712	5.9	4.2	675	5.5	4.0
Leukaemia	204-208	1853	7.1	3.5	682	5.8	4.3	760	6.3	4.7	728	5.9	4.4
Malignant neoplasm of other and unspecified sites	rest of 140-208	22977	88.1	38.9	393	3.3	2.9	454	3.7	3.4	384	3.1	2.8
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	553	2.1	1.0	6125	51.7	36.2	6514	53.7	37.5	6470	52.5	36.8
Diabetes mellitus	250	3819	14.6	5.4	364	3.1	2.6	339	2.8	2.2	488	4.0	3.1
Kwashiorkor	260	-	-	-	1330	11.2	7.6	1279	10.6	7.1	1294	10.5	7.0
Nutritional marasmus	261	5	0.0	0.0	3	0.0	0.0	1	0.0	0.0	-	-	-
Other protein-calorie malnutrition	262,263	160	0.6	0.2	42	0.4	0.3	40	0.3	0.3	39	0.3	0.3
Avitaminosis	264-269	18	0.1	0.0	80	0.8	0.7	163	1.3	1.2	127	1.0	0.9
Other endocrine and metabolic diseases	rest of 240-279	1734	6.6	4.1	42	0.4	0.2	30	0.2	0.2	28	0.2	0.2
Anemias	280-285	462	1.8	0.7	256	2.2	1.7	248	2.0	1.8	229	1.9	1.5
Other diseases of blood and blood-forming organs	286-289	315	1.2	0.5	221	1.9	1.4	186	1.5	1.1	165	1.3	1.0
Mental disorders	290-319	2338	9.0	3.4	63	0.5	0.5	59	0.5	0.4	58	0.5	0.4
Meningitis	320-322	82	0.3	0.3	405	3.4	2.6	600	5.0	3.4	607	4.9	3.3
Other diseases of nervous system and sense organs	323-389	4412	16.9	7.4	199	1.7	2.1	212	1.7	2.1	205	1.7	2.0
Acute rheumatic fever	390-392	7	0.0	0.0	729	6.2	5.5	765	6.3	5.6	778	6.3	5.6
Chronic rheumatic heart disease	393-398	531	2.0	0.8	13	0.1	0.1	3	0.0	0.0	5	0.0	0.0
Hypertensive disease	401-405	1271	4.9	1.6	452	3.8	2.9	361	3.0	2.3	333	2.7	2.1
Acute myocardial infarction	410	25864	99.1	37.2	1014	8.6	5.5	1072	8.8	5.7	1063	8.6	5.6
Other ischemic heart disease	411-414	20692	79.3	27.6	4978	42.0	27.7	4899	40.4	26.6	4669	37.9	24.7
Diseases of pulmonary circulation and other heart disease	415-429	10092	38.7	14.1	2681	22.6	14.1	2560	21.1	13.3	2617	21.2	13.3
Cerebrovascular disease	430-438	14078	54.0	18.5	3184	26.7	18.0	2823	23.3	15.4	2841	23.0	15.3
Atherosclerosis	440	2477	9.5	2.9	7014	59.2	39.1	6940	57.3	37.7	6707	54.4	35.7
Other diseases of circulatory system	441-459	3380	13.0	4.7	1365	11.5	7.0	1293	10.7	6.8	1173	9.5	5.8
Pneumonia	480-486	6449	24.7	8.5	500	4.2	2.8	471	3.9	2.6	391	3.2	2.2
Influenza	487	248	1.0	0.3	4516	38.1	31.5	4942	40.8	33.1	5186	42.1	33.5
Bronchitis,emphysema and asthma	490-493	2313	8.9	3.4	252	2.1	1.4	187	1.5	1.0	138	1.1	0.7
Other diseases of respiratory system	460-478 494-519	6969	26.7	9.6	1652	13.9	9.3	1973	16.3	10.8	1820	14.8	9.8
Ulcer of stomach and duodenum	531-533	707	2.7	1.0	1441	12.2	9.1	975	8.0	6.0	822	6.7	4.9
Appendicitis	540-543	46	0.2	0.1	284	2.4	1.7	260	2.1	1.5	224	1.8	1.3
Intestinal obstruction and hernia	550-553 560	641	2.5	0.9	59	0.5	0.4	53	0.4	0.4	75	0.6	0.5
Chronic liver disease and cirrhosis	571	2067	7.9	3.9	285	2.4	1.7	362	3.0	2.1	346	2.8	2.0
Other diseases of digestive system	rest of 520-579	3489	13.4	5.0	4312	36.4	28.3	3646	30.1	23.1	3234	26.2	20.1
Nephritis, nephrotic syndrome and nephrosis	580-589	1972	7.6	2.7	1565	13.2	9.5	1538	12.7	9.0	1494	12.1	8.5
Hyperplasia of prostate	600	71	0.3	0.1	788	6.5	4.7	847	7.0	5.0	699	5.7	4.2
Other diseases of genitourinary system	590-599	795	3.0	1.0	153	1.3	0.8	161	1.5	0.9	172	1.4	0.9
Abortion	630-639	1	0.0	0.0	754	6.4	4.3	822	6.8	4.5	739	6.0	4.0
Direct obstetric causes	640-646 651-676	17	0.1	0.1	38	0.3	0.3	33	0.3	0.2	47	0.4	0.3
Other obstetric causes	647,648,650	-	-	-	49	0.4	0.4	84	0.7	0.6	77	0.6	0.5
Congenital anomalies	740-759	1364	5.2	9.5	7	0.1	0.1	14	0.1	0.1	5	0.0	0.0
Birth trauma	767	29	0.1	0.2	1163	9.8	14.0	1149	9.5	13.4	1222	9.9	13.6
Other conditions originating in the perinatal period	760-766 768-779	1034	4.0	8.7	102	0.9	1.3	82	0.7	1.0	58	0.5	0.7
Symptoms and ill-defined conditions	780-799	3122	12.0	8.8	1738	14.7	21.8	1639	13.5	19.7	1735	14.1	20.1
All other diseases	680-739	879	3.4	1.3	6326	53.4	37.8	5928	48.9	34.5	5998	48.7	33.6
Motor vehicle traffic accidents	E810-E819	3971	15.2	13.2	343	2.9	2.2	268	2.4	1.8	342	2.8	2.1
Accidental falls	E880-E888	2100	8.0	3.1	872	7.4	6.4	779	6.4	5.8	796	6.5	5.7
All other accidents rest of	E800-E949	3081	11.8	9.5	593	5.0	3.9	513	4.2	3.3	381	3.1	2.2
Suicide	E950-E959	3510	13.5	10.0	2362	19.9	19.0	2022	16.7	16.4	2210	17.9	17.7
Homicide	E960-E969	487	1.9	1.6	736	6.2	5.2	683	5.6	4.7	655	5.3	4.4
Injury unknown whether accidentally or purposely inflicted	E980-E989	470	1.8	1.3	387	3.3	2.9	387	3.2	2.7	376	3.1	2.6
Injury from operations of war and legal intervention	E970-E978,E990-E999	9	0.0	0.0	4270	36.0	32.0	4625	38.2	33.9	4379	35.5	31.2

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		CHILE 1987			COLOMBIA 1984			COSTA RICA 1984			COSTA RICA 1985		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		70559	562.8	428.4	137189	488.0	488.9	9931	391.9	385.5	10493	397.2	386.0
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	24	0.2	0.2	83	0.3	0.3	-	-	-	-	-	-
Paratyphoid fever and food poisoning	002.1-002.9, 003,005	11	0.1	0.1	21	0.1	0.1	-	-	-	1	0.0	0.0
Shigellosis and amebiasis	004,006	14	0.1	0.1	159	0.6	0.6	2	0.1	0.1	2	0.1	0.1
Other intestinal infections	007-009	435	3.5	3.4	4064	14.5	16.6	162	6.4	6.6	148	5.6	5.6
Tuberculosis of respiratory system	010-012	573	4.6	3.4	1458	5.2	5.0	68	2.7	2.6	82	3.1	3.1
Other tuberculosis	013-018	75	0.6	0.5	311	1.1	1.1	15	0.6	0.6	6	0.2	0.2
Plague	020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	032	3	0.0	0.0	15	0.1	0.1	-	-	-	-	-	-
Whooping cough	033	3	0.0	0.0	139	0.5	0.6	4	0.2	0.2	1	0.0	0.0
Meningococcal infection	036	19	0.2	0.2	23	0.1	0.1	2	0.1	0.1	2	0.1	0.1
Tetanus	037	4	0.0	0.0	159	0.6	0.6	3	0.1	0.1	2	0.1	0.1
Septicemia	038	765	6.1	5.1	948	3.4	3.5	47	1.9	1.9	35	1.3	1.3
Acute poliomyelitis	045	-	-	-	29	0.1	0.1	-	-	-	-	-	-
Smallpox	050	-	-	-	-	-	-	-	-	-	-	-	-
Measles	055	1	0.0	0.0	183	0.7	0.8	-	-	-	-	-	-
Yellow fever	060	-	-	-	11	0.0	0.0	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	65	0.5	0.5	112	0.4	0.4	22	0.9	0.9	16	0.6	0.6
Rabies	071	-	-	-	8	0.0	0.0	-	-	-	-	-	-
Malaria	084	-	-	-	317	1.1	1.1	1	0.0	0.0	-	-	-
Trypanosomiasis	086	45	0.4	0.2	15	0.1	0.1	-	-	-	-	-	-
Syphilis	090-097	6	0.0	0.0	49	0.2	0.2	6	0.2	0.2	5	0.2	0.2
All other infectious and parasitic diseases	rest of 001-139	358	2.9	2.3	800	2.8	3.1	37	1.5	1.5	53	2.0	2.0
Malignant neoplasm of stomach	151	2328	18.6	12.6	3410	12.1	11.8	506	20.0	19.3	556	21.8	20.4
Malignant neoplasm of colon	153	495	3.9	2.6	491	1.7	1.7	62	2.4	2.4	80	3.0	2.9
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	229	1.8	1.3	262	0.9	0.9	31	1.2	1.2	41	1.6	1.5
Malignant neoplasm of trachea, bronchus and lung	162	1266	10.1	7.0	1483	5.3	5.1	167	6.6	6.3	169	6.4	6.2
Malignant neoplasm of female breast	174	742	5.9	4.3	734	2.6	2.6	107	4.2	4.3	111	4.2	4.2
Malignant neoplasm of cervix uteri	180	766	6.1	4.6	975	3.5	3.4	95	3.7	3.7	99	3.7	3.7
Leukemia	204-208	426	3.4	3.0	799	2.8	2.8	116	4.6	4.5	109	4.1	4.0
Malignant neoplasm of other and unspecified sites	rest of 140-208	6829	54.5	37.8	8806	31.3	30.7	877	34.6	33.6	928	35.1	34.1
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	415	3.3	2.7	607	2.2	2.1	23	0.9	0.9	17	0.6	0.6
Diabetes mellitus	250	1201	9.6	6.4	2197	7.8	7.7	157	6.2	6.0	181	6.9	6.6
Kwashiorkor	260	1	0.0	0.0	13	0.0	0.0	-	-	-	-	-	-
Nutritional marasmus	261	46	0.4	0.3	15	0.1	0.0	1	0.0	0.0	3	0.1	0.1
Other protein-calorie malnutrition	262,263	91	0.7	0.6	1896	6.7	7.4	46	1.8	1.8	44	1.7	1.6
Avitaminosis	264-269	7	0.1	0.0	59	0.2	0.2	2	0.1	0.1	1	0.0	0.0
Other endocrine and metabolic diseases	rest of 240-279	199	1.6	1.3	1017	3.6	3.9	58	2.3	2.3	41	1.6	1.5
Anemias	280-285	150	1.2	0.9	835	3.0	3.0	38	1.5	1.4	31	1.2	1.2
Other diseases of blood and blood-forming organs	286-289	57	0.5	0.4	122	0.4	0.5	15	0.6	0.6	10	0.4	0.4
Mental disorders	290-319	662	5.3	3.4	122	0.4	0.4	42	1.7	1.6	49	1.9	1.8
Meningitis	320-322	210	1.7	2.1	774	2.8	3.0	59	2.3	2.4	34	1.3	1.3
Other diseases of nervous system and sense organs	323-389	785	6.3	5.5	1676	6.0	6.0	164	6.5	6.5	169	6.4	6.3
Acute rheumatic fever	390-392	10	0.1	0.1	71	0.3	0.2	12	0.5	0.5	9	0.3	0.3
Chronic rheumatic heart disease	393-398	370	3.0	2.3	352	1.3	1.2	30	1.2	1.1	36	1.4	1.3
Hypertensive disease	401-405	1107	8.8	5.7	3607	12.8	12.9	116	4.6	4.4	116	4.4	4.2
Acute myocardial infarction	410	4571	36.5	23.8	11677	41.5	41.0	812	32.0	31.0	922	34.9	33.7
Other ischemic heart disease	411-414	2537	20.2	12.5	1971	7.0	7.1	607	24.0	23.2	658	24.9	24.2
Diseases of pulmonary circulation and other heart disease	415-429	2783	22.2	14.8	10538	37.5	37.6	430	17.0	16.3	384	14.5	14.1
Cerebrovascular disease	430-438	6526	52.1	34.3	10776	38.3	38.2	720	28.4	27.4	749	28.4	27.4
Atherosclerosis	440	1030	8.2	5.0	1034	3.7	3.8	51	2.0	2.0	44	1.7	1.6
Other diseases of circulatory system	441-459	424	3.4	2.3	1507	5.4	5.3	73	2.9	2.8	54	2.0	2.0
Pneumonia	480-486	5095	40.6	33.0	4644	16.5	18.0	341	13.5	13.6	333	12.6	12.4
Influenza	487	115	0.9	0.6	302	1.1	1.2	11	0.4	0.4	19	0.7	0.7
Bronchitis,emphysema and asthma	490-493	1746	13.9	9.1	2649	9.4	10.0	177	7.0	6.9	220	8.3	8.1
Other diseases of respiratory system	460-478, 494-519	946	7.5	5.4	3288	11.7	11.8	407	16.1	15.6	505	19.1	18.6
Ulcer of stomach and *duodenum*	531-533	230	1.8	1.2	1140	4.1	4.0	54	2.1	2.1	41	1.6	1.5
Appendicitis	540-543	55	0.4	0.4	147	0.5	0.5	9	0.4	0.3	7	0.3	0.3
Intestinal obstruction and hernia	550-553, 560	114	0.9	0.7	583	2.1	2.1	22	0.9	0.9	28	1.1	1.0
Chronic liver disease and cirrhosis	571	2371	18.9	14.1	849	3.0	2.9	161	6.4	6.3	179	6.8	6.7
Other diseases of digestive system	rest of 520-579	1799	14.3	10.1	2326	8.3	8.2	165	6.5	6.4	141	5.3	5.2
Nephritis, nephrotic syndrome and nephrosis	580-589	751	6.0	4.3	1713	6.1	6.0	129	5.1	5.0	136	5.1	5.0
Hyperplasia of prostate	600	153	1.2	0.8	144	0.5	0.5	17	0.7	0.7	13	0.5	0.5
Other diseases of genitourinary system	590-599, 601-629	828	6.6	4.4	673	2.4	2.4	73	2.9	2.8	53	2.0	1.9
Abortion	630-639	47	0.4	0.3	148	0.5	0.5	3	0.1	0.1	5	0.2	0.2
Direct obstetric causes	640-646, 651-676	81	0.6	0.5	489	1.7	1.6	15	0.6	0.6	24	0.9	0.8
Other obstetric causes	647,648,650	7	0.1	0.0	5	0.0	0.0	-	-	-	-	-	-
Congenital anomalies	740-759	1266	10.1	14.3	1736	6.2	6.8	367	14.5	15.3	386	14.6	14.7
Birth trauma	767	58	0.5	0.7	120	0.4	0.5	31	1.2	1.3	20	0.8	0.7
Other conditions originating in the perinatal period	760-766, 768-779	1721	13.7	20.4	6228	22.2	23.7	672	26.5	27.9	739	28.0	27.7
Symptoms and ill-defined conditions	780-799	5733	45.7	31.4	7889	28.1	29.0	359	14.2	14.1	384	14.5	14.1
All other diseases	680-739	375	3.0	2.2	931	3.3	3.3	93	3.7	3.6	114	4.3	4.2
Motor vehicle traffic accidents	E810-E819	879	7.0	6.2	4613	16.4	15.6	311	12.3	11.8	365	13.8	13.1
Accidental falls	E880-E888	353	2.8	2.0	1194	4.2	4.2	141	5.6	5.5	182	6.9	6.6
All other accidents	rest of E800-E949	1806	14.4	15.1	7321	26.0	25.1	352	13.9	13.5	317	12.0	11.7
Suicide	E950-E959	693	5.5	4.6	1071	3.8	3.4	113	4.5	4.1	129	4.9	4.5
Homicide	E960-E969	342	2.7	2.3	9360	33.3	29.7	114	4.5	4.2	127	4.8	4.4
Injury unknown whether accidentally or purposely inflicted	E980-E989	4331	34.5	30.8	893	3.2	3.0	6	0.2	0.2	28	1.1	1.0
Injury from operations of war and legal intervention	E970-E978,E990-E999	-	-	-	3	0.0	0.0	2	0.1	0.1	-	-	-

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	COSTA RICA									CUBA		
	1986			1987			1988			1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	10449	384.7	376.1	10687	382.9	376.5	10944	381.8	374.6	59801	602.6	374.7
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	-	-	-	-	-	-	2	0.0	0.0
Paratyphoid fever and food poisoning 002.1-002.9,003,005	-	-	-	-	-	-	-	-	-	1	0.0	0.0
Shigellosis and amebiasis 004,006	2	0.1	0.0	-	-	-	-	-	-	12	0.1	0.1
Other intestinal infections 007-009	164	6.0	6.2	162	5.8	6.1	132	4.6	4.8	287	2.9	3.2
Tuberculosis of respiratory system 010-012	73	2.7	2.6	68	2.4	2.3	77	2.7	2.6	69	0.7	0.4
Other tuberculosis 013-018	13	0.5	0.5	17	0.6	0.6	22	0.8	0.7	5	0.1	0.0
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 033	4	0.1	0.2	4	0.1	0.2	2	0.1	0.1	1	0.0	0.0
Meningococcal infection 036	2	0.1	0.1	1	0.0	0.0	-	-	-	216	2.2	3.0
Tetanus 037	-	-	-	3	0.1	0.1	5	0.2	0.2	5	0.1	0.0
Septicemia 038	26	1.0	1.0	40	1.4	1.5	40	1.4	1.3	188	1.9	2.4
Acute poliomyelitis 045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	11	0.4	0.4	5	0.2	0.2	-	-	-	1	0.0	0.0
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	18	0.7	0.7	13	0.5	0.5	19	0.7	0.7	17	0.2	0.2
Rabies 071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 084	-	-	-	1	0.0	0.0	-	-	-	1	0.0	0.0
Trypanosomiasis 086	1	0.0	0.0	-	-	-	-	-	-	-	-	-
Syphilis 090-097	6	0.2	0.2	4	0.1	0.2	3	0.1	0.1	6	0.1	0.1
All other infectious and parasitic diseases rest of 001-139	51	1.9	1.8	40	1.4	1.5	37	1.3	1.3	131	1.3	1.2
Malignant neoplasm of stomach 151	514	18.9	18.3	526	18.8	18.2	598	20.9	20.3	673	6.8	3.5
Malignant neoplasm of colon 153	73	2.7	2.6	76	2.7	2.6	87	3.0	3.0	819	8.3	4.4
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	49	1.8	1.8	34	1.2	1.2	30	1.0	1.0	263	2.7	1.4
Malignant neoplasm of trachea, bronchus and lung 162	147	5.4	5.2	178	6.4	6.2	186	6.5	6.2	2828	28.5	14.9
Malignant neoplasm of female breast 174	95	3.5	3.5	121	4.3	4.3	128	4.5	4.5	769	7.7	4.7
Malignant neoplasm of cervix uteri 180	124	4.6	4.6	119	4.3	4.2	101	3.5	3.5	224	2.3	1.4
Leukemia 204-208	102	3.8	3.6	134	4.8	4.8	121	4.2	4.1	406	4.1	3.1
Malignant neoplasm of other and unspecified sites rest of 140-208	1008	37.1	35.8	1055	37.8	36.4	1077	37.6	36.4	5771	58.2	32.2
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	25	0.9	0.9	12	0.4	0.4	18	0.6	0.6	256	2.6	1.9
Diabetes mellitus 250	178	6.6	6.4	248	8.9	8.7	263	9.2	9.0	1388	14.0	7.5
Kwashiorkor 260	-	-	-	1	0.0	0.0	1	0.0	0.0	-	-	-
Nutritional marasmus 261	-	-	-	-	-	-	-	-	-	-	-	-
Other protein-calorie malnutrition 262,263	42	1.5	1.5	49	1.8	1.8	48	1.7	1.7	25	0.3	0.2
Avitaminosis 264-269	-	-	-	1	0.0	0.0	1	0.0	0.0	1	0.0	0.0
Other endocrine and metabolic diseases rest of 240-279	51	1.9	1.8	69	2.5	2.5	87	3.0	3.1	117	1.2	1.1
Anemias 280-285	36	1.3	1.3	49	1.8	1.8	32	1.1	1.1	164	1.7	1.2
Other diseases of blood and blood-forming organs 286-289	13	0.5	0.5	7	0.3	0.2	17	0.6	0.6	71	0.7	0.6
Mental disorders 290-319	49	1.8	1.8	38	1.4	1.3	45	1.6	1.4	212	2.1	1.1
Meningitis 320-322	54	2.0	2.1	39	1.4	1.4	29	1.0	1.1	208	2.1	2.8
Other diseases of nervous system and sense organs 323-389	191	7.0	7.0	208	7.5	7.3	173	6.0	6.0	704	7.1	6.4
Acute rheumatic fever 390-392	4	0.1	0.2	4	0.1	0.1	5	0.2	0.2	14	0.1	0.2
Chronic rheumatic heart disease 393-398	45	1.7	1.6	46	1.6	1.7	29	1.0	1.0	224	2.3	1.8
Hypertensive disease 401-405	135	5.0	4.8	182	6.5	6.3	201	7.0	6.6	814	8.2	4.6
Acute myocardial infarction 410	832	30.6	29.4	808	29.0	27.9	872	30.4	29.3	9238	93.1	48.0
Other ischemic heart disease 411-414	651	24.0	23.1	633	22.7	21.8	720	25.1	24.1	4749	47.9	21.5
Diseases of pulmonary circulation and other heart disease 415-429	370	13.6	13.2	362	13.0	12.6	405	14.1	13.6	2531	25.5	13.5
Cerebrovascular disease 430-438	756	27.8	26.8	760	27.2	26.3	806	28.1	27.3	6141	61.9	31.9
Atherosclerosis 440	57	2.1	2.0	37	1.3	1.3	61	2.1	2.1	1856	18.7	7.9
Other diseases of circulatory system 441-459	61	2.2	2.2	59	2.1	2.1	63	2.2	2.1	462	4.7	2.4
Pneumonia 480-486	366	13.5	13.5	344	12.3	12.7	353	12.3	12.7	3666	36.9	20.5
Influenza 487	11	0.4	0.4	7	0.3	0.3	11	0.4	0.4	17	0.2	0.1
Bronchitis,emphysema and asthma 490-493	210	7.7	7.4	240	8.6	8.4	233	8.1	7.9	803	8.1	4.8
Other diseases of respiratory system 460-478,494-519	482	17.7	17.0	500	17.9	17.3	530	18.5	18.0	1165	11.7	6.0
Ulcer of stomach and duodenum 531-533	36	1.3	1.3	39	1.4	1.3	40	1.4	1.3	352	3.5	1.8
Appendicitis 540-543	14	0.5	0.5	7	0.3	0.3	16	0.6	0.6	86	0.9	0.6
Intestinal obstruction and hernia 550-553,560	42	1.5	1.5	36	1.3	1.3	40	1.4	1.3	335	3.4	1.9
Chronic liver disease and cirrosis 571	190	7.0	6.9	250	9.0	8.9	221	7.7	7.7	618	6.2	3.6
Other diseases of digestive system rest of 520-579	174	6.4	6.2	178	6.4	6.2	217	7.6	7.3	722	7.3	4.2
Nephritis, nephrotic syndrome and nephrosis 580-589	126	4.6	4.5	124	4.4	4.3	124	4.3	4.2	606	6.1	3.8
Hyperplasia of prostate 600	20	0.7	0.7	21	0.8	0.7	23	0.8	0.7	112	1.1	0.5
Other diseases of genitourinary system 590-599,601-629	60	2.2	2.1	54	1.9	1.9	55	1.9	1.9	255	2.6	1.5
Abortion 630-639	9	0.3	0.3	2	0.1	0.1	1	0.0	0.0	12	0.1	0.1
Direct obstetric causes 640-646,651-676	21	0.8	0.7	14	0.5	0.5	14	0.5	0.4	40	0.4	0.4
Other obstetric causes 647,648,650	-	-	-	-	-	-	-	-	-	25	0.3	0.2
Congenital anomalies 740-759	462	17.0	17.7	424	15.2	16.4	395	13.8	15.0	833	8.4	14.1
Birth trauma 767	29	1.1	1.1	12	0.4	0.5	22	0.8	0.9	83	0.8	1.6
Other conditions originating in the perinatal period 760-766,768-779	640	23.6	24.3	624	22.4	23.9	529	18.5	20.2	1051	10.6	19.9
Symptoms and ill-defined conditions 780-799	322	11.9	11.5	285	10.2	10.1	251	8.8	8.6	166	1.7	1.1
All other diseases 680-739	113	4.2	4.1	107	3.8	3.7	109	3.8	3.6	232	2.3	1.6
Motor vehicle traffic accidents E810-E819	344	12.7	12.2	391	14.0	13.4	352	12.3	11.9	A) ...	...	...
Accidental falls E880-E888	131	4.8	4.7	163	5.8	5.7	183	6.4	6.1	A) ...	...	...
All other accidents rest of E800-E949	349	12.8	12.5	371	13.3	12.9	367	12.8	12.3	1)6752	68.0	55.9
Suicide E950-E959	131	4.8	4.6	120	4.3	4.0	143	5.0	4.5	A) ...	...	...
Homicide E960-E969	109	4.0	3.8	131	4.7	4.4	115	4.0	3.7	A) ...	...	...
Injury unknown whether accidentally or purposely inflicted E980-E989	25	0.9	0.9	30	1.1	1.0	58	2.0	1.9	A) ...	...	...
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	-	-	-	1	0.0	0.0	A) ...	...	...

1) CATEGORY INCLUDES OTHER CAUSES OF DEATH.
A) DATA INCLUDED IN ALL OTHER ACCIDENTS.

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		CUBA											
		1985			1986			1987			1988		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		64430	647.8	401.0	63145	631.1	385.7	65079	645.9	390.7	67944	669.1	399.0
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	-	-	-	1	0.0	0.0	2	0.0	0.0	-	-	-
Paratyphoid fever and food poisoning	002.1-002.9, 003,005	5	0.1	0.1	2	0.0	0.0	5	0.0	0.1	6	0.1	0.1
Shigellosis and amebiasis	004,006	14	0.1	0.1	15	0.1	0.1	34	0.3	0.3	31	0.3	0.2
Other intestinal infections	007-009	461	4.6	4.9	295	2.9	3.0	357	3.5	3.4	324	3.2	2.8
Tuberculosis of respiratory system	010-012	62	0.6	0.3	54	0.5	0.3	61	0.6	0.4	43	0.4	0.2
Other tuberculosis	013-018	4	0.0	0.0	10	0.1	0.1	6	0.1	0.0	10	0.1	0.1
Plague	020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough	033	2	0.0	0.0	1	0.0	0.0	2	0.0	0.0	-	-	-
Meningococcal infection	036	211	2.1	2.8	198	2.0	2.7	157	1.6	2.1	169	1.7	2.3
Tetanus	037	5	0.1	0.0	9	0.1	0.1	2	0.0	0.0	4	0.0	0.0
Septicemia	038	191	1.9	2.4	111	1.1	1.2	124	1.2	1.4	115	1.1	1.3
Acute poliomyelitis	045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox	050	-	-	-	-	-	-	-	-	-	-	-	-
Measles	055	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever	060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	32	0.3	0.3	30	0.3	0.3	25	0.2	0.2	25	0.2	0.2
Rabies	071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria	084	2	0.0	0.0	-	-	-	2	0.0	0.0	-	-	-
Trypanosomiasis	086	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis	090-097	5	0.1	0.0	1	0.0	0.0	1	0.0	0.0	2	0.0	0.0
All other infectious and parasitic diseases	rest of 001-139	150	1.5	1.4	153	1.5	1.2	152	1.5	1.3	192	1.9	1.6
Malignant neoplasm of stomach	151	628	6.3	3.3	615	6.1	3.2	618	6.1	3.2	690	6.8	3.6
Malignant neoplasm of colon	153	857	8.6	4.4	855	8.5	4.4	906	9.0	4.6	956	9.4	4.9
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	239	2.4	1.3	243	2.4	1.3	227	2.3	1.2	283	2.8	1.5
Malignant neoplasm of trachea, bronchus and lung	162	2799	28.1	14.8	2922	29.2	15.4	2960	29.4	15.4	3135	30.9	16.2
Malignant neoplasm of female breast	174	715	7.2	4.4	749	7.5	4.5	816	8.1	4.9	824	8.1	4.9
Malignant neoplasm of cervix uteri	180	237	2.4	1.6	324	3.2	2.1	319	3.2	2.1	380	3.7	2.4
Leukemia	204-208	459	4.6	3.4	469	4.7	3.6	472	4.7	3.5	435	4.3	3.0
Malignant neoplasm of other and unspecified sites	rest of 140-208	5866	59.0	32.8	5873	58.7	32.0	5997	59.5	32.7	6274	61.8	33.8
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	256	2.6	1.9	245	2.4	1.7	259	2.6	1.8	288	2.8	1.9
Diabetes mellitus	250	1577	15.9	8.4	1649	16.5	8.8	1748	17.3	9.1	2166	21.3	11.2
Kwashiorkor	260	7	0.1	0.1	1	0.0	0.0	1	0.0	0.0	1	0.0	0.0
Nutritional marasmus	261	-	-	-	-	-	-	2	0.0	0.0	1	0.0	0.0
Other protein-calorie malnutrition	262,263	22	0.2	0.2	22	0.2	0.3	20	0.2	0.2	21	0.2	0.1
Avitaminosis	264-269	3	0.0	0.0	-	-	-	3	0.0	0.0	1	0.0	0.0
Other endocrine and metabolic diseases	rest of 240-279	147	1.5	1.3	109	1.1	1.1	157	1.6	1.3	157	1.5	1.3
Anemias	280-285	196	2.0	1.4	188	1.9	1.3	187	1.9	1.2	175	1.7	1.2
Other diseases of blood and blood-forming organs	286-289	41	0.4	0.3	65	0.6	0.4	47	0.5	0.3	66	0.7	0.5
Mental disorders	290-319	276	2.8	1.5	335	3.3	1.7	439	4.4	2.2	674	6.6	3.3
Meningitis	320-322	226	2.3	2.9	189	1.9	2.5	184	1.8	2.2	207	2.0	2.3
Other diseases of nervous system and sense organs	323-389	813	8.2	7.4	746	7.5	6.5	782	7.8	6.5	777	7.7	6.1
Acute rheumatic fever	390-392	12	0.1	0.1	24	0.2	0.2	25	0.2	0.2	27	0.3	0.2
Chronic rheumatic heart disease	393-398	257	2.5	2.1	243	2.4	2.0	199	2.0	1.6	219	2.2	1.7
Hypertensive disease	401-405	772	7.8	4.3	804	8.0	4.6	812	8.1	4.4	835	8.2	4.5
Acute myocardial infarction	410	9761	98.1	50.7	9534	95.3	48.9	9848	97.7	49.9	11580	114.0	57.4
Other ischemic heart disease	411-414	5547	55.8	25.1	5616	56.1	25.0	5779	57.4	25.6	5410	53.3	23.9
Diseases of pulmonary circulation and other heart disease	415-429	2760	27.7	15.0	2539	25.4	13.8	2445	24.3	13.0	1908	18.8	10.0
Cerebrovascular disease	430-438	6258	62.9	32.1	6436	64.3	32.7	6653	66.0	33.8	6513	64.1	32.5
Atherosclerosis	440	2157	21.7	9.2	1867	18.7	8.0	1959	19.4	8.2	2466	24.3	10.2
Other diseases of circulatory system	441-459	525	5.3	2.7	523	5.2	2.6	583	5.8	3.0	635	6.3	3.1
Pneumonia	480-486	4456	44.8	25.5	3917	39.1	21.2	4030	40.0	21.3	3247	32.0	17.5
Influenza	487	26	0.3	0.1	9	0.1	0.0	14	0.1	0.1	20	0.2	0.1
Bronchitis,emphysema and asthma	490-493	836	8.4	4.9	744	7.4	4.5	792	7.9	4.8	1229	12.1	6.8
Other diseases of respiratory system	460-478, 494-519	1328	13.4	6.9	1235	12.3	6.4	1355	13.4	6.6	1404	13.8	7.1
Ulcer of stomach and duodenum	531-533	317	3.2	1.6	332	3.3	1.8	74	0.7	0.4	332	3.3	1.7
Appendicitis	540-543	99	1.0	0.7	105	1.0	0.7	100	1.0	0.6	84	0.8	0.5
Intestinal obstruction and hernia	550-553, 560	412	4.1	2.3	416	4.2	2.3	415	4.1	2.2	411	4.0	2.3
Chronic liver disease and cirrhosis	571	664	6.7	3.9	710	7.1	4.0	39	0.4	0.3	771	7.6	4.5
Other diseases of digestive system	rest of 520-579	818	8.2	4.8	730	7.3	4.3	1745	17.3	9.8	730	7.2	4.0
Nephritis, nephrotic syndrome and nephrosis	580-589	666	6.7	4.1	732	7.3	4.5	638	6.3	3.7	472	4.6	2.7
Hyperplasia of prostate	600	117	1.2	0.5	115	1.1	0.5	124	1.2	0.5	128	1.3	0.6
Other diseases of genitourinary system	590-599, 601-629	249	2.5	1.4	254	2.5	1.6	231	2.3	1.3	267	2.6	1.5
Abortion	630-639	12	0.1	0.1	19	0.2	0.2	16	0.2	0.1	16	0.2	0.1
Direct obstetric causes	640-648, 651-676	44	0.4	0.4	43	0.4	0.4	45	0.4	0.4	33	0.3	0.3
Other obstetric causes	647,648,650	28	0.3	0.2	25	0.2	0.2	27	0.3	0.3	24	0.2	0.2
Congenital anomalies	740-759	897	9.0	14.1	827	8.3	13.8	857	8.5	13.4	947	9.3	13.7
Birth trauma	767	97	1.0	1.7	70	0.7	1.3	71	0.7	1.2	57	0.6	1.0
Other conditions originating in the perinatal period	760-766, 768-779	1166	11.7	20.2	912	9.1	17.3	1038	10.3	18.3	916	9.0	15.4
Symptoms and ill-defined conditions	780-799	152	1.5	1.2	118	1.2	0.9	146	1.4	1.1	151	1.5	1.2
All other diseases	680-739	281	2.8	2.0	299	3.0	2.0	333	3.3	2.2	402	4.0	2.3
Motor vehicle traffic accidents	E810-E819	A) ...	...	...	A) ...	...	...	A) ...	...	...	A) ...	...	...
Accidental falls	E880-E888	A) ...	...	...	A) ...	...	...	A) ...	...	...	A) ...	...	...
All other accidents	rest of E800-E949	1)7208	72.5	59.1	1)7470	74.7	60.4	1)7612	75.6	60.5	1)8278	81.5	64.8
Suicide	E950-E959	A) ...	...	...	A) ...	...	...	A) ...	...	...	A) ...	...	...
Homicide	E960-E969	A) ...	...	...	A) ...	...	...	A) ...	...	...	A) ...	...	...
Injury unknown whether accidentally or purposely inflicted	E980-E989	A) ...	...	...	A) ...	...	...	A) ...	...	...	A) ...	...	...
Injury from operations of war and legal intervention	E970-E978,E990-E999	A) ...	...	...	A) ...	...	...	A) ...	...	...	A) ...	...	...

1) CATEGORY INCLUDES OTHER CAUSES OF DEATH.
A) DATA INCLUDED IN ALL OTHER ACCIDENTS.

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	DOMINICA 1985			DOMINICAN REPUBLIC 1982			1983			1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	466	612.9	378.1	26589	456.6	494.2	26542	445.3	489.9	28236	462.8	520.3
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	12	0.2	0.2	11	0.2	0.2	15	0.2	0.3
Paratyphoid fever and food poisoning 002.1-002.9, 003,005	-	-	-	47	0.8	0.8	34	0.6	0.6	53	0.9	0.9
Shigellosis and amebiasis 004,006	-	-	-	6	0.1	0.1	7	0.1	0.1	24	0.4	0.4
Other intestinal infections 007-009	2	2.6	3.7	1355	23.3	22.5	1318	22.1	24.0	1939	31.8	36.5
Tuberculosis of respiratory system 010-012	3	3.9	4.5	438	7.5	8.3	472	7.9	8.5	534	8.8	9.3
Other tuberculosis 013-018	-	-	-	42	0.7	0.7	56	0.9	1.0	44	0.7	0.8
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	16	0.3	0.3	18	0.3	0.3	35	0.6	0.6
Whooping cough 033	-	-	-	3	0.1	0.0	3	0.1	0.1	-	-	-
Meningococcal infection 036	-	-	-	25	0.4	0.5	14	0.2	0.2	19	0.3	0.3
Tetanus 037	-	-	-	54	0.9	1.0	44	0.7	0.8	43	0.7	0.8
Septicemia 038	4	5.3	4.5	392	6.7	6.7	454	7.6	8.2	753	12.3	14.0
Acute poliomyelitis 045	-	-	-	24	0.4	0.4	6	0.1	0.1	7	0.1	0.1
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	-	-	-	81	1.4	1.4	56	0.9	1.0	121	2.0	2.2
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	3	0.0	0.1
Viral hepatitis 070	-	-	-	61	1.0	1.1	50	0.8	0.9	39	0.6	0.7
Rabies 071	-	-	-	2	0.0	0.0	3	0.1	0.1	8	0.1	0.2
Malaria 084	-	-	-	12	0.2	0.2	10	0.2	0.2	17	0.3	0.3
Trypanosomiasis 086	-	-	-	-	-	-	-	-	-	1	0.0	0.0
Syphilis 090-097	-	-	-	130	2.2	2.1	106	1.8	1.9	97	1.6	1.9
All other infectious and parasitic diseases rest of 001-139	1	1.3	1.9	84	1.4	1.5	97	1.6	1.8	79	1.3	1.4
Malignant neoplasm of stomach 151	10	13.2	7.2	104	1.8	2.2	102	1.7	2.0	148	2.4	2.8
Malignant neoplasm of colon 153	3	3.9	2.4	73	1.3	1.5	84	1.4	1.6	90	1.5	1.7
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	2	2.6	1.2	23	0.4	0.5	24	0.4	0.5	16	0.3	0.3
Malignant neoplasm of trachea, bronchus and lung 162	3	3.9	3.0	136	2.3	2.8	160	2.7	3.1	163	2.7	3.1
Malignant neoplasm of female breast 174	4	5.3	4.7	81	1.4	1.7	100	1.7	1.9	89	1.5	1.7
Malignant neoplasm of cervix uteri 180	6	7.9	6.7	63	1.1	1.3	49	0.8	0.9	103	1.7	2.0
Leukemia 204-208	-	-	-	73	1.3	1.3	98	1.6	1.8	103	1.7	1.8
Malignant neoplasm of other and unspecified sites rest of 140-208	27	35.5	25.9	1037	17.8	21.0	1092	18.3	20.8	1131	18.5	21.1
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	1	1.3	1.2	113	1.9	2.2	85	1.4	1.6	109	1.8	2.0
Diabetes mellitus 250	14	18.4	10.5	443	7.6	9.0	492	8.3	9.4	540	8.9	10.0
Kwashiorkor 260	-	-	-	6	0.1	0.1	7	0.1	0.1	11	0.2	0.2
Nutritional marasmus 261	-	-	-	5	0.1	0.1	7	0.1	0.1	15	0.2	0.3
Other protein-calorie malnutrition 262,263	-	-	-	707	12.1	12.3	766	12.9	14.0	591	9.7	10.9
Avitaminosis 264-269	1	1.3	0.6	5	0.1	0.1	5	0.1	0.1	7	0.1	0.1
Other endocrine and metabolic rest of diseases 240-279	-	-	-	439	7.5	7.5	500	8.4	9.1	259	4.2	4.8
Anemias 280-285	7	9.2	7.0	277	4.8	5.0	313	5.3	5.7	291	4.8	5.1
Other diseases of blood and blood-forming organs 286-289	-	-	-	97	1.7	1.6	135	2.3	2.4	54	0.9	1.0
Mental disorders 290-319	5	6.6	5.7	68	1.2	1.3	72	1.2	1.4	83	1.4	1.5
Meningitis 320-322	1	1.3	0.6	258	4.4	4.3	250	4.2	4.5	306	5.0	5.7
Other diseases of nervous system and sense organs 323-389	12	15.8	13.4	372	6.4	6.9	436	7.3	7.8	399	6.5	7.0
Acute rheumatic fever 390-392	-	-	-	15	0.3	0.3	9	0.2	0.2	10	0.2	0.2
Chronic rheumatic heart disease 393-398	-	-	-	18	0.3	0.4	30	0.5	0.5	39	0.6	0.6
Hypertensive disease 401-405	55	72.3	45.2	423	7.3	8.6	358	6.0	6.9	575	9.4	10.8
Acute myocardial infarction 410	11	14.5	9.0	1118	19.2	23.1	1095	18.4	21.0	1588	26.0	29.8
Other ischemic heart disease 411-414	7	9.2	5.5	135	2.3	2.7	123	2.1	2.4	103	1.7	1.9
Diseases of pulmonary circulation and other heart disease 415-429	34	44.7	23.4	1871	32.1	37.0	2244	37.6	42.2	2159	35.4	39.8
Cerebrovascular disease 430-438	32	42.1	24.7	1236	21.2	25.3	1352	22.7	25.9	1622	26.6	30.4
Atherosclerosis 440	18	23.7	11.9	140	2.4	2.8	219	3.7	4.2	110	1.8	2.0
Other diseases of circulatory system 441-459	5	6.6	3.1	115	2.0	2.3	120	2.0	2.2	139	2.3	2.5
Pneumonia 480-486	16	21.0	16.2	703	12.1	12.4	845	14.2	15.5	815	13.4	14.9
Influenza 487	2	2.6	1.5	15	0.3	0.3	19	0.3	0.4	6	0.1	0.1
Bronchitis,emphysema and asthma 490-493	8	10.5	6.4	387	6.6	7.3	351	5.9	6.5	409	6.7	7.6
Other diseases of respiratory system 460-478, 494-519	9	11.8	6.3	637	10.9	12.3	631	10.6	11.8	768	12.6	14.2
Ulcer of stomach and duodenum 531-533	2	2.6	1.2	89	1.5	1.8	105	1.8	2.0	115	1.9	2.1
Appendicitis 540-543	-	-	-	11	0.2	0.2	9	0.2	0.2	17	0.3	0.3
Intestinal obstruction and hernia 550-553, 560	1	1.3	0.6	94	1.6	1.8	80	1.3	1.5	87	1.4	1.6
Chronic liver disease and cirrhosis 571	6	7.9	5.3	662	11.4	13.3	690	11.6	13.2	829	13.6	15.5
Other diseases of digestive system rest of 520-579	7	9.2	7.8	454	7.8	8.7	355	6.0	6.6	341	5.6	6.2
Nephritis, nephrotic syndrome and nephrosis 580-589	6	7.9	4.4	179	3.1	3.5	203	3.4	3.7	231	3.8	4.1
Hyperplasia of prostate 600	3	3.9	2.0	15	0.3	0.3	28	0.5	0.5	36	0.6	0.7
Other diseases of genitourinary system 590-599, 601-629	1	1.3	0.6	65	1.1	1.3	69	1.2	1.2	75	1.2	1.3
Abortion 630-639	-	-	-	15	0.3	0.3	22	0.4	0.5	26	0.4	0.4
Direct obstetric causes 640-646, 651-676	2	2.6	2.8	105	1.8	1.7	74	1.2	1.2	81	1.3	1.3
Other obstetric causes 647,648,650	-	-	-	4	0.1	0.1	18	0.3	0.3	13	0.2	0.2
Congenital anomalies 740-759	8	10.5	14.0	402	6.9	6.4	445	7.5	8.0	363	5.9	6.9
Birth trauma 767	-	-	-	62	1.1	1.0	100	1.7	1.8	100	1.6	1.9
Other conditions originating in the perinatal period 760-766, 768-779	22	28.9	40.8	2601	44.7	40.6	2618	43.9	47.5	2779	45.5	53.9
Symptoms and ill-defined conditions 780-799	80	105.2	15.3	5709	98.0	109.4	4522	75.9	84.6	4053	66.4	74.9
All other diseases 680-739	4	5.3	2.5	88	1.5	1.7	113	1.9	2.1	101	1.7	1.8
Motor vehicle traffic accidents E810-E819	7	9.2	7.4	541	9.3	9.8	679	11.4	11.6	538	8.8	8.9
Accidental falls E880-E888	2	2.6	2.4	90	1.5	1.8	86	1.4	1.6	41	0.7	0.7
All other accidents rest of E800-E949	11	14.5	11.7	610	10.5	10.7	735	12.3	12.6	1065	17.5	18.0
Suicide E950-E959	-	-	-	133	2.3	2.4	167	2.8	2.9	149	2.4	2.5
Homicide E960-E969	1	1.3	1.3	257	4.4	4.7	299	5.0	5.2	265	4.3	4.3
Injury unknown whether accidentally or purposely inflicted E980-E989	-	-	-	420	7.2	7.8	189	3.2	3.2	216	3.5	3.6
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	4	0.1	0.1	4	0.1	0.1	33	0.5	0.6

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	DOMINICAN REPUBLIC 1985			ECUADOR 1982			1984			1985		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	27844	434.0	549.0	53009	616.0	623.1	53118	582.8	594.8	51134	545.2	558.1
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	24	0.4	0.4	75	0.9	0.9	68	0.7	0.7	59	0.6	0.6
Paratyphoid fever and food poisoning 002.1-002.9	53	0.8	0.9	105	1.2	1.2	118	1.3	1.3	119	1.3	1.3
Shigellosis and amebiasis 003,005	8	0.1	0.2	52	0.6	0.6	59	0.6	0.6	64	0.7	0.7
Other intestinal infections 004,006	1738	27.1	41.3	5156	59.9	60.6	4168	45.7	48.4	3646	38.9	41.4
Tuberculosis of respiratory system 007-009	495	7.7	8.3	1102	12.8	13.2	2	0.0	0.0	4	0.0	0.0
Other tuberculosis 010-012	52	0.8	0.9	171	2.0	2.0	1310	14.4	14.6	1211	12.9	13.1
Plague 013-018	-	-	-	-	-	-	1	0.0	0.0	-	-	-
Diphtheria 020	16	0.2	0.3	14	0.2	0.2	26	0.3	0.3	10	0.1	0.1
Whooping cough 032	6	0.1	0.1	574	6.7	6.7	188	2.1	2.2	191	2.0	2.2
Meningococcal infection 033	16	0.2	0.3	6	0.1	0.1	4	0.0	0.1	5	0.1	0.1
Tetanus 036	30	0.5	0.6	97	1.1	1.1	125	1.4	1.4	77	0.8	0.8
Septicemia 037	410	6.4	9.5	145	1.7	1.7	249	2.7	2.8	234	2.5	2.5
Acute poliomyelitis 038	3	0.0	0.0	6	0.1	0.1	8	0.1	0.1	4	0.0	0.0
Smallpox 045	-	-	-	-	-	-	-	-	-	-	-	-
Measles 050	156	2.4	3.1	510	5.9	5.9	1184	13.0	13.4	150	1.6	1.7
Yellow fever 055	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 060	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 062-064	2	0.0	0.0	1	0.0	0.0	-	-	-	7	0.1	0.1
Rabies 070	70	1.1	1.1	45	0.5	0.5	49	0.5	0.6	64	0.7	0.8
Malaria 071	3	0.0	0.1	37	0.4	0.4	18	0.2	0.2	15	0.2	0.2
Trypanosomiasis 084	9	0.1	0.2	25	0.3	0.3	92	1.0	1.0	64	0.7	0.7
Syphilis 086	1	0.0	0.0	12	0.1	0.1	16	0.2	0.2	16	0.2	0.2
All other infectious and parasitic diseases 090-097, rest of 001-139	124	1.9	3.3	12	0.1	0.1	10	0.1	0.1	10	0.1	0.1
Malignant neoplasm of stomach 151	80	1.2	1.6	365	4.2	4.3	278	3.1	3.1	281	3.0	3.1
Malignant neoplasm of colon 153	144	2.2	2.6	1029	12.0	12.2	1110	12.2	12.2	1137	12.1	12.1
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	76	1.2	1.4	87	1.0	1.0	89	1.0	1.0	88	0.9	1.0
Malignant neoplasm of trachea, bronchus and lung 162	40	0.6	0.7	48	0.6	0.6	57	0.6	0.6	52	0.6	0.5
Malignant neoplasm of female breast 174	142	2.2	2.5	212	2.5	2.5	236	2.6	2.6	259	2.8	2.8
Malignant neoplasm of cervix uteri 180	82	1.3	1.5	124	1.4	1.6	125	1.4	1.5	137	1.5	1.6
Leukemia 204-208	117	1.8	2.1	157	1.8	2.0	162	1.8	1.9	223	2.4	2.5
Malignant neoplasm of other and unspecified sites 140-208, rest of	98	1.5	1.6	246	2.9	2.9	219	2.4	2.4	234	2.5	2.5
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	1061	16.5	18.9	2098	24.4	25.1	2186	24.0	24.3	2386	25.4	25.9
Diabetes mellitus 250	130	2.0	2.2	114	1.3	1.3	172	1.9	1.8	210	2.2	2.3
Kwashiorkor 260	573	8.9	10.2	513	6.0	6.2	555	6.1	6.2	589	6.3	6.4
Nutritional marasmus 261	10	0.2	0.2	65	0.8	0.8	45	0.5	0.5	44	0.5	0.5
Other protein-calorie malnutrition 262,263	9	0.1	0.2	48	0.6	0.6	111	1.2	1.3	114	1.2	1.3
Avitaminosis 264-269	630	9.8	12.5	1417	16.5	16.5	1303	14.3	14.8	1156	12.3	12.9
Other endocrine and metabolic diseases 240-279, rest of	4	0.1	0.1	10	0.1	0.1	14	0.2	0.2	14	0.1	0.2
Anemias 280-285	216	3.4	4.6	361	4.2	4.3	340	3.7	3.9	308	3.3	3.3
Other diseases of blood and blood-forming organs 286-289	242	3.8	4.4	484	5.6	5.7	554	6.1	6.1	515	5.5	5.4
Mental disorders 290-319	111	1.7	2.6	66	0.8	0.8	67	0.7	0.8	56	0.6	0.6
Meningitis 320-322	85	1.3	1.5	509	5.9	6.3	544	6.0	6.2	541	5.8	6.0
Other diseases of nervous system and sense organs 323-389	278	4.3	6.6	283	3.3	3.3	310	3.4	3.6	293	3.1	3.3
Acute rheumatic fever 390-392	275	4.3	4.9	618	7.2	7.2	651	7.1	7.1	606	6.5	6.6
Chronic rheumatic heart disease 393-398	14	0.2	0.2	28	0.3	0.3	36	0.4	0.4	31	0.3	0.3
Hypertensive disease 401-405	32	0.5	0.5	79	0.9	0.9	60	0.7	0.7	89	0.9	0.9
Acute myocardial infarction 410	612	9.5	10.9	450	5.2	5.3	492	5.4	5.4	499	5.3	5.3
Other ischemic heart disease 411-414	1626	25.3	29.1	1038	12.1	12.3	1231	13.5	13.7	1325	14.1	14.3
Diseases of pulmonary circulation and other heart disease 415-429	109	1.7	2.0	240	2.8	2.8	271	3.0	3.0	247	2.6	2.6
Cerebrovascular disease 430-438	2142	33.4	38.8	3230	37.5	37.2	3060	33.6	32.7	3168	33.8	33.0
Atherosclerosis 440	1726	26.9	30.9	1934	22.5	22.8	2298	25.2	25.3	2416	25.8	25.9
Other diseases of circulatory system 441-459	56	0.9	1.0	198	2.3	2.3	155	1.7	1.7	184	2.0	1.9
Pneumonia 480-486	120	1.9	2.1	150	1.7	1.7	200	2.2	2.2	196	2.1	2.1
Influenza 487	1158	18.0	24.4	3222	37.4	37.6	2842	31.2	31.9	2733	29.1	29.8
Bronchitis,emphysema and asthma 490-493	18	0.3	0.4	311	3.6	3.6	315	3.5	3.6	267	2.8	3.0
Other diseases of respiratory system 460-478, 494-519	409	6.4	7.9	2325	27.0	27.3	2130	23.4	24.4	1962	20.9	22.0
Ulcer of stomach and duodenum 531-533	688	10.7	12.9	1251	14.5	14.7	1186	13.0	13.6	1186	12.6	13.2
Appendicitis 540-543	122	1.9	2.1	240	2.8	2.8	250	2.7	2.7	252	2.7	2.7
Intestinal obstruction and hernia 550-553, 560	22	0.3	0.4	82	1.0	0.9	64	0.7	0.7	63	0.7	0.7
Chronic liver disease and cirrhosis 571	92	1.4	1.8	398	4.6	4.6	419	4.6	4.7	292	3.1	3.2
Other diseases of digestive system 520-579, rest of	816	12.7	14.5	545	6.3	6.7	540	5.9	6.2	647	6.9	7.2
Nephritis, nephrotic syndrome and nephrosis 580-589	378	5.9	6.9	883	10.3	10.5	985	10.8	11.0	1096	11.7	11.8
Hyperplasia of prostate 600	182	2.8	3.1	642	7.5	7.6	714	7.8	7.8	741	7.9	7.9
Other diseases of genitourinary system 590-599, 601-629	41	0.6	0.7	75	0.9	0.8	61	0.7	0.6	58	0.6	0.6
Abortion 630-639	130	2.0	2.4	133	1.5	1.6	181	2.0	2.0	205	2.2	2.2
Direct obstetric causes 640-646, 651-676	18	0.3	0.2	27	0.3	0.3	34	0.4	0.4	34	0.4	0.4
Other obstetric causes 647,648,650	79	1.2	1.1	356	4.1	4.2	345	3.8	3.7	361	3.8	3.8
Congenital anomalies 740-759	9	0.1	0.1	11	0.1	0.1	5	0.1	0.1	2	0.0	0.0
Birth trauma 767	447	7.0	11.4	549	6.4	6.5	595	6.5	7.1	644	6.9	7.6
Other conditions originating in the perinatal period 760-766, 768-779	115	1.8	3.2	106	1.2	1.3	148	1.6	1.8	187	2.0	2.3
Symptoms and ill-defined conditions 780-799	2620	40.8	73.0	3215	37.3	38.7	2879	31.6	35.3	2913	31.1	35.1
All other diseases 680-739	4178	65.1	77.1	8026	93.3	93.1	8410	92.3	92.1	7882	84.0	84.3
Motor vehicle traffic accidents E810-E819	101	1.6	1.8	212	2.5	2.5	301	3.3	3.1	287	3.1	3.0
Accidental falls E880-E888	557	8.7	8.9	1887	21.9	22.2	1770	19.4	19.3	1704	18.2	18.2
All other accidents rest of E800-E949	52	0.8	0.9	386	4.5	4.6	376	4.1	4.2	459	4.9	5.0
Suicide E950-E959	836	13.0	13.7	2659	30.9	31.1	2706	29.7	29.9	2586	27.6	27.7
Homicide E960-E969	133	2.1	2.1	374	4.3	4.3	393	4.3	4.1	395	4.2	4.1
Injury unknown whether accidentally or purposely inflicted E980-E989	310	4.8	4.9	691	8.0	8.1	828	9.1	9.1	819	8.7	8.6
Injury from operations of war and legal intervention E970-E978,E990-E999	222	3.5	3.6	57	0.7	0.6	15	0.2	0.2	11	0.1	0.1
	55	0.9	1.0	1	0.0	0.0	-	-	-	-	-	-

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	ECUADOR 1986 Number	ECUADOR 1986 Crude rate	ECUADOR 1986 Age-adj. rate	ECUADOR 1987 Number	ECUADOR 1987 Crude rate	ECUADOR 1987 Age-adj. rate	EL SALVADOR 1984 Number	EL SALVADOR 1984 Crude rate	EL SALVADOR 1984 Age-adj. rate	FALKLAND ISLANDS 1983 Number	FALKLAND ISLANDS 1983 Crude rate	FALKLAND ISLANDS 1983 Age-adj. rate
All causes	50957	528.2	579.6	51567	519.7	573.2	28870	609.3	627.5	18	900.5	711.9
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	77	0.8	0.8	110	1.1	1.1	301	6.4	6.4	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9,003,005	112	1.2	1.2	131	1.3	1.4	2	0.0	0.1	-	-	-
Shigellosis and amebiasis 004,006	53	0.5	0.6	52	0.5	0.5	32	0.7	0.7	-	-	-
Other intestinal infections 007-009	3711	38.5	48.1	3519	35.5	44.8	1702	35.9	36.4	-	-	-
Tuberculosis of respiratory system 010-012	6	0.1	0.1	1123	11.3	11.5	175	3.7	4.0	-	-	-
Other tuberculosis 013-018	1275	13.2	13.6	155	1.6	1.6	22	0.5	0.5	-	-	-
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	9	0.1	0.1	10	0.1	0.1	5	0.1	0.1	-	-	-
Whooping cough 033	234	2.4	3.2	114	1.1	1.5	29	0.6	0.6	-	-	-
Meningococcal infection 036	-	-	-	2	0.0	0.0	7	0.1	0.1	-	-	-
Tetanus 037	78	0.8	0.9	64	0.6	0.7	50	1.1	1.1	-	-	-
Septicemia 038	255	2.6	2.9	248	2.5	2.8	75	1.6	1.7	-	-	-
Acute poliomyelitis 045	3	0.0	0.0	2	0.0	0.0	7	0.1	0.1	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	107	1.1	1.3	257	2.6	2.9	182	3.8	3.7	-	-	-
Yellow fever 060	1	0.0	0.0	1	0.0	0.0	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	9	0.1	0.1	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	44	0.5	0.5	52	0.5	0.5	14	0.3	0.3	-	-	-
Rabies 071	11	0.1	0.1	12	0.1	0.1	28	0.6	0.6	-	-	-
Malaria 084	90	0.9	1.0	77	0.8	0.8	63	1.3	1.4	-	-	-
Trypanosomiasis 086	11	0.1	0.1	14	0.1	0.1	5	0.1	0.1	-	-	-
Syphilis 090-097	16	0.2	0.2	10	0.1	0.1	8	0.2	0.2	-	-	-
All other infectious and parasitic diseases 001-139,rest of	271	2.8	3.0	253	2.5	2.7	163	3.4	3.5	-	-	-
Malignant neoplasm of stomach 151	1171	12.1	12.2	1160	11.7	11.8	140	3.0	3.3	-	-	-
Malignant neoplasm of colon 153	115	1.2	1.2	115	1.2	1.2	27	0.6	0.6	-	-	-
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	53	0.5	0.6	56	0.6	0.6	2	0.0	0.0	-	-	-
Malignant neoplasm of trachea, bronchus and lung 162	251	2.6	2.6	263	2.7	2.7	38	0.8	0.9	1	50.0	46.8
Malignant neoplasm of female breast 174	161	1.7	1.8	162	1.6	1.7	12	0.3	0.3	-	-	-
Malignant neoplasm of cervix uteri 180	172	1.8	1.9	207	2.1	2.2	74	1.6	1.8	-	-	-
Leukemia 204-208	258	2.7	2.7	285	2.9	3.0	94	2.0	2.0	1	50.0	42.4
Malignant neoplasm of other and unspecified sites 140-208,rest of	2272	23.6	23.9	2490	25.1	25.5	646	13.6	15.0	2	100.1	75.7
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	220	2.3	2.4	157	1.6	1.6	133	2.8	3.0	-	-	-
Diabetes mellitus 250	664	6.9	7.0	833	8.4	8.5	294	6.2	6.7	-	-	-
Kwashiorkor 260	31	0.3	0.3	37	0.4	0.5	-	-	-	-	-	-
Nutritional marasmus 261	145	1.5	1.8	147	1.5	1.8	1	0.0	0.0	-	-	-
Other protein-calorie malnutrition 262,263	1062	11.0	13.0	953	9.6	11.4	203	4.3	4.0	-	-	-
Avitaminosis 264-269	11	0.1	0.1	10	0.1	0.1	5	0.1	0.1	-	-	-
Other endocrine and metabolic diseases 240-279,rest of	291	3.0	3.5	304	3.1	3.5	178	3.8	3.8	-	-	-
Anemias 280-285	512	5.3	5.4	547	5.5	5.7	262	5.5	5.7	-	-	-
Other diseases of blood and blood-forming organs 286-289	67	0.7	0.7	64	0.6	0.7	20	0.4	0.4	-	-	-
Mental disorders 290-319	512	5.3	5.5	539	5.4	5.7	715	15.1	16.2	2	100.1	81.6
Meningitis 320-322	284	2.9	3.8	288	2.9	3.7	107	2.3	2.3	-	-	-
Other diseases of nervous system and sense organs 323-389	665	6.9	7.2	731	7.4	7.7	322	6.8	7.1	-	-	-
Acute rheumatic fever 390-392	32	0.3	0.3	32	0.3	0.3	4	0.1	0.1	-	-	-
Chronic rheumatic heart disease 393-398	87	0.9	0.9	86	0.9	0.9	16	0.3	0.3	-	-	-
Hypertensive disease 401-405	522	5.4	5.4	590	5.9	6.0	45	0.9	1.1	-	-	-
Acute myocardial infarction 410	1379	14.3	14.4	1381	13.9	14.1	792	16.7	17.7	2	100.1	93.6
Other ischemic heart disease 411-414	240	2.5	2.5	274	2.8	2.7	62	1.3	1.4	-	-	-
Diseases of pulmonary circulation and other heart disease 415-429	3003	31.1	30.8	2980	30.0	29.9	1179	24.9	25.9	1	50.0	33.3
Cerebrovascular disease 430-438	2396	24.8	25.0	2414	24.3	24.5	869	18.3	19.4	4	200.1	150.7
Atherosclerosis 440	161	1.7	1.6	143	1.4	1.4	22	0.5	0.5	2	100.1	65.2
Other diseases of circulatory system 441-459	201	2.1	2.1	221	2.2	2.3	66	1.4	1.5	-	-	-
Pneumonia 480-486	2639	27.4	31.1	2687	27.1	31.1	672	14.2	14.6	-	-	-
Influenza 487	298	3.1	3.8	258	2.6	3.3	38	0.8	0.8	-	-	-
Bronchitis,emphysema and asthma 490-493	1979	20.5	24.5	1901	19.2	23.2	742	15.7	15.8	-	-	-
Other diseases of respiratory system 460-478,494-519	1217	12.6	15.0	1188	12.0	14.6	211	4.5	4.6	-	-	-
Ulcer of stomach and duodenum 531-533	288	3.0	3.0	277	2.8	2.8	113	2.4	2.6	-	-	-
Appendicitis 540-543	63	0.7	0.6	65	0.7	0.7	21	0.4	0.5	-	-	-
Intestinal obstruction and hernia 550-553,560	418	4.3	4.6	210	2.1	2.2	85	1.8	1.9	-	-	-
Chronic liver disease and cirrhosis 571	617	6.4	6.8	701	7.1	7.5	286	6.0	6.7	-	-	-
Other diseases of digestive system 520-579,rest of	1067	11.1	11.5	1260	12.7	13.3	743	15.7	16.8	-	-	-
Nephritis, nephrotic syndrome and nephrosis 580-589	840	8.7	8.9	906	9.1	9.3	144	3.0	3.3	-	-	-
Hyperplasia of prostate 600	65	0.7	0.7	75	0.8	0.7	8	0.2	0.2	-	-	-
Other diseases of genitourinary system 590-599,601-629	183	1.9	1.9	172	1.7	1.8	132	2.8	3.0	1	50.0	32.6
Abortion 630-639	31	0.3	0.3	27	0.3	0.3	7	0.1	0.2	-	-	-
Direct obstetric causes 640-646,651-676	292	3.0	3.0	321	3.2	3.1	91	1.9	2.0	-	-	-
Other obstetric causes 647,648,650	7	0.1	0.1	7	0.1	0.1	1	0.0	0.0	-	-	-
Congenital anomalies 740-759	686	7.1	9.9	664	6.7	9.5	160	3.4	3.4	-	-	-
Birth trauma 767	149	1.5	2.3	107	1.1	1.7	37	0.8	0.8	-	-	-
Other conditions originating in the perinatal period 760-766,768-779	2859	29.6	43.8	2837	28.6	43.8	2861	60.4	62.2	-	-	-
Symptoms and ill-defined conditions 780-799	7571	78.5	82.7	7771	78.3	82.9	6727	142.0	144.4	-	-	-
All other diseases 680-739	292	3.0	3.1	289	2.9	2.9	637	13.4	14.1	-	-	-
Motor vehicle traffic accidents E810-E819	1721	17.8	18.0	1729	17.4	17.6	713	15.0	15.6	-	-	-
Accidental falls E880-E888	484	5.0	5.1	597	6.0	6.1	214	4.5	4.6	-	-	-
All other accidents rest of E800-E949	2507	26.0	26.5	2430	24.5	25.2	1247	26.3	26.8	-	-	-
Suicide E950-E959	380	3.9	3.8	391	3.9	3.9	565	11.9	12.2	1	50.0	45.0
Homicide E960-E969	957	9.9	9.9	1002	10.1	10.1	1929	40.7	41.6	-	-	-
Injury unknown whether accidentally or purposely inflicted E980-E989	28	0.3	0.3	20	0.2	0.2	1)1288	27.2	26.2	-	-	-
Injury from operations of war and legal intervention E970-E978,E990-E999	8	0.1	0.1	-	-	-	A) ...	...	...	1	50.0	45.0

1) CATEGORY INCLUDES OTHER CAUSES OF DEATH.
A) DATA INCLUDED IN INJURY UNKNOWN WHETHER ACCIDENTALLY OR PURPOSELY INFLICTED

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		FRENCH GUIANA 1984			GRENADA 1984			GUADELOUPE 1980			GUADELOUPE 1981		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		469	586.3	556.0	728	758.6	...	1948	595.7	...	2091	639.4	420.2
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	-	-	-	-	-	-	-	-	-	1	0.3	0.3
Paratyphoid fever and food poisoning	002.1-002.9 003,005	A) ...	...	...	-	-	-	-	-	-	-	-	-
Shigellosis and amebiasis	004,006	A) ...	...	...	-	-	-	-	-	-	-	-	-
Other intestinal infections	007-009	1) 12	15.0	16.0	-	-	-	2	0.6	...	21	6.4	7.3
Tuberculosis of respiratory system	010-012	1) 2	2.5	2.1	...	...	...	-	-	-	9	2.8	1.8
Other tuberculosis	013-018	B) ...	...	...	2	2.1	...	-	-	-	-	-	-
Plague	020	C) ...	...	...	-	-	-	-	-	-	-	-	-
Diphtheria	032	C) ...	...	...	-	-	-	-	-	-	-	-	-
Whooping cough	033	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection	036	-	-	-	-	-	-	-	-	-	2	0.6	0.7
Tetanus	037	-	-	-	3	3.1	...	2	0.6	...	2	0.6	0.4
Septicemia	038	6	7.5	6.7	2	2.1	...	15	4.6	...	17	5.2	3.4
Acute poliomyelitis	045	C) ...	...	...	-	-	-	-	-	-	-	-	-
Smallpox	050	-	-	-	-	-	-	-	-	-	-	-	-
Measles	055	-	-	-	-	-	-	-	-	-	1	0.3	0.3
Yellow fever	060	C) ...	...	...	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	C) ...	...	...	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	C) ...	...	...	2	2.1	...	-	-	-	5	1.5	1.2
Rabies	071	C) ...	...	...	-	-	-	-	-	-	-	-	-
Malaria	084	3	3.8	4.1	-	-	-	1	0.3	...	-	-	-
Trypanosomiasis	086	C) ...	...	...	-	-	-	-	-	-	-	-	-
Syphilis	090-097	C) ...	...	...	-	-	-	-	-	-	2	0.6	1.0
All other infectious and parasitic diseases	rest of 001-139	1) 17	21.3	20.4	4	4.2	...	3	0.9	...	13	4.0	3.1
Malignant neoplasm of stomach	151	7	8.8	8.2	10	10.4	...	29	8.9	...	51	15.6	8.9
Malignant neoplasm of colon	153	5	5.8	5.5	5	5.2	...	8	2.4	...	12	3.7	1.8
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	1	1.3	1.3	2	2.1	...	4	1.2	...	8	2.4	1.5
Malignant neoplasm of trachea, bronchus and lung	162	2	2.5	2.4	2	2.1	...	17	5.2	...	19	5.8	3.4
Malignant neoplasm of female breast	174	1	1.3	1.0	5	5.2	...	13	4.0	...	10	3.1	2.2
Malignant neoplasm of cervix uteri	180	4	5.0	5.0	3	3.1	...	2	0.6	...	14	4.3	2.8
Leukemia	204-208	1	1.3	1.3	6	6.2	...	2	0.6	...	9	2.8	2.1
Malignant neoplasm of other and unspecified sites	rest of 140-208	32	40.0	37.4	54	56.2	...	112	34.3	...	193	59.0	34.9
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	E) ...	...	...	4	4.2	...	-	-	-	4	1.2	0.8
Diabetes mellitus	250	8	10.0	9.1	52	54.1	...	23	7.0	...	75	22.9	12.3
Kwashiorkor	260	E) ...	...	...	-	-	-	-	-	-	-	-	-
Nutritional marasmus	261	-	-	-	1	1.0	...	-	-	-	-	-	-
Other protein-calorie malnutrition	262,263	1	1.3	1.3	5	5.2	...	-	-	-	10	3.1	1.3
Avitaminosis	264-269	E) ...	...	...	-	-	-	-	-	-	-	-	-
Other endocrine and metabolic diseases	rest of 240-279	E) ...	...	...	8	8.3	...	1	0.3	...	4	1.2	0.7
Anemias	280-285	1	1.3	1.3	5	5.2	...	1	0.3	...	4	1.2	1.2
Other diseases of blood and blood-forming organs	286-289	E) ...	...	...	-	-	-	1	0.3	...	-	-	-
Mental disorders	290-319	E) ...	...	...	10	10.4	...	-	-	-	96	29.4	20.4
Meningitis	320-322	3	3.8	3.9	1	1.0	...	3	0.9	...	7	2.1	2.4
Other diseases of nervous system and sense organs	323-389	E) ...	...	...	10	10.4	...	7	2.1	...	37	11.3	8.8
Acute rheumatic fever	390-392	-	-	-	-	-	-	-	-	-	...	...	...
Chronic rheumatic heart disease	393-398	1	1.3	1.0	3	3.1	...	1	0.3	...	...	...	...
Hypertensive disease	401-405	41	51.3	46.4	30	31.2	...	62	19.0	...	161	49.2	25.0
Acute myocardial infarction	410	14	17.5	16.0	28	29.1	...	41	12.5	...	35	10.7	6.1
Other ischemic heart disease	411-414	6	7.5	7.3	52	54.1	...	1	0.3	...	22	6.7	3.4
Diseases of pulmonary circulation and other heart disease	415-429	1) 23	28.8	26.8	47	48.9	...	246	75.2	...	189	57.8	29.4
Cerebrovascular disease	430-438	34	42.5	39.4	94	97.8	...	239	73.1	...	202	61.8	32.1
Atherosclerosis	440	7	8.8	8.2	12	12.5	...	-	-	-	17	5.2	2.3
Other diseases of circulatory system	441-459	D) ...	...	...	13	13.5	...	38	11.6	...	30	9.2	4.7
Pneumonia	480-486	2	2.5	2.8	28	29.1	...	5	1.5	...	3	0.9	0.4
Influenza	487	-	-	-	-	-	-	-	-	-	3	0.9	0.4
Bronchitis,emphysema and asthma	490-493	18	22.5	21.1	10	10.4	...	9	2.8	...	21	6.4	3.6
Other diseases of respiratory system	460-478 494-519	E) ...	...	...	14	14.6	...	13	4.0	...	31	9.5	5.6
Ulcer of stomach and duodenum	531-533	2	2.5	2.2	2	2.1	...	5	1.5	...	9	2.8	1.5
Appendicitis	540-543	1	1.3	1.5	-	-	-	2	0.6	...	3	0.9	0.4
Intestinal obstruction and hernia	550-553 560	E) ...	...	...	1	1.0	...	2	0.6	...	17	5.2	2.9
Chronic liver disease and cirrhosis	571	25	31.3	29.5	5	5.2	...	54	16.5	...	63	19.3	13.7
Other diseases of digestive system	rest of 520-579	E) ...	...	...	30	31.2	...	65	19.9	...	31	9.5	5.7
Nephritis, nephrotic syndrome and nephrosis	580-589	11	13.8	13.2	7	7.3	...	-	-	-	11	3.4	1.6
Hyperplasia of prostate	600	2	2.5	2.2	...	...	...	-	-	-	-	-	-
Other diseases of genitourinary system	590-599 601-629	-	-	-	7	7.3	...	14	4.3	...	16	4.9	3.0
Abortion	630-639	-	-	-	1	1.0	...	-	-	-	1	0.3	0.3
Direct obstetric causes	640-646 651-676	4	5.0	5.5	3	3.1	...	-	-	-	1	0.3	0.3
Other obstetric causes	647,648,650	1	1.3	1.4	-	-	-	-	-	-	1	0.3	0.3
Congenital anomalies	740-759	7	8.8	8.9	13	13.5	...	-	-	-	28	8.6	12.9
Birth trauma	767	1	1.3	1.4	2	2.1	...	-	-	-	-	-	-
Other conditions originating in the perinatal period	760-766 768-779	16	20.0	20.5	12	12.5	...	54	16.5	...	67	20.5	32.6
Symptoms and ill-defined conditions	780-799	62	77.5	71.1	63	65.6	...	394	120.5	...	203	62.1	34.5
All other diseases	680-739	1) 3	3.8	3.3	10	10.4	...	-	-	-	11	3.4	2.6
Motor vehicle traffic accidents	E810-E819	17	21.3	20.0	6	6.2	...	90	27.5	...	99	30.3	26.1
Accidental falls	E880-E888	2	2.5	2.3	9	9.4	...	8	2.4	...	22	6.7	4.2
All other accidents	rest of E800-E949	41	51.3	50.5	6	6.2	...	326	99.7	...	99	30.3	23.5
Suicide	E950-E959	14	17.5	16.9	2	2.1	...	32	9.8	...	26	8.0	6.4
Homicide	E960-E969	8	10.0	9.4	5	5.2	...	1	0.3	...	11	3.4	3.0
Injury unknown whether accidentally or purposely inflicted	E980-E989	F) ...	...	...	16	16.6	...	-	-	-	20	6.1	5.1
Injury from operations of war and legal intervention	E970-E978,E990-E999	1) 2	2.5	2.4	2	2.1	...	-	-	-	-	-	-

1) CATEGORY INCLUDES OTHER CAUSES OF DEATH.
A) DATA INCLUDED IN OTHER INTESTINAL INFECTIONS.
B) DATA INCLUDED IN TUBERCULOSIS OF RESPIRATORY SYSTEM.
C) DATA INCLUDED IN ALL OTHER INFECTIOUS AND PARASITIC DISEASES.
D) DATA INCLUDED IN DISEASES OF PULMONARY CIRCULATION AND OTHER HEART DISEASE.
E) DATA INCLUDED IN CATEGORY OF ALL OTHER DISEASES.
F) DATA INCLUDED IN INJURY FROM OPERATIONS OF WAR AND LEGAL INTERVENTION

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	GUATEMALA 1984			GUYANA 1984			HONDURAS 1981			JAMAICA 1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	65260	856.1	839.5	4781	510.8	539.6	18313	479.2	539.8	13706	595.6	450.5
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	232	3.0	3.1	2	0.2	0.2	1) 20	0.5	0.6	2	0.1	0.1
Paratyphoid fever and food 002.1-002.9 poisoning 003,005	56	0.7	0.8	5	0.5	0.5	A) -	-	-	2	0.1	0.1
Shigellosis and amebiasis 004,006	444	5.7	5.9	3	0.3	0.4	53	1.4	1.4	-	-	-
Other intestinal infections 007-009	10372	134.0	127.5	3	0.3	0.3	1929	50.5	44.6	524	22.8	25.2
Tuberculosis of respiratory system 010-012	748	9.7	10.7	10	1.1	1.1	126	3.3	4.1	23	1.0	0.7
Other tuberculosis 013-018	56	0.7	0.8	4	0.4	0.3	10	0.3	0.3	2	0.1	0.1
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	8	0.1	0.1	-	-	-	-	-	-	-	-	-
Whooping cough 033	1148	14.8	12.4	-	-	-	210	5.5	4.3	-	-	-
Meningococcal infection 036	4	0.1	0.1	-	-	-	-	-	-	-	-	-
Tetanus 037	76	1.0	1.0	8	0.9	0.8	18	0.5	0.6	9	0.4	0.4
Septicemia 038	648	8.4	7.8	61	6.5	6.6	81	2.1	2.1	73	3.2	2.4
Acute poliomyelitis 045	12	0.2	0.1	-	-	-	48	1.3	1.1	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	1120	14.5	12.6	-	-	-	301	7.9	6.4	-	-	-
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	48	0.6	0.6	7	0.7	0.8	1	0.0	0.0	6	0.3	0.3
Rabies 071	4	0.1	0.1	-	-	-	5	0.1	0.1	-	-	-
Malaria 084	426	5.5	5.8	1	0.1	0.1	19	0.5	0.6	-	-	-
Trypanosomiasis 086	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis 090-097	16	0.2	0.2	2	0.2	0.2	-	-	-	6	0.3	0.3
All other infectious and parasitic diseases rest of 001-139	952	12.3	11.0	40	4.3	4.5	270	7.1	6.8	39	1.7	1.7
Malignant neoplasm of stomach 151	612	7.9	9.2	42	4.5	4.4	51	1.3	1.7	316	13.7	9.1
Malignant neoplasm of colon 153	8	0.1	0.1	15	1.4	1.3	-	-	-	114	5.0	3.2
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	12	0.2	0.2	7	0.7	0.7	4	0.1	0.1	53	2.3	1.6
Malignant neoplasm of trachea, bronchus and lung 162	60	0.8	0.9	15	1.6	1.6	10	0.3	0.4	222	9.8	7.6
Malignant neoplasm of female breast 174	48	0.6	0.7	21	2.2	2.2	6	0.2	0.2	198	8.6	8.0
Malignant neoplasm of cervix uteri 180	132	1.7	2.0	25	2.7	2.8	5	0.1	0.2	149	6.5	5.9
Leukemia 204-208	136	1.8	1.8	9	1.0	1.0	54	1.4	1.6	45	2.0	1.8
Malignant neoplasm of other and unspecified sites rest of 140-208	1300	16.8	19.8	148	15.8	15.4	439	11.5	14.6	976	42.4	30.8
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	156	2.0	2.2	7	0.7	0.9	110	2.9	3.6	33	1.4	1.2
Diabetes mellitus 250	304	3.9	4.7	163	17.4	17.4	97	2.5	3.3	709	30.8	21.4
Kwashiorkor 260	60	0.8	0.7	25	2.7	4.5	16	0.4	0.4	25	1.1	1.4
Nutritional marasmus 261	28	0.4	0.3	17	1.8	3.1	-	-	-	12	0.5	0.7
Other protein-calorie malnutrition 262,263	3412	44.1	46.0	205	21.9	33.5	107	2.8	2.5	280	12.2	12.0
Avitaminosis 264-269	8	0.1	0.1	2	0.2	0.2	2	0.1	0.0	2	0.1	0.0
Other endocrine and metabolic diseases rest of 240-279	1988	25.7	24.9	89	9.5	10.8	91	2.4	2.5	56	2.4	2.1
Anemias 280-285	608	7.9	8.4	97	10.4	12.5	280	7.3	8.0	82	3.6	3.2
Other diseases of blood and blood-forming organs 286-289	44	0.6	0.5	5	0.5	0.4	13	0.3	0.4	5	0.2	0.3
Mental disorders 290-319	408	5.3	5.9	17	1.8	1.8	96	2.5	3.1	37	1.6	1.3
Meningitis 320-322	264	3.4	3.1	10	1.1	1.4	63	1.6	1.5	70	3.0	3.3
Other diseases of nervous system and sense organs 323-389	432	5.6	5.7	78	8.3	8.2	313	8.2	9.5	253	11.0	9.8
Acute rheumatic fever 390-392	16	0.2	0.2	3	0.3	0.3	-	-	-	6	0.3	0.2
Chronic rheumatic heart disease 393-398	24	0.3	0.4	14	1.5	1.3	3	0.1	0.1	49	2.1	1.8
Hypertensive disease 401-405	112	1.4	1.7	176	18.8	17.5	76	2.0	2.7	743	32.3	20.5
Acute myocardial infarction 410	1084	14.0	16.7	199	21.3	20.7	121	3.2	4.0	508	22.1	15.0
Other ischemic heart disease 411-414	68	0.9	1.1	60	6.4	6.2	13	0.3	0.5	292	12.7	7.8
Diseases of pulmonary circulation and other heart disease 415-429	1900	24.5	29.2	423	45.2	43.8	1234	32.3	40.6	1163	50.5	33.1
Cerebrovascular disease 430-438	1008	13.0	15.5	597	63.8	61.7	498	13.0	17.1	1953	84.9	54.2
Atherosclerosis 440	92	1.2	1.5	19	2.0	1.8	17	0.4	0.7	122	5.3	2.9
Other diseases of circulatory system 441-459	124	1.6	1.9	39	4.2	4.2	68	1.8	2.2	117	5.1	3.4
Pneumonia 480-486	8698	112.4	106.8	171	18.3	21.5	511	13.4	12.8	396	17.2	14.0
Influenza 487	880	11.4	11.1	2	0.2	0.2	46	1.2	1.1	16	0.7	0.4
Bronchitis,emphysema and asthma 490-493	640	8.3	8.0	49	5.2	5.4	514	13.4	14.0	191	8.3	6.6
Other diseases of respiratory system 460-478,494-519	1064	13.7	14.0	79	8.4	10.3	149	3.9	4.7	210	9.1	7.0
Ulcer of stomach and duodenum 531-533	184	2.4	2.8	29	3.1	3.3	46	1.2	1.6	121	5.3	4.2
Appendicitis 540-543	56	0.7	0.8	5	0.5	0.6	12	0.3	0.4	3	0.1	0.1
Intestinal obstruction and hernia 550-553,560	152	2.0	2.2	23	2.5	2.8	37	1.0	1.3	63	2.7	2.4
Chronic liver disease and cirrhosis 571	708	9.1	10.5	119	12.7	13.9	162	4.2	5.4	93	4.0	3.3
Other diseases of digestive system rest of 520-579	580	7.5	8.3	383	40.9	52.0	569	14.9	18.2	190	8.3	7.2
Nephritis, nephrotic syndrome and nephrosis 580-589	400	5.2	5.6	47	5.0	4.7	10	0.3	0.3	241	10.5	7.8
Hyperplasia of prostate 600	4	0.1	0.1	2	0.2	0.2	2	0.1	0.1	47	2.0	1.2
Other diseases of genitourinary system 590-599,601-629	164	2.1	2.3	16	1.7	1.5	108	2.8	3.5	185	8.0	5.2
Abortion 630-639	40	0.5	0.6	5	0.5	0.4	1	0.0	0.0	9	0.4	0.4
Direct obstetric causes 640-646,651-676	188	2.4	2.4	11	1.2	1.1	27	0.7	0.8	5	0.2	0.2
Other obstetric causes 647,648,650	8	0.1	0.1	1	0.1	0.0	-	-	-	-	-	-
Congenital anomalies 740-759	760	9.8	8.0	26	2.8	3.8	13	0.3	0.3	102	4.4	5.7
Birth trauma 767	80	1.0	0.8	-	-	-	1	0.0	0.0	5	0.2	0.3
Other conditions originating in the perinatal period 760-766,768-779	9604	124.1	97.1	155	16.6	19.6	601	15.7	11.8	214	9.3	12.5
Symptoms and ill-defined conditions 780-799	6908	89.3	92.5	515	55.0	53.3	6338	165.8	200.0	1745	75.8	54.4
All other diseases 680-739	296	3.8	4.4	45	4.8	4.9	227	5.9	8.1	150	6.5	4.4
Motor vehicle traffic accidents E810-E819	112	1.4	1.5	2	0.2	0.2	G) ...	...	...	50	2.2	2.1
Accidental falls E880-E888	196	2.5	2.7	23	2.5	2.4	G) ...	...	...	26	1.1	1.0
All other accidents rest of E800-E949	1112	14.4	14.9	204	21.8	20.5	1)2061	53.9	61.1	291	12.6	12.5
Suicide E950-E959	40	0.5	0.6	13	1.4	1.2	G) ...	...	...	4	0.2	0.2
Homicide E960-E969	256	3.3	3.8	2	0.2	0.2	G) ...	...	...	33	1.4	1.3
Injury unknown whether accidentally or purposely inflicted E980-E989	2296	29.7	31.5	89	9.5	8.9	G) ...	...	...	29	1.3	1.2
Injury from operations of war and legal intervention E970-E978,E990-E999	16	0.2	0.2	94	10.0	9.2	G) ...	...	...	11	0.5	0.5

1) CATEGORY INCLUDES OTHER CAUSES OF DEATH.
A) DATA INCLUDED IN TYPHOID FEVER (CATEGORIES 002.1-002.9 ONLY).
G) DATA INCLUDED IN ALL OTHER ACCIDENTS.

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	MARTINIQUE 1985			MEXICO 1983			MEXICO 1985			MEXICO 1986		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	2140	652.6	325.7	413403	550.4	544.8	414003	521.6	520.5	400079	492.7	496.9
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	1027	1.4	1.3	809	1.0	1.0	753	0.9	0.9
Paratyphoid fever and food poisoning 002.1-002.9,003,005	-	-	-	984	1.3	1.3	740	0.9	0.9	674	0.8	0.8
Shigellosis and amebiasis 004,006	-	-	-	2010	2.7	2.7	1706	2.1	2.2	1680	2.1	2.1
Other intestinal infections 007-009	1	0.3	0.1	33979	45.2	43.2	27235	34.3	33.5	26123	32.2	32.4
Tuberculosis of respiratory system 010-012	7	2.1	1.0	5803	7.7	8.1	5940	7.5	7.9	5847	7.2	7.6
Other tuberculosis 013-018	1	0.3	0.2	823	1.1	1.1	722	0.9	0.9	771	0.9	1.0
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	17	0.0	0.0	15	0.0	0.0	7	0.0	0.0
Whooping cough 033	-	-	-	485	0.6	0.6	1159	1.5	1.4	908	1.1	1.1
Meningococcal infection 036	-	-	-	20	0.0	0.0	19	0.0	0.0	17	0.0	0.0
Tetanus 037	5	1.5	0.6	569	0.8	0.8	389	0.5	0.5	344	0.4	0.4
Septicemia 038	17	5.2	2.2	3362	4.5	4.3	2836	3.6	3.6	2314	2.8	2.9
Acute poliomyelitis 045	-	-	-	55	0.1	0.1	52	0.1	0.1	54	0.1	0.1
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	-	-	-	315	0.4	0.4	1709	2.2	2.2	591	0.7	0.7
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	2	0.0	0.0	-	-	-	-	-	-
Viral hepatitis 070	-	-	-	681	0.9	0.9	664	0.8	0.9	678	0.8	0.8
Rabies 071	-	-	-	49	0.1	0.1	83	0.1	0.1	67	0.1	0.1
Malaria 084	-	-	-	14	0.0	0.0	95	0.1	0.1	78	0.1	0.1
Trypanosomiasis 086	-	-	-	2	0.0	0.0	9	0.0	0.0	4	0.0	0.0
Syphilis 090-097	-	-	-	78	0.1	0.1	54	0.1	0.1	80	0.1	0.1
All other infectious and parasitic diseases 001-139	7	2.1	1.0	2696	3.6	3.6	2420	3.0	3.1	2607	3.2	3.3
Malignant neoplasm of stomach 151	47	14.3	6.5	3385	4.5	4.7	3680	4.6	4.8	3823	4.7	4.9
Malignant neoplasm of colon 153	15	4.6	2.0	792	1.1	1.1	1004	1.3	1.3	1087	1.3	1.4
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	9	2.7	1.2	307	0.4	0.4	357	0.4	0.5	325	0.4	0.4
Malignant neoplasm of trachea, bronchus and lung 162	25	7.6	4.2	3632	4.8	5.1	4209	5.3	5.5	4412	5.4	5.7
Malignant neoplasm of female breast 174	37	11.3	6.4	1428	1.9	2.1	1672	2.1	2.3	1768	2.2	2.4
Malignant neoplasm of cervix uteri 180	8	2.4	1.6	3057	4.1	4.5	3572	4.5	4.9	3621	4.5	4.9
Leukemia 204-208	12	3.7	1.9	2077	2.8	2.7	2207	2.8	2.8	2261	2.8	2.8
Malignant neoplasm of other and unspecified sites 140-208	272	83.0	39.3	15888	21.2	22.0	18143	22.9	23.7	18633	22.9	23.9
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	11	3.4	2.0	1766	2.4	2.4	1321	1.7	1.7	1265	1.6	1.6
Diabetes mellitus 250	57	17.4	6.6	18832	25.1	26.3	20824	26.2	27.5	23132	28.5	29.9
Kwashiorkor 260	-	-	-	60	0.1	0.1	51	0.1	0.1	46	0.1	0.0
Nutritional marasmus 261	-	-	-	145	0.2	0.2	54	0.1	0.1	60	0.1	0.1
Other protein-calorie malnutrition 262,263	1	0.3	0.1	4800	6.4	6.1	6395	8.1	7.8	6465	8.0	7.8
Avitaminosis 264-269	-	-	-	150	0.2	0.2	107	0.1	0.1	118	0.1	0.1
Other endocrine and metabolic diseases 240-279	18	5.5	3.6	5899	7.9	7.8	5050	6.4	6.4	5243	6.5	6.5
Anemias 280-285	2	0.6	1.0	3697	4.9	4.9	4274	5.4	5.4	4602	5.7	5.7
Other diseases of blood and blood-forming organs 286-289	3	0.9	0.6	668	0.9	0.8	760	1.0	0.9	710	0.9	0.9
Mental disorders 290-319	42	12.8	7.2	4414	5.9	6.3	4655	5.9	6.4	4487	5.5	6.0
Meningitis 320-322	6	1.8	2.3	1295	1.7	1.6	1258	1.6	1.6	1095	1.3	1.4
Other diseases of nervous system and sense organs 323-389	29	8.8	4.8	5187	6.9	6.9	5010	6.3	6.3	5061	6.2	6.3
Acute rheumatic fever 390-392	1	0.3	0.2	104	0.1	0.1	170	0.2	0.2	226	0.3	0.3
Chronic rheumatic heart disease 393-398	4	1.2	0.5	1487	2.0	2.1	1264	1.6	1.7	1203	1.5	1.6
Hypertensive disease 401-405	57	17.4	7.0	3798	5.1	5.1	5561	7.0	7.0	5682	7.0	7.0
Acute myocardial infarction 410	44	13.4	6.6	14096	18.8	19.4	15942	20.1	20.6	15218	18.7	19.3
Other ischemic heart disease 411-414	10	3.0	1.4	3740	5.0	4.9	4294	5.4	5.3	4465	5.5	5.4
Diseases of pulmonary circulation and other heart disease 415-429	245	74.7	30.4	27522	36.6	36.2	24644	31.0	30.7	23945	29.5	29.2
Cerebrovascular disease 430-438	362	110.4	44.9	16309	21.7	21.9	18059	22.8	22.9	17720	21.8	21.9
Atherosclerosis 440	32	9.8	3.3	744	1.0	0.9	1842	2.3	2.2	1949	2.4	2.3
Other diseases of circulatory system 441-459	15	4.6	2.3	3232	4.3	4.4	2871	3.6	3.7	2758	3.4	3.5
Pneumonia 480-486	39	11.9	5.4	25901	34.5	32.7	24949	31.4	30.5	20554	25.3	25.2
Influenza 487	2	0.6	0.2	1176	1.6	1.5	1087	1.4	1.3	740	0.9	0.9
Bronchitis,emphysema and asthma 490-493	19	5.8	2.6	11339	15.1	14.7	10824	13.6	13.4	9801	12.1	11.9
Other diseases of respiratory system 460-478	55	16.8	8.3	10445	13.9	13.6	11948	15.1	14.8	10574	13.0	13.0
Ulcer of stomach and duodenum 531-533	12	3.7	1.5	2934	3.9	4.0	3037	3.8	3.9	3043	3.7	3.8
Appendicitis 540-543	-	-	-	529	0.7	0.7	496	0.6	0.6	527	0.6	0.7
Intestinal obstruction and hernia 550-553,560	19	5.8	2.4	2447	3.3	3.2	2245	2.8	2.8	2177	2.7	2.7
Chronic liver disease and cirrhosis 571	40	12.2	6.4	16545	22.0	24.2	17185	21.7	23.8	16018	19.7	21.7
Other diseases of digestive system 520-579	48	14.6	6.4	11200	14.9	15.4	10352	13.0	13.5	10084	12.4	12.9
Nephritis, nephrotic syndrome and nephrosis 580-589	27	8.2	3.3	7331	9.8	9.9	7781	9.8	9.9	7614	9.4	9.6
Hyperplasia of prostate 600	2	0.6	0.3	497	0.7	0.6	379	0.5	0.5	410	0.5	0.5
Other diseases of genitourinary system 590-599,601-629	4	1.2	0.6	2381	3.2	3.2	2428	3.1	3.1	2436	3.0	3.0
Abortion 630-639	-	-	-	216	0.3	0.3	147	0.2	0.2	149	0.2	0.2
Direct obstetric causes 640-646,651-676	-	-	-	1848	2.5	2.4	1530	1.9	1.9	1505	1.9	1.8
Other obstetric causes 647,648,650	-	-	-	69	0.1	0.1	25	0.0	0.0	27	0.0	0.0
Congenital anomalies 740-759	15	4.6	6.7	7105	9.5	8.4	6775	8.5	7.7	7084	8.7	8.3
Birth trauma 767	-	-	-	1019	1.4	1.2	839	1.1	0.9	777	1.0	0.9
Other conditions originating in the perinatal period 760-766,768-779	35	10.7	18.8	22633	30.1	25.1	19876	25.0	20.6	18247	22.5	19.6
Symptoms and ill-defined conditions 780-799	237	72.3	30.4	23102	30.8	29.6	19358	24.4	23.7	17466	21.5	21.2
All other diseases 680-739	12	3.7	2.0	3253	4.3	4.3	3155	4.0	4.0	3325	4.1	4.1
Motor vehicle traffic accidents E810-E819	49	14.9	12.6	14262	19.0	19.0	12320	15.5	15.5	12288	15.1	15.3
Accidental falls E880-E888	7	2.1	1.3	4309	5.7	5.7	3802	4.8	4.8	3739	4.6	4.6
All other accidents rest of E800-E949	18	5.5	3.7	26885	35.8	35.6	28996	36.5	36.5	27421	33.8	33.9
Suicide E950-E959	13	4.0	3.6	1041	1.4	1.4	1566	2.0	1.9	1728	2.1	2.1
Homicide E960-E969	12	3.7	2.5	12711	16.9	16.8	14796	18.6	18.7	15800	19.5	19.6
Injury unknown whether accidentally or purposely inflicted E980-E989	73	22.3	13.6	727	1.0	1.0	2185	2.8	2.7	1563	1.9	1.9
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	16	0.0	0.0	16	0.0	0.0	5	0.0	0.0

MEX 1986 PROVISIONAL

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		NETHERLANDS ANTILLES			PANAMA								
		1981			1985			1986			1987		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		893	544.5	398.8	8991	412.4	382.3	8942	401.5	370.9	9105	400.4	373.3
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	1	0.6	0.8	-	-	-	-	-	-	2	0.1	0.1
Paratyphoid fever and food poisoning	002.1-002.9												
	003,005	-	-	-	2	0.1	0.1	2	0.1	0.1	2	0.1	0.1
Shigellosis and amebiasis	004,006	1	0.6	0.3	4	0.2	0.2	3	0.1	0.1	1	0.0	0.0
Other intestinal infections	007-009	5	3.0	2.6	254	11.6	12.4	208	9.3	10.1	205	9.0	9.9
Tuberculosis of respiratory system	010-012	1	0.6	0.3	142	6.5	5.8	159	7.1	6.5	136	6.0	5.7
Other tuberculosis	013-018	-	-	-	26	1.2	1.2	14	0.6	0.6	15	0.7	0.6
Plague	020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough	033	-	-	-	21	1.0	1.2	8	0.4	0.4	15	0.7	0.8
Meningococcal infection	036	-	-	-	-	-	-	7	0.3	0.3	9	0.4	0.4
Tetanus	037	1	0.6	0.3	4	0.2	0.2	4	0.2	0.2	4	0.2	0.2
Septicemia	038	8	4.9	3.1	31	1.4	1.4	38	1.7	1.7	43	1.9	1.8
Acute poliomyelitis	045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox	050	-	-	-	-	-	-	-	-	-	-	-	-
Measles	055	-	-	-	25	1.1	1.3	39	1.8	2.0	27	1.2	1.4
Yellow fever	060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	-	-	-	5	0.2	0.2	8	0.4	0.3	12	0.5	0.6
Rabies	071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria	084	-	-	-	2	0.1	0.1	-	-	-	-	-	-
Trypanosomiasis	086	-	-	-	5	0.2	0.2	5	0.2	0.2	-	-	-
Syphilis	090-097	-	-	-	1	0.0	0.1	-	-	-	1	0.0	0.1
All other infectious and parasitic diseases	rest of 001-139	6	3.7	2.8	39	1.8	1.8	48	2.2	2.3	43	1.9	2.0
Malignant neoplasm of stomach	151	16	9.8	6.5	129	5.9	5.3	129	5.8	5.1	154	6.8	5.9
Malignant neoplasm of colon	153	3	1.8	1.1	44	2.0	1.7	63	2.8	2.4	53	2.3	2.1
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	16	9.8	6.8	23	1.1	0.9	19	0.9	0.7	29	1.3	1.1
Malignant neoplasm of trachea, bronchus and lung	162	24	14.6	10.1	122	5.6	4.8	152	6.8	6.0	143	6.3	5.6
Malignant neoplasm of female breast	174	13	7.9	6.7	77	3.5	3.3	52	2.3	2.1	60	2.6	2.5
Malignant neoplasm of cervix uteri	180	9	5.5	3.9	73	3.3	3.1	81	3.6	3.4	74	3.3	3.0
Leukemia	204-208	4	2.4	2.0	74	3.4	3.2	62	2.8	2.6	78	3.4	3.3
Malignant neoplasm of other and unspecified sites	rest of 140-208	101	61.6	41.4	563	25.8	22.6	603	27.1	23.7	645	28.4	24.6
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	2	1.2	0.9	81	3.7	3.4	76	3.4	3.0	79	3.5	3.1
Diabetes mellitus	250	13	7.9	5.3	215	9.9	8.4	206	9.3	7.9	152	6.7	5.8
Kwashiorkor	260	-	-	-	3	0.1	0.1	5	0.2	0.2	8	0.4	0.4
Nutritional marasmus	261	1	0.6	0.3	1	0.0	0.1	3	0.1	0.1	1	0.0	0.0
Other protein-calorie malnutrition	262,263	-	-	-	52	2.4	2.6	74	3.3	3.6	71	3.1	3.4
Avitaminosis	264-269	-	-	-	1	0.0	0.0	2	0.1	0.1	-	-	-
Other endocrine and metabolic diseases	rest of 240-279	9	5.5	3.7	60	2.8	2.7	72	3.2	3.1	65	2.9	2.7
Anemias	280-285	2	1.2	1.1	77	3.5	3.3	74	3.3	3.1	55	2.4	2.2
Other diseases of blood and blood-forming organs	286-289	1	0.6	0.3	4	0.2	0.2	8	0.4	0.3	6	0.3	0.2
Mental disorders	290-319	7	4.3	3.5	26	1.2	1.1	24	1.1	1.0	33	1.5	1.3
Meningitis	320-322	3	1.8	2.4	47	2.2	2.2	44	2.0	2.1	55	2.4	2.6
Other diseases of nervous system and sense organs	323-389	6	3.7	2.8	134	6.1	6.0	124	5.6	5.4	93	4.1	4.0
Acute rheumatic fever	390-392	-	-	-	2	0.1	0.1	2	0.1	0.1	3	0.1	0.1
Chronic rheumatic heart disease	393-398	1	0.6	0.3	35	1.6	1.5	26	1.2	1.1	22	1.0	0.9
Hypertensive disease	401-405	10	6.1	4.3	113	5.2	4.5	135	6.1	5.3	139	6.1	5.1
Acute myocardial infarction	410	53	32.3	21.0	582	26.7	22.7	660	29.6	25.0	641	28.2	24.0
Other ischemic heart disease	411-414	9	5.5	3.0	378	17.3	14.2	365	16.4	13.4	428	18.8	15.3
Diseases of pulmonary circulation and other heart disease	415-429	99	60.4	40.2	320	14.7	12.5	352	15.8	13.8	329	14.5	12.8
Cerebrovascular disease	430-438	93	56.7	35.3	822	37.7	31.7	880	39.5	33.2	874	38.4	32.3
Atherosclerosis	440	23	14.0	7.2	102	4.7	3.7	69	3.1	2.4	58	2.6	2.0
Other diseases of circulatory system	441-459	9	5.5	3.4	70	3.2	2.8	78	3.5	2.9	77	3.4	2.9
Pneumonia	480-486	21	12.8	6.8	275	12.6	11.9	289	13.0	12.4	331	14.6	13.8
Influenza	487	3	1.8	1.3	28	1.3	1.2	37	1.7	1.7	12	0.5	0.6
Bronchitis,emphysema and asthma	490-493	15	9.1	6.7	228	10.5	10.0	147	6.6	6.3	174	7.7	7.2
Other diseases of respiratory system	460-478 494-519	12	7.3	4.9	309	14.2	12.5	283	12.7	11.0	336	14.8	13.4
Ulcer of stomach and duodenum	531-533	2	1.2	1.1	29	1.3	1.2	35	1.6	1.3	36	1.6	1.5
Appendicitis	540-543	1	0.6	0.6	5	0.2	0.2	3	0.1	0.1	8	0.4	0.3
Intestinal obstruction and hernia	550-553	4	2.4	1.3	34	1.6	1.4	53	2.4	2.1	41	1.8	1.6
Chronic liver disease and cirrhosis	571	5	3.0	2.9	88	4.0	3.7	92	4.1	3.8	118	5.2	4.8
Other diseases of digestive system	rest of 520-579	19	11.6	8.3	186	8.5	7.5	187	8.4	7.5	171	7.5	6.7
Nephritis, nephrotic syndrome and nephrosis	580-589	6	3.7	2.5	108	5.0	4.6	105	4.7	4.3	111	4.9	4.5
Hyperplasia of prostate	600	-	-	-	9	0.4	0.4	10	0.4	0.4	13	0.6	0.4
Other diseases of genitourinary system	590-599 601-629	23	14.0	8.7	42	1.9	1.7	41	1.8	1.6	54	2.4	2.0
Abortion	630-639	-	-	-	6	0.3	0.2	5	0.2	0.2	5	0.2	0.2
Direct obstetric causes	640-646 651-676	1	0.6	0.6	27	1.2	1.2	29	1.3	1.2	16	0.7	0.6
Other obstetric causes	647,648,650	-	-	-	-	-	-	2	0.1	0.1	1	0.0	0.0
Congenital anomalies	740-759	14	8.5	10.9	257	11.8	13.7	206	9.3	11.0	213	9.4	11.4
Birth trauma	767	-	-	-	48	2.2	2.6	34	1.5	1.9	45	2.0	2.5
Other conditions originating in the perinatal period	760-766 768-779	69	42.1	54.4	524	24.0	28.5	488	21.9	26.7	478	21.0	26.2
Symptoms and ill-defined conditions	780-799	88	53.7	32.5	806	37.0	34.0	730	32.8	29.7	751	33.0	30.9
All other diseases	680-739	15	9.1	6.2	119	5.5	4.7	95	4.3	3.6	94	4.1	3.5
Motor vehicle traffic accidents	E810-E819	13	7.9	7.7	344	15.8	14.9	368	16.5	15.5	388	17.1	15.9
Accidental falls	E880-E888	6	3.7	2.8	58	2.7	2.4	67	3.0	2.6	63	2.8	2.5
All other accidents rest of	E800-E949	13	7.9	7.6	377	17.3	16.5	344	15.4	15.2	329	14.5	14.6
Suicide	E950-E959	5	3.0	2.7	56	2.6	2.4	83	3.7	3.4	86	3.8	3.4
Homicide	E960-E969	4	2.4	2.1	115	5.3	4.8	123	5.5	5.2	156	6.9	6.4
Injury unknown whether accidentally or purposely inflicted	E980-E989	4	2.4	2.3	117	5.4	5.1	96	4.3	3.9	121	5.3	4.9
Injury from operations of war and legal intervention	E970-E978,E990-E999	-	-	-	5	0.2	0.2	7	0.3	0.3	14	0.6	0.5

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	PARAGUAY (AREA OF INFORMATION) 1985 Number	1985 Crude rate	1985 Age-adj. rate	1986 Number	1986 Crude rate	1986 Age-adj. rate	PERU 1983 Number	1983 Crude rate	1983 Age-adj. rate	PUERTO RICO 1984 Number	1984 Crude rate	1984 Age-adj. rate
All causes	13478	610.2	671.7	12695	558.5	598.3	93290	498.7	474.0	21732	639.6	377.8
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	1	0.0	0.0	1	0.0	0.0	626	3.3	3.3	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9 003,005	5	0.2	0.2	4	0.2	0.2	450	2.4	2.3	2	0.1	0.1
Shigellosis and amebiasis 004,006	6	0.3	0.3	3	0.1	0.2	94	0.5	0.5	-	-	-
Other intestinal infections 007-009	686	31.1	36.7	773	34.0	39.7	9131	48.8	44.3	1	0.0	0.1
Tuberculosis of respiratory system 010-012	203	9.2	9.8	189	8.3	8.9	3508	18.8	18.4	97	2.9	1.5
Other tuberculosis 013-018	9	0.4	0.5	9	0.4	0.4	446	2.4	2.4	6	0.2	0.1
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	7	0.3	0.3	9	0.4	0.4	22	0.1	0.1	-	-	-
Whooping cough 033	3	0.1	0.2	-	-	-	458	2.4	2.2	-	-	-
Meningococcal infection 036	1	0.0	0.0	2	0.1	0.1	13	0.1	0.1	3	0.1	0.1
Tetanus 037	94	4.3	5.4	67	2.9	3.7	86	0.5	0.4	7	0.2	0.1
Septicemia 038	210	9.5	11.1	229	10.1	11.6	2561	13.7	12.6	185	5.4	3.4
Acute poliomyelitis 045	2	0.1	0.1	-	-	-	25	0.1	0.1	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	24	1.1	1.1	21	0.9	1.0	833	4.5	4.2	-	-	-
Yellow fever 060	-	-	-	-	-	-	18	0.1	0.1	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	4	0.2	0.2	7	0.3	0.3	128	0.7	0.6	17	0.5	0.4
Rabies 071	4	0.2	0.2	3	0.1	0.1	21	0.1	0.1	-	-	-
Malaria 084	3	0.1	0.1	3	0.1	0.2	12	0.1	0.1	-	-	-
Trypanosomiasis 086	3	0.1	0.1	10	0.4	0.5	-	-	-	-	-	-
Syphilis 090-097	17	0.8	1.0	16	0.7	0.9	29	0.2	0.1	1	0.0	0.0
All other infectious and parasitic diseases rest of 001-139	38	1.7	1.7	34	1.5	1.6	446	2.4	2.3	40	1.2	0.9
Malignant neoplasm of stomach 151	94	4.3	4.5	119	5.2	5.4	1217	6.5	6.6	322	9.5	4.9
Malignant neoplasm of colon 153	48	2.2	2.3	42	1.8	1.9	124	0.7	0.7	259	7.6	4.1
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	11	0.5	0.5	16	0.7	0.7	82	0.4	0.4	37	1.1	0.6
Malignant neoplasm of trachea, bronchus and lung 162	82	3.7	3.9	90	4.0	4.2	404	2.2	2.1	407	12.0	6.4
Malignant neoplasm of female breast 174	70	3.2	3.4	65	2.9	3.0	267	1.4	1.5	239	7.0	4.4
Malignant neoplasm of cervix uteri 180	60	2.7	2.9	75	3.3	3.5	382	2.0	2.1	68	2.0	1.3
Leukemia 204-208	66	3.0	3.0	75	3.3	3.3	273	1.5	1.4	134	3.9	2.7
Malignant neoplasm of other and unspecified sites rest of 140-208	557	25.2	26.7	615	27.1	28.0	2914	15.6	15.7	2126	62.6	33.1
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	20	0.9	1.0	25	1.1	1.2	630	3.4	3.4	50	1.5	1.0
Diabetes mellitus 250	253	11.5	12.2	281	12.4	12.6	569	3.0	3.1	1112	32.7	16.0
Kwashiorkor 260	3	0.1	0.1	3	0.1	0.1	62	0.3	0.3	-	-	-
Nutritional marasmus 261	8	0.4	0.4	13	0.6	0.7	62	0.3	0.3	-	-	-
Other protein-calorie malnutrition 262,263	136	6.2	7.4	113	5.0	5.9	2135	11.4	10.6	13	0.4	0.2
Avitaminosis 264-269	4	0.2	0.2	1	0.0	0.0	88	0.5	0.4	1	0.0	0.0
Other endocrine and metabolic diseases rest of 240-279	244	11.0	13.0	191	8.4	9.5	2661	14.2	13.3	169	5.0	3.4
Anemias 280-285	77	3.5	3.6	78	3.4	3.5	752	4.0	4.0	35	1.0	0.6
Other diseases of blood and blood-forming organs 286-289	9	0.4	0.5	10	0.4	0.5	63	0.3	0.3	29	0.9	0.6
Mental disorders 290-319	49	2.2	2.2	44	1.9	2.1	372	2.0	2.0	128	3.8	2.2
Meningitis 320-322	118	5.3	6.4	104	4.6	5.4	418	2.2	2.0	57	1.7	1.6
Other diseases of nervous system and sense organs 323-389	127	5.7	6.1	97	4.3	4.3	1719	9.2	8.7	263	7.7	5.5
Acute rheumatic fever 390-392	2	0.1	0.1	-	-	-	59	0.3	0.3	19	0.6	0.4
Chronic rheumatic heart disease 393-398	20	0.9	1.0	21	0.9	0.9	94	0.5	0.5	11	0.3	0.2
Hypertensive disease 401-405	212	9.6	10.1	172	7.6	7.6	654	3.5	3.6	833	24.5	12.1
Acute myocardial infarction 410	703	31.8	33.9	713	31.4	33.0	1788	9.6	9.8	1596	47.0	24.2
Other ischemic heart disease 411-414	105	4.8	5.1	117	5.1	5.4	544	2.9	3.0	1585	46.6	21.0
Diseases of pulmonary circulation and other heart disease 415-429	1128	51.1	54.4	1129	49.7	50.3	3556	19.0	19.3	1958	57.6	28.4
Cerebrovascular disease 430-438	1247	56.5	59.8	1330	58.5	60.6	2459	13.1	13.4	1384	40.7	18.9
Atherosclerosis 440	108	4.9	5.4	59	2.6	2.7	1705	9.1	9.8	822	24.2	9.8
Other diseases of circulatory system 441-459	36	1.6	1.7	40	1.8	1.9	303	1.6	1.6	164	4.8	2.7
Pneumonia 480-486	667	30.2	35.5	602	26.5	30.1	14652	78.3	73.8	1224	36.0	19.4
Influenza 487	50	2.3	2.6	32	1.4	1.5	473	2.5	2.3	3	0.1	0.0
Bronchitis,emphysema and asthma 490-493	141	6.4	7.0	141	6.2	6.7	2918	15.6	14.4	296	8.7	4.6
Other diseases of respiratory system 460-478	236	10.7	12.0	212	9.3	10.4	2720	14.5	13.8	1016	29.9	15.4
Ulcer of stomach and duodenum 494-519	45	2.0	2.1	28	1.2	1.3	291	1.6	1.6	66	1.9	1.0
Appendicitis 531-533	14	0.6	0.6	14	0.6	0.6	186	1.0	0.9	6	0.2	0.2
Intestinal obstruction and hernia 540-543	101	4.6	4.9	76	3.3	3.5	1043	5.6	5.5	60	1.8	1.1
Chronic liver disease and cirrhosis 550-553 560	97	4.4	4.7	83	3.7	4.0	1210	6.5	6.5	775	22.8	14.8
Other diseases of digestive system rest of 520-579	235	10.6	11.2	207	9.1	9.2	1932	10.3	10.1	528	15.5	9.2
Nephritis, nephrotic syndrome and nephrosis 580-589	219	9.9	10.7	175	7.7	7.9	1095	5.9	5.9	384	11.3	5.9
Hyperplasia of prostate 600	16	0.7	0.8	17	0.7	0.7	131	0.7	0.7	6	0.2	0.1
Other diseases of genitourinary system 590-599 601-629	87	3.9	4.2	84	3.7	3.7	962	5.1	5.1	214	6.3	3.0
Abortion 630-639	28	1.3	1.2	19	0.8	0.8	68	0.4	0.3	-	-	-
Direct obstetric causes 640-646 651-676	107	4.8	4.7	115	5.1	4.7	538	2.9	2.7	6	0.2	0.2
Other obstetric causes 647,648,650	11	0.5	0.5	6	0.3	0.2	5	0.0	0.0	-	-	-
Congenital anomalies 740-759	169	7.7	9.6	184	8.1	9.7	634	3.4	2.9	197	5.8	9.1
Birth trauma 767	31	1.4	1.9	27	1.2	1.6	67	0.4	0.3	21	0.6	1.0
Other conditions originating in the perinatal period 760-766 768-779	509	23.0	31.1	503	22.1	29.6	6208	33.2	28.4	570	16.8	28.4
Symptoms and ill-defined conditions 780-799	2845	128.8	141.1	2193	96.5	101.9	6542	35.0	31.5	209	6.2	4.1
All other diseases 680-739	54	2.4	2.7	44	1.9	2.1	618	3.3	3.4	75	2.2	1.3
Motor vehicle traffic accidents E810-E819	206	9.3	9.5	241	10.6	10.5	1253	6.7	6.6	559	16.5	13.8
Accidental falls E880-E888	48	2.2	2.4	66	2.9	3.1	75	0.4	0.4	119	3.5	2.1
All other accidents rest of E800-E949	366	16.6	17.2	361	15.9	16.0	3199	17.1	16.4	280	8.2	7.9
Suicide E950-E959	64	2.9	2.9	57	2.5	2.4	99	0.5	0.5	300	8.8	6.8
Homicide E960-E969	182	8.2	8.3	155	6.7	6.5	407	2.2	2.0	479	14.1	12.4
Injury unknown whether accidentally or purposely inflicted E980-E989	33	1.5	1.4	37	1.6	1.5	689	3.7	3.5	157	4.6	3.6
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	-	-	-	12	0.1	0.1	2	0.1	0.0

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	PUERTO RICO									ST. KITTS AND NEVIS		
	1985			1986			1987			1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	23192	672.0	392.7	23386	667.8	392.4	23950	673.9	396.2	461	1044.5	...
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9	1	0.0	0.0	2	0.1	0.0	3	0.1	0.0	1	2.2	...
Shigellosis and amebiasis 003,005	-	-	-	-	-	-	-	-	-	-	-	-
Other intestinal infections 004,006	1	0.0	0.0	1	0.0	0.0	1	0.0	0.0	3	6.5	...
Tuberculosis of respiratory system 007-009	73	2.1	1.2	64	1.8	1.0	61	1.7	1.1	4	8.7	...
Other tuberculosis 010-012	6	0.2	0.1	7	0.2	0.1	4	0.1	0.1	-	-	-
Plague 013-018	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 020	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 032	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection 033	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus 036	1	0.0	0.1	1	0.0	0.0	4	0.1	0.1	-	-	-
Septicemia 037	7	0.2	0.1	4	0.1	0.1	6	0.2	0.1	1	2.2	...
Acute poliomyelitis 038	245	7.1	3.9	259	7.4	4.1	293	8.2	4.8	4	8.7	...
Smallpox 045	-	-	-	1	0.0	0.0	1	0.0	0.0	-	-	-
Measles 050	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever 055	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 060	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Rabies 070	15	0.4	0.3	13	0.4	0.3	9	0.3	0.2	1	2.2	...
Malaria 071	-	-	-	-	-	-	-	-	-	-	-	-
Trypanosomiasis 084	-	-	-	-	-	-	1	0.0	0.0	-	-	-
Syphilis 086	-	-	-	-	-	-	-	-	-	-	-	-
All other infectious and parasitic diseases 090-097, rest of 001-139	2	0.1	0.1	5	0.1	0.1	-	-	-	-	-	-
Malignant neoplasm of stomach 151	24	0.7	0.5	49	1.4	1.1	47	1.3	1.0	2	4.3	...
Malignant neoplasm of colon 153	338	9.8	4.8	346	9.9	5.0	334	9.4	4.6	12	26.1	...
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	232	6.7	3.4	271	7.7	4.1	258	7.3	3.7	4	8.7	...
Malignant neoplasm of trachea, bronchus and lung 162	50	1.4	0.7	51	1.5	0.8	53	1.5	0.8	1	2.2	...
Malignant neoplasm of female breast 174	433	12.5	6.6	474	13.5	7.0	429	12.1	6.2	3	6.5	...
Malignant neoplasm of cervix uteri 180	223	6.5	4.3	225	6.4	4.1	261	7.3	4.7	7	15.2	...
Leukemia 204-208	54	1.6	1.0	67	1.9	1.3	43	1.2	0.7	8	17.4	...
Malignant neoplasm of other and unspecified sites 140-208, rest of	153	4.4	3.2	151	4.3	2.7	133	3.7	2.6	-	-	-
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	2178	63.1	33.0	2206	63.0	33.6	2182	61.4	32.0	17	36.9	...
Diabetes mellitus 250	51	1.5	0.8	69	2.0	1.1	62	1.7	1.0	1	2.2	...
Kwashiorkor 260	1150	33.3	16.2	1149	32.8	16.1	1108	31.2	15.4	12	26.1	...
Nutritional marasmus 261	-	-	-	-	-	-	-	-	-	-	-	-
Other protein-calorie malnutrition 262,263	-	-	-	-	-	-	1	0.0	0.0	-	-	-
Avitaminosis 264-269	19	0.6	0.3	12	0.3	0.2	23	0.6	0.4	9	19.5	...
Other endocrine and metabolic diseases 240-279, rest of	-	-	-	-	-	-	-	-	-	1	2.2	...
Anemias 280-285	213	6.2	4.5	248	7.1	5.5	627	17.6	14.3	2	4.3	...
Other diseases of blood and blood-forming organs 286-289	43	1.2	0.8	42	1.2	0.7	65	1.8	1.0	1	2.2	...
Mental disorders 290-319	39	1.1	1.0	31	0.9	0.7	47	1.3	0.9	-	-	-
Meningitis 320-322	151	4.4	2.7	164	4.7	3.0	179	5.0	3.2	6	13.0	...
Other diseases of nervous system and sense organs 323-389	40	1.2	1.2	50	1.4	1.7	38	1.1	1.1	1	2.2	...
Acute rheumatic fever 390-392	294	8.5	6.3	306	8.7	6.3	328	9.2	6.8	5	10.9	...
Chronic rheumatic heart disease 393-398	12	0.3	0.3	16	0.5	0.3	10	0.3	0.2	-	-	-
Hypertensive disease 401-405	9	0.3	0.2	7	0.2	0.2	8	0.2	0.2	-	-	-
Acute myocardial infarction 410	817	23.7	12.0	880	25.1	12.7	851	23.9	12.0	22	47.8	...
Other ischemic heart disease 411-414	1776	51.5	25.6	1448	41.3	20.2	1603	45.1	21.8	20	43.4	...
Diseases of pulmonary circulation and other heart disease 415-429	1745	50.6	23.0	2110	60.2	28.5	2551	71.8	33.9	15	32.6	...
Cerebrovascular disease 430-438	2215	64.2	31.0	2151	61.4	29.8	2102	59.1	28.9	62	134.6	...
Atherosclerosis 440	1492	43.2	19.5	1355	38.1	17.5	1358	38.2	17.7	80	173.7	...
Other diseases of circulatory system 441-459	817	23.7	9.7	704	20.1	8.3	689	19.4	8.0	9	19.5	...
Pneumonia 480-486	174	5.0	2.7	159	4.5	2.4	178	5.0	2.7	3	6.5	...
Influenza 487	1369	39.7	21.4	1484	42.4	23.7	1295	36.4	19.8	15	32.6	...
Bronchitis,emphysema and asthma 490-493	6	0.2	0.1	7	0.2	0.1	2	0.1	0.1	-	-	-
Other diseases of respiratory system 460-478, 494-519	321	9.3	4.6	296	8.5	4.3	271	7.6	4.0	4	8.7	...
Ulcer of stomach and duodenum 531-533	1017	29.5	14.5	956	27.3	13.8	1011	28.4	14.5	6	13.0	...
Appendicitis 540-543	91	2.6	1.3	91	2.6	1.4	84	2.4	1.2	-	-	-
Intestinal obstruction and hernia 550-553, 560	9	0.3	0.2	4	0.1	0.1	10	0.3	0.2	-	-	-
Chronic liver disease and cirrhosis 571	57	1.7	0.9	52	1.5	0.8	57	1.6	0.9	1	2.2	...
Other diseases of digestive system 520-579, rest of	769	22.3	14.2	820	23.4	15.3	765	21.5	14.2	3	6.5	...
Nephritis, nephrotic syndrome and nephrosis 580-589	529	15.3	8.9	572	16.3	9.6	590	16.6	9.9	10	21.7	...
Hyperplasia of prostate 600	468	13.6	7.0	468	13.4	6.8	413	11.6	5.7	13	28.2	...
Other diseases of genitourinary system 590-599, 601-629	3	0.1	0.0	4	0.1	0.1	3	0.1	0.0	...	...	...
Abortion 630-639	270	7.8	3.7	314	9.0	4.4	310	8.7	4.1	4	8.7	...
Direct obstetric causes 640-646, 651-676	1	0.0	0.0	2	0.1	0.0	-	-	-	-	-	-
Other obstetric causes 647,648,650	7	0.2	0.2	8	0.2	0.2	11	0.3	0.3	1	2.2	...
Congenital anomalies 740-759	-	-	-	-	-	-	-	-	-	-	-	-
Birth trauma 767	202	5.9	9.0	192	5.5	8.8	215	6.0	9.7	3	6.5	...
Other conditions originating in the perinatal period 760-766, 768-779	14	0.4	0.7	14	0.4	0.7	9	0.3	0.4	1	2.2	...
Symptoms and ill-defined conditions 780-799	583	16.9	28.9	500	14.3	24.7	506	14.2	24.8	19	41.3	...
All other diseases 680-739	184	5.3	3.1	165	4.7	3.1	177	5.0	2.8	65	141.2	...
Motor vehicle traffic accidents E810-E819	75	2.2	1.2	99	2.8	1.5	103	2.9	1.5	5	10.9	...
Accidental falls E880-E888	593	17.2	14.9	618	17.6	14.9	652	18.3	15.4	1	2.2	...
All other accidents rest of E800-E949	137	4.0	2.2	152	4.3	2.4	136	3.8	2.2	2	4.3	...
Suicide E950-E959	397	11.5	10.6	326	9.3	8.0	385	10.8	9.3	9	19.5	...
Homicide E960-E969	269	7.8	5.9	310	8.9	6.7	272	7.7	5.8	-	-	-
Injury unknown whether accidentally or purposely inflicted E980-E989	579	16.8	14.8	723	20.6	17.7	505	14.2	12.4	-	-	-
Injury from operations of war and legal intervention E970-E978,E990-E999	149	4.3	3.4	131	3.7	2.7	217	6.1	4.9	1	2.2	...
	-	-	-	-	-	-	-	-	-	-	-	-

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	ST. KITTS AND NEVIS			SAINT LUCIA								
	1985			1982			1983			1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	441	957.2	...	845	673.4	...	795	608.2	492.1	736	541.0	431.8
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9,003,005	-	-	-	-	-	-	-	-	-	-	-	-
Shigellosis and amebiasis 004,006	-	-	-	1	0.8	...	1	0.8	0.7	-	-	-
Other intestinal infections 007-009	5	10.9	...	11	8.8	...	6	4.6	4.1	9	6.6	5.3
Tuberculosis of respiratory system 010-012	3	6.5	...	...	...	...	7	5.4	4.5	3	2.2	2.4
Other tuberculosis 013-018	-	-	-	...	...	...	-	-	-	-	-	-
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 033	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection 036	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus 037	1	2.2	...	1	0.8	...	3	2.3	1.7	1	0.7	0.5
Septicemia 038	10	21.7	...	9	7.2	...	7	5.4	3.9	11	8.1	5.9
Acute poliomyelitis 045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	1	0.8	...	-	-	-	-	-	-
Viral hepatitis 070	1	2.2	...	-	-	-	-	-	-	-	-	-
Rabies 071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 084	-	-	-	-	-	-	-	-	-	-	-	-
Trypanosomiasis 086	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis 090-097	1	2.2	...	1	0.8	...	1	0.8	0.8	1	0.7	0.8
All other infectious and parasitic diseases rest of 001-139	1	2.2	...	4	3.2	...	5	3.8	4.2	1	0.7	0.4
Malignant neoplasm of stomach 151	5	10.9	...	13	10.4	...	10	7.6	6.1	13	9.6	6.5
Malignant neoplasm of colon 153	1	2.2	...	3	2.4	...	6	4.6	3.6	5	3.7	2.5
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	1	2.2	...	1	0.8	...	2	1.5	0.9	-	-	-
Malignant neoplasm of trachea, bronchus and lung 162	2	4.3	...	...	...	...	5	3.8	3.1	8	5.9	4.5
Malignant neoplasm of female breast 174	4	8.7	...	...	...	...	7	5.4	4.8	6	4.4	4.1
Malignant neoplasm of cervix uteri 180	3	6.5	...	10	8.0	...	8	6.1	5.7	10	7.4	7.4
Leukemia 204-208	-	-	-	1	0.8	...	3	2.3	2.0	2	1.5	1.4
Malignant neoplasm of other and unspecified sites rest of 140-208	26	56.4	...	49	39.0	...	56	42.8	34.4	55	40.4	28.3
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	-	-	-	3	2.4	...	3	2.3	2.0	4	2.9	2.0
Diabetes mellitus 250	9	19.5	...	36	28.7	...	40	30.6	24.0	28	20.6	15.2
Kwashiorkor 260	1	2.2	...	-	-	-	-	-	-	-	-	-
Nutritional marasmus 261	-	-	-	-	-	-	-	-	-	-	-	-
Other protein-calorie malnutrition 262,263	6	13.0	...	12	9.6	...	10	7.6	5.9	2	1.5	0.9
Avitaminosis 264-269	1	2.2	...	-	-	-	-	-	-	-	-	-
Other endocrine and metabolic diseases rest of 240-279	1	2.2	...	3	2.4	...	3	2.3	1.7	6	4.4	3.8
Anemias 280-285	1	2.2	...	7	5.6	...	4	3.1	2.3	5	3.7	3.5
Other diseases of blood and blood-forming organs 286-289	-	-	-	1	0.8	...	1	0.8	0.5	-	-	-
Mental disorders 290-319	11	23.9	...	9	7.2	...	4	3.1	3.4	11	8.1	8.0
Meningitis 320-322	-	-	-	4	3.2	...	4	3.1	2.7	4	2.9	3.1
Other diseases of nervous system and sense organs 323-389	5	10.9	...	17	13.5	...	14	10.7	8.0	5	3.7	3.6
Acute rheumatic fever 390-392	-	-	-	1	0.8	...	-	-	-	-	-	-
Chronic rheumatic heart disease 393-398	1	2.2	...	2	1.6	...	2	1.5	1.3	5	3.7	3.1
Hypertensive disease 401-405	10	21.7	...	57	45.4	...	43	32.9	22.0	34	25.0	18.4
Acute myocardial infarction 410	14	30.4	...	21	16.7	...	18	13.8	11.1	21	15.4	10.9
Other ischemic heart disease 411-414	14	30.4	...	4	3.2	...	11	8.4	6.7	8	5.9	3.7
Diseases of pulmonary circulation and other heart disease 415-429	54	117.2	...	119	94.8	...	94	71.9	50.8	90	66.2	50.9
Cerebrovascular disease 430-438	97	210.5	...	64	51.0	...	86	65.8	46.1	92	67.6	49.3
Atherosclerosis 440	4	8.7	...	5	4.0	...	4	3.1	2.1	3	2.2	1.3
Other diseases of circulatory system 441-459	1	2.2	...	7	5.6	...	3	2.3	2.5	7	5.1	4.2
Pneumonia 480-486	22	47.8	...	40	31.9	...	33	25.2	21.7	27	19.8	15.7
Influenza 487	1	2.2	...	-	-	-	-	-	-	-	-	-
Bronchitis,emphysema and asthma 490-493	6	13.0	...	13	10.4	...	16	12.2	9.6	8	5.9	6.3
Other diseases of respiratory system 460-478,494-519	7	15.2	...	8	6.4	...	5	3.8	3.3	12	8.8	7.9
Ulcer of stomach and duodenum 531-533	-	-	-	2	1.6	...	6	4.6	3.6	4	2.9	2.6
Appendicitis 540-543	-	-	-	-	-	-	2	1.5	1.5	-	-	-
Intestinal obstruction and hernia 550-553,560	1	2.2	...	2	1.6	...	1	0.8	0.9	1	0.7	0.4
Chronic liver disease and cirrhosis 571	4	8.7	...	26	20.7	...	20	15.3	15.4	7	5.1	4.3
Other diseases of digestive system rest of 520-579	6	13.0	...	7	5.6	...	7	5.4	5.6	7	5.1	4.4
Nephritis, nephrotic syndrome and nephrosis 580-589	9	19.5	...	10	8.0	...	10	7.6	7.0	16	11.8	9.2
Hyperplasia of prostate 600	-	-	-	1	0.8	...	2	1.5	0.9	3	2.2	1.5
Other diseases of genitourinary system 590-599,601-629	4	8.7	...	3	2.4	...	1	0.8	0.5	4	2.9	2.2
Abortion 630-639	1	2.2	...	-	-	-	-	-	-	-	-	-
Direct obstetric causes 640-646,651-676	2	4.3	...	-	-	-	1	0.8	0.6	-	-	-
Other obstetric causes 647,648,650	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies 740-759	5	10.9	...	15	12.0	...	12	9.2	9.6	9	6.6	7.0
Birth trauma 767	2	4.3	...	1	0.8	...	1	0.8	0.8	1	0.7	0.8
Other conditions originating in the perinatal period 760-766,768-779	15	32.6	...	54	43.0	...	61	46.7	48.9	46	33.8	35.2
Symptoms and ill-defined conditions 780-799	45	97.7	...	117	93.2	...	81	62.0	43.1	76	55.9	39.1
All other diseases 680-739	4	8.7	...	8	6.4	...	17	13.0	8.3	12	8.8	6.8
Motor vehicle traffic accidents E810-E819	5	10.9	...	10	8.0	...	11	8.4	9.4	22	16.2	15.3
Accidental falls E880-E888	1	2.2	...	6	4.8	...	2	1.5	1.3	2	1.5	0.9
All other accidents rest of E800-E949	5	10.9	...	16	12.8	...	17	13.0	11.8	20	14.7	14.3
Suicide E950-E959	1	2.2	...	1	0.8	...	9	6.9	7.7	4	2.9	2.4
Homicide E960-E969	1	2.2	...	2	1.6	...	5	3.8	3.8	3	2.2	1.9
Injury unknown whether accidentally or purposely inflicted E980-E989	-	-	-	2	1.6	...	2	1.5	1.5	1	0.7	0.7
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	-	-	-	2	1.5	1.9	1	0.7	0.8

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	SAINT LUCIA											
	1985			1986			1987			1988		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	816	637.5	517.2	847	656.4	532.0	925	706.1	568.7	885	665.3	533.7
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9	-	-	-	-	-	-	-	-	-	-	-	-
Shigellosis and amebiasis 003,005	-	-	-	-	-	-	-	-	-	-	-	-
Other intestinal infections 004,006	2	1.6	1.8	-	-	-	-	-	-	-	-	-
Tuberculosis of respiratory system 007-009	17	13.3	11.1	14	10.9	10.4	15	11.4	10.0	8	6.0	6.4
Other tuberculosis 010-012	5	3.9	3.7	5	3.9	2.7	5	3.8	3.4	8	6.0	5.8
Plague 013-018	-	-	-	-	-	-	-	-	-	1	0.8	0.7
Diphtheria 020	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 032	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection 033	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus 036	-	-	-	-	-	-	-	-	-	-	-	-
Septicemia 037	2	1.6	1.6	1	0.8	0.5	-	-	-	-	-	-
Acute poliomyelitis 038	15	11.7	8.3	16	12.4	9.8	25	19.1	13.9	20	15.0	12.0
Smallpox 045	-	-	-	-	-	-	-	-	-	-	-	-
Measles 050	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever 055	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 060	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Rabies 070	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 071	-	-	-	-	-	-	-	-	-	-	-	-
Trypanosomiasis 084	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis 086	-	-	-	-	-	-	-	-	-	-	-	-
All other infectious and parasitic diseases 090-097, rest of 001-139	-	-	-	-	-	-	1	0.8	0.8	-	-	-
Malignant neoplasm of stomach 151	13	10.2	8.7	4	3.1	3.2	1	0.8	0.5	1	0.8	0.8
Malignant neoplasm of colon 153	6	4.7	3.7	8	6.2	4.8	13	9.9	8.0	15	11.3	8.0
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	4	3.1	2.2	1	0.8	0.8	5	3.8	2.7	2	1.5	1.2
Malignant neoplasm of trachea, bronchus and lung 162	12	9.4	8.6	4	3.1	3.0	1	0.8	0.5	1	0.8	0.7
Malignant neoplasm of female breast 174	11	8.6	7.3	2	1.6	1.0	10	7.6	6.8	5	3.8	2.6
Malignant neoplasm of cervix uteri 180	7	5.5	4.9	6	4.7	3.4	6	4.6	4.7	11	8.3	7.3
Leukemia 204-208	2	1.6	1.5	5	3.9	4.1	7	5.3	5.0	4	3.0	2.3
Malignant neoplasm of other and unspecified sites 140-208, rest of	50	39.1	33.6	4	3.1	3.2	1	0.8	0.6	1	0.8	0.7
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	4	3.1	3.1	57	44.2	35.8	67	51.1	38.5	65	48.9	39.7
Diabetes mellitus 250	22	17.2	12.7	3	2.3	2.7	3	2.3	2.2	3	2.3	2.3
Kwashiorkor 260	-	-	-	14	10.9	8.1	27	20.6	15.4	39	29.3	22.5
Nutritional marasmus 261	-	-	-	-	-	-	-	-	-	-	-	-
Other protein-calorie malnutrition 262,263	3	2.3	1.7	-	-	-	-	-	-	-	-	-
Avitaminosis 264-269	-	-	-	-	-	-	6	4.6	3.7	4	3.0	2.2
Other endocrine and metabolic diseases 240-279, rest of	3	2.3	1.8	10	7.8	7.6	7	5.3	5.7	7	5.3	4.3
Anemias 280-285	6	4.7	4.1	2	1.6	1.5	3	2.3	1.6	9	6.8	6.1
Other diseases of blood and blood-forming organs 286-289	-	-	-	1	0.8	0.8	1	0.8	0.9	1	0.8	0.7
Mental disorders 290-319	7	5.5	4.3	10	7.8	7.1	9	6.9	7.4	9	6.8	5.9
Meningitis 320-322	7	5.5	4.8	5	3.9	3.9	3	2.3	2.5	5	3.8	3.9
Other diseases of nervous system and sense organs 323-389	7	5.5	4.4	15	11.6	10.4	17	13.0	12.9	14	10.5	8.6
Acute rheumatic fever 390-392	-	-	-	-	-	-	-	-	-	1	0.8	0.8
Chronic rheumatic heart disease 393-398	1	0.8	1.0	4	3.1	2.8	3	2.3	1.6	1	0.8	0.5
Hypertensive disease 401-405	38	29.7	21.6	37	28.7	21.2	46	35.1	26.6	43	32.3	23.4
Acute myocardial infarction 410	30	23.4	21.0	44	34.1	25.9	42	32.1	24.6	34	25.6	21.0
Other ischemic heart disease 411-414	5	3.9	3.5	4	3.1	2.0	5	3.8	2.6	17	12.8	10.3
Diseases of pulmonary circulation and other heart disease 415-429	114	89.1	68.2	138	107.0	75.3	149	113.7	80.7	116	87.2	63.7
Cerebrovascular disease 430-438	81	63.3	44.7	91	70.5	54.7	111	84.7	62.3	120	90.2	63.9
Atherosclerosis 440	3	2.3	1.7	2	1.6	1.0	5	3.8	2.3	-	-	-
Other diseases of circulatory system 441-459	11	8.6	8.1	2	1.6	1.5	7	5.3	4.8	2	1.5	0.9
Pneumonia 480-486	18	14.1	10.6	32	24.8	21.2	33	25.2	19.7	37	27.8	23.1
Influenza 487	-	-	-	-	-	-	1	0.8	0.9	-	-	-
Bronchitis,emphysema and asthma 490-493	10	7.8	6.2	14	10.9	8.7	14	10.7	9.7	14	10.5	7.9
Other diseases of respiratory system 460-478, 494-519	17	13.3	11.1	21	16.3	13.8	7	5.3	4.6	18	13.5	11.6
Ulcer of stomach and duodenum 531-533	2	1.6	1.4	3	2.3	2.1	2	1.5	1.5	3	2.3	1.8
Appendicitis 540-543	-	-	-	-	-	-	1	0.8	0.6	-	-	-
Intestinal obstruction and hernia 550-553, 560	-	-	-	3	2.3	1.6	1	0.8	0.6	-	-	-
Chronic liver disease and cirrhosis 571	14	10.9	11.2	16	12.4	11.9	18	13.7	14.2	15	11.3	11.8
Other diseases of digestive system 520-579, rest of	11	8.6	7.4	15	11.6	10.4	14	10.7	8.9	11	8.3	8.3
Nephritis, nephrotic syndrome and nephrosis 580-589	19	14.8	12.3	14	10.9	8.7	14	10.7	9.5	22	16.5	12.9
Hyperplasia of prostate 600	1	0.8	0.5	2	1.6	1.0	-	-	-	-	-	-
Other diseases of genitourinary system 590-599, 601-629	4	3.1	1.9	2	1.6	1.0	2	1.5	1.0	2	1.5	1.2
Abortion 630-639	-	-	-	-	-	-	-	-	-	-	-	-
Direct obstetric causes 640-646, 651-676	-	-	-	1	0.8	0.6	1	0.8	0.6	-	-	-
Other obstetric causes 647,648,650	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies 740-759	17	13.3	12.7	5	3.9	3.9	7	5.3	5.8	4	3.0	3.5
Birth trauma 767	-	-	-	-	-	-	-	-	-	1	0.8	0.9
Other conditions originating in the perinatal period 760-766, 768-779	55	43.0	40.4	50	38.8	39.4	48	36.6	39.5	30	22.6	26.4
Symptoms and ill-defined conditions 780-799	96	75.0	49.9	93	72.1	48.8	88	67.2	45.6	93	69.9	45.3
All other diseases 680-739	7	5.5	4.7	7	5.4	3.5	4	3.1	2.6	9	6.8	5.3
Motor vehicle traffic accidents E810-E819	23	18.0	17.4	31	24.0	23.8	20	15.3	15.4	21	15.8	15.9
Accidental falls E880-E888	-	-	-	3	2.3	2.7	5	3.8	4.3	4	3.0	3.3
All other accidents, rest of E800-E949	21	16.4	15.2	14	10.9	10.6	25	19.1	17.5	10	7.5	7.5
Suicide E950-E959	3	2.3	2.8	5	3.9	4.6	11	8.4	7.5	10	7.5	7.0
Homicide E960-E969	8	6.2	6.7	5	3.9	3.0	3	2.3	2.4	11	8.3	7.8
Injury unknown whether accidentally or purposely inflicted E980-E989	-	-	-	2	1.6	1.3	2	1.5	1.5	2	1.5	1.6
Injury from operations of war and legal intervention E970-E978,E990-E999	2	1.6	1.3	-	-	-	3	2.3	2.1	1	0.8	1.0

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		ST. VINCENT & THE GRENADINES						SURINAME					
		1985			1986			1983			1984		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		651	625.9	502.6	619	589.3	515.0	2657	727.9	...	2290	618.9	557.3
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	-	-	-	-	-	-	2	0.5	0.4	1	0.3	0.3
Paratyphoid fever and food poisoning	002.1-002.9, 003,005	-	-	-	-	-	-	3	0.8	0.8	1	0.3	0.3
Shigellosis and amebiasis	004,006	-	-	-	-	-	-	1	0.3	0.3	1	0.3	0.2
Other intestinal infections	007-009	8	7.7	7.3	11	10.5	12.6	72	19.7	18.3	62	16.8	16.9
Tuberculosis of respiratory system	010-012	5	4.8	3.1	3	2.9	3.6	8	2.2	2.0	6	1.6	1.5
Other tuberculosis	013-018	-	-	-	-	-	-	2	0.5	0.5	1	0.3	0.3
Plague	020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough	033	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection	036	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus	037	-	-	-	-	-	-	-	-	-	-	-	-
Septicemia	038	4	3.8	4.3	2	1.9	1.7	16	4.4	4.1	23	6.2	5.9
Acute poliomyelitis	045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox	050	-	-	-	-	-	-	-	-	-	-	-	-
Measles	055	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever	060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	1	1.0	0.9	-	-	-	4	1.1	1.1	1	0.3	0.3
Rabies	071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria	084	-	-	-	-	-	-	2	0.5	0.5	3	0.8	0.8
Trypanosomiasis	086	1	1.0	1.6	-	-	-	-	-	-	-	-	-
Syphilis	090-097	-	-	-	1	1.0	0.6	1	0.3	0.2	1	0.3	0.3
All other infectious and parasitic diseases	rest of 001-139	-	-	-	2	1.9	2.7	14	3.8	3.7	8	2.2	2.0
Malignant neoplasm of stomach	151	7	6.7	4.1	12	11.4	10.9	19	5.2	4.6	14	3.8	3.6
Malignant neoplasm of colon	153	3	2.9	3.3	-	-	-	7	1.9	1.9	5	1.4	1.1
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	3	2.9	1.8	4	3.8	3.8	8	2.2	1.9	5	1.4	1.3
Malignant neoplasm of trachea, bronchus and lung	162	4	3.8	3.7	8	7.6	7.0	22	6.0	5.1	19	5.1	4.4
Malignant neoplasm of female breast	174	11	10.6	9.6	-	-	-	8	2.2	2.0	13	3.5	3.2
Malignant neoplasm of cervix uteri	180	9	8.7	10.6	8	7.6	6.9	31	8.5	7.6	23	6.2	6.0
Leukemia	204-208	1	1.0	1.1	2	1.9	2.1	9	2.5	2.4	5	1.4	1.4
Malignant neoplasm of other and unspecified sites	rest of 140-208	35	33.7	28.8	39	37.1	31.9	113	31.0	26.4	125	33.8	29.8
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	2	1.9	1.5	6	5.7	5.6	16	4.4	4.0	17	4.6	3.9
Diabetes mellitus	250	51	49.0	35.9	41	39.0	31.4	47	12.9	11.4	41	11.1	9.8
Kwashiorkor	260	-	-	-	1	1.0	0.6	3	0.8	0.9	6	1.6	1.8
Nutritional marasmus	261	2	1.9	2.2	4	3.8	3.9	8	2.2	2.2	11	3.0	2.8
Other protein-calorie malnutrition	262,263	-	-	-	1	1.0	1.6	-	-	-	4	1.1	1.0
Avitaminosis	264-269	-	-	-	-	-	-	-	-	-	-	-	-
Other endocrine and metabolic diseases	rest of 240-279	14	13.5	10.4	3	2.9	2.1	21	5.8	4.7	21	5.7	5.2
Anemias	280-285	6	5.8	4.2	8	7.6	5.5	7	1.9	1.7	9	2.4	2.4
Other diseases of blood and blood-forming organs	286-289	-	-	-	-	-	-	4	1.1	1.2	6	1.6	1.7
Mental disorders	290-319	6	5.8	4.1	2	1.9	2.1	6	1.6	1.5	5	1.4	1.3
Meningitis	320-322	2	1.9	1.8	1	1.0	1.0	6	1.6	1.7	7	1.9	2.0
Other diseases of nervous system and sense organs	323-389	20	19.2	17.3	9	8.6	7.8	16	4.4	4.3	21	5.7	5.4
Acute rheumatic fever	390-392	-	-	-	2	1.9	1.9	1	0.3	0.3	-	-	-
Chronic rheumatic heart disease	393-398	-	-	-	-	-	-	4	1.1	1.0	6	1.6	1.6
Hypertensive disease	401-405	97	93.3	69.4	89	84.7	62.7	35	9.6	8.1	41	11.1	9.2
Acute myocardial infarction	410	16	15.4	10.9	28	26.7	24.3	177	48.5	42.9	170	45.9	41.2
Other ischemic heart disease	411-414	10	9.6	6.1	9	8.6	8.4	15	4.1	3.5	15	4.1	3.6
Diseases of pulmonary circulation and other heart disease	415-429	46	44.2	32.2	38	36.2	27.9	209	57.3	48.7	174	47.0	39.2
Cerebrovascular disease	430-438	50	48.1	31.3	62	59.0	39.9	157	43.0	36.0	164	44.3	36.9
Atherosclerosis	440	3	2.9	2.3	2	1.9	1.1	35	9.6	7.5	42	11.4	9.2
Other diseases of circulatory system	441-459	7	6.7	4.4	1	1.0	0.6	6	1.6	1.5	5	1.4	1.1
Pneumonia	480-486	20	19.2	14.0	9	8.6	9.2	71	19.5	17.3	81	21.9	20.1
Influenza	487	-	-	-	-	-	-	20	5.5	4.2	13	3.5	3.0
Bronchitis,emphysema and asthma	490-493	8	7.7	6.6	10	9.5	9.3	66	18.1	15.4	47	12.7	10.8
Other diseases of respiratory system	460-478, 494-519	8	7.7	7.4	11	10.5	10.5	20	5.5	4.8	15	4.1	3.9
Ulcer of stomach and duodenum	531-533	8	7.7	7.9	-	-	-	16	4.4	3.8	13	3.5	3.1
Appendicitis	540-543	-	-	-	-	-	-	-	-	-	1	0.3	0.2
Intestinal obstruction and hernia	550-553, 560	-	-	-	2	1.9	2.8	6	1.6	1.6	13	3.5	3.0
Chronic liver disease and cirrhosis	571	2	1.9	2.4	3	2.9	2.3	36	9.9	9.3	43	11.6	10.4
Other diseases of digestive system	rest of 520-579	11	10.6	9.3	25	23.8	23.4	48	13.1	12.3	40	10.8	10.4
Nephritis, nephrotic syndrome and nephrosis	580-589	5	4.8	4.2	8	7.6	5.8	45	12.3	10.8	38	10.3	9.4
Hyperplasia of prostate	600	4	3.8	2.4	6	5.7	3.0	6	1.6	1.3	-	-	-
Other diseases of genitourinary system	590-599, 601-629	10	9.6	6.4	9	8.6	6.2	14	3.8	3.2	13	3.5	3.1
Abortion	630-639	-	-	-	-	-	-	2	0.5	0.5	1	0.3	0.3
Direct obstetric causes	640-648, 651-676	3	2.9	4.0	-	-	-	8	2.2	2.3	7	1.9	1.7
Other obstetric causes	647,648,650	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies	740-759	10	9.6	10.6	15	14.3	15.3	41	11.2	11.1	36	9.7	9.9
Birth trauma	767	-	-	-	-	-	-	9	2.5	2.4	16	4.3	4.4
Other conditions originating in the perinatal period	760-766, 768-779	33	31.7	34.7	35	33.3	40.8	144	39.4	38.5	144	38.9	39.5
Symptoms and ill-defined conditions	780-799	57	54.8	34.6	46	43.8	30.5	694	190.1	86.6	372	100.5	84.8
All other diseases	680-739	3	2.9	2.2	1	1.0	1.0	13	3.6	3.3	16	4.3	4.1
Motor vehicle traffic accidents	E810-E819	5	4.8	4.2	6	5.7	5.8	63	17.3	16.7	54	14.6	13.9
Accidental falls	E880-E888	2	1.9	1.9	4	3.8	3.7	9	2.5	2.2	8	2.2	1.6
All other accidents	rest of E800-E949	10	9.6	10.1	7	6.7	7.3	87	23.8	23.0	93	25.1	24.7
Suicide	E950-E959	2	1.9	3.3	-	-	-	89	24.4	22.7	104	28.1	26.4
Homicide	E960-E969	8	7.7	5.2	9	8.6	7.5	21	5.8	5.3	22	5.9	5.7
Injury unknown whether accidentally or purposely inflicted	E980-E989	18	17.3	16.8	14	13.3	16.0	10	2.7	2.9	13	3.5	2.9
Injury from operations of war and legal intervention	E970-E978,E990-E999	-	-	-	-	-	-	-	-	-	1	0.3	0.2

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	SURINAME			TRINIDAD AND TOBAGO								
	1985			1980			1981			1982		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	2275	606.7	545.2	7506	685.2	557.8	7354	661.3	527.7	7641	676.9	543.2
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	3	0.8	0.7	1	0.1	0.1	2	0.2	0.2	3	0.3	0.3
Paratyphoid fever and food poisoning 002.1-002.9, 003,005	6	1.6	1.6	2	0.2	0.2	2	0.2	0.2	1	0.1	0.1
Shigellosis and amebiasis 004,006	-	-	-	-	-	-	2	0.2	0.2	-	-	-
Other intestinal infections 007-009	81	21.6	20.9	288	23.6	26.2	151	13.6	14.5	92	8.1	8.7
Tuberculosis of respiratory system 010-012	6	1.6	1.5	16	1.5	1.1	8	0.7	0.6	11	1.0	0.8
Other tuberculosis 013-018	1	0.3	0.2	1	0.1	0.1	-	-	-	2	0.2	0.2
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 033	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection 036	-	-	-	-	-	-	-	-	-	1	0.1	0.1
Tetanus 037	3	0.8	0.6	5	0.5	0.4	8	0.7	0.6	1	0.1	0.1
Septicemia 038	23	6.1	6,1	49	4.5	3.4	60	5.4	3.9	38	3.4	2.6
Acute poliomyelitis 045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	-	-	-	-	-	-	-	-	-	-	-	-
Yellow fever 060	-	-	-	-	-	-	6	0.5	0.7	3	0.3	0.3
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	1	0.3	0.3	9	0.8	0.6	8	0.7	0.6	10	0.9	0.7
Rabies 071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 084	1	0.3	0.3	-	-	-	-	-	-	-	-	-
Trypanosomiasis 086	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis 090-097	-	-	-	3	0.3	0.2	1	0.1	0.1	1	0.1	0.1
All other infectious and parasitic diseases rest of 001-139	11	2.9	2.5	13	1.2	1.0	24	2.2	1.8	23	2.0	1.9
Malignant neoplasm of stomach 151	14	3.7	3.1	101	9.2	6.7	89	8.0	5.7	77	6.8	4.9
Malignant neoplasm of colon 153	19	5.1	4.4	44	4.0	2.9	44	4.0	2.6	32	2.8	2.0
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	1	0.3	0.2	28	2.6	1.8	24	2.2	1.6	26	2.3	1.8
Malignant neoplasm of trachea, bronchus and lung 162	14	3.7	3.2	69	6.3	4.9	53	4.8	3.5	76	6.7	5.1
Malignant neoplasm of female breast 174	7	1.9	1.8	85	7.8	6.5	71	6.4	5.3	67	5.9	5.1
Malignant neoplasm of cervix uteri 180	23	6.1	5.5	48	4.4	3.6	56	5.0	4.4	68	6.0	5.4
Leukemia 204-208	6	1.6	1.6	34	3.1	2.7	30	2.7	2.4	29	2.6	2.3
Malignant neoplasm of other and unspecified sites rest of 140-208	105	28.0	24.9	384	35.1	27.6	425	38.2	29.3	412	36.5	28.0
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	15	4.0	3.6	15	1.4	1.2	13	1.2	1.0	18	1.6	1.6
Diabetes mellitus 250	86	22.9	20.5	357	30.8	24.1	590	53.1	40.5	624	55.3	42.0
Kwashiorkor 260	3	0.8	0.7	1	0.1	0.1	1	0.1	0.1	2	0.2	0.2
Nutritional marasmus 261	17	4.5	4.3	1	0.1	0.1	2	0.2	0.2	3	0.3	0.2
Other protein-calorie malnutrition 262,263	2	0.5	0.5	29	2.6	2.2	51	4.6	3.4	45	4.0	3.1
Avitaminosis 264-269	-	-	-	1	0.1	0.1	-	-	-	-	-	-
Other endocrine and metabolic diseases rest of 240-279	13	3.5	3.1	43	3.9	3.3	65	5.8	4.2	50	4.4	3.4
Anemias 280-285	16	4.3	4.2	44	4.0	3.3	56	5.0	4.3	59	5.2	4.5
Other diseases of blood and blood-forming organs 286-289	-	-	-	7	0.6	0.6	4	0.4	0.3	5	0.4	0.4
Mental disorders 290-319	10	2.7	2.5	20	1.8	1.5	23	2.1	1.8	29	2.6	2.2
Meningitis 320-322	8	2.1	2.2	20	1.8	1.7	23	2.1	2.1	24	2.1	2.2
Other diseases of nervous system and sense organs 323-389	17	4.5	4.3	68	6.2	5.5	85	7.6	6.8	89	7.9	7.1
Acute rheumatic fever 390-392	-	-	-	1	0.1	0.1	-	-	-	1	0.1	0.1
Chronic rheumatic heart disease 393-398	1	0.3	0.2	32	2.9	2.6	29	2.6	2.3	33	2.9	2.7
Hypertensive disease 401-405	39	10.4	8.8	587	53.6	39.7	446	40.1	28.2	369	32.7	23.3
Acute myocardial infarction 410	185	49.3	43.6	478	43.6	33.7	622	55.9	43.4	793	70.2	55.2
Other ischemic heart disease 411-414	18	4.8	4.0	676	61.7	46.4	568	51.1	36.8	458	40.6	29.9
Diseases of pulmonary circulation and other heart disease 415-429	165	44.0	37.1	493	45.0	33.7	422	37.9	27.3	400	35.4	26.4
Cerebrovascular disease 430-438	154	41.1	34.4	860	78.5	56.7	854	76.8	55.9	963	85.3	62.2
Atherosclerosis 440	18	4.8	3.7	144	13.1	9.1	100	9.0	6.2	92	8.1	5.6
Other diseases of circulatory system 441-459	7	1.9	1.6	67	6.1	4.6	44	4.0	3.2	69	6.1	4.5
Pneumonia 480-486	78	20.8	18.8	367	33.5	28.8	304	27.3	23.5	314	27.8	24.0
Influenza 487	11	2.9	2.4	6	0.5	0.4	6	0.5	0.4	1	0.1	0.1
Bronchitis,emphysema and asthma 490-493	64	17.1	15.0	120	11.0	8.4	153	13.8	10.4	140	12.4	9.4
Other diseases of respiratory system 460-478, 494-519	13	3.5	3.6	108	9.9	8.0	149	13.4	11.7	145	12.8	10.3
Ulcer of stomach and duodenum 531-533	7	1.9	1.7	54	4.9	3.9	39	3.5	2.6	45	4.0	3.2
Appendicitis 540-543	1	0.3	0.2	3	0.3	0.2	3	0.3	0.3	7	0.6	0.5
Intestinal obstruction and hernia 550-553, 560	17	4.5	4.2	28	2.6	1.9	20	1.8	1.5	20	1.8	1.5
Chronic liver disease and cirrhosis 571	43	11.5	10.9	157	14.3	13.0	136	12.2	10.8	144	12.8	11.0
Other diseases of digestive system rest of 520-579	43	11.5	10.6	122	11.1	9.5	133	12.0	9.8	135	12.0	10.0
Nephritis, nephrotic syndrome and nephrosis 580-589	35	9.3	8.3	110	10.0	7.8	85	7.6	6.0	105	9.3	7.6
Hyperplasia of prostate 600	3	0.8	0.7	15	1.4	0.9	26	2.3	1.6	21	1.9	1.2
Other diseases of genitourinary system 590-599, 601-629	22	5.9	5.2	71	6.5	4.6	64	5.8	4.1	80	7.1	5.1
Abortion 630-639	1	0.3	0.2	11	1.0	1.0	13	1.2	1.1	6	0.5	0.5
Direct obstetric causes 640-646, 651-676	6	1.6	1.6	8	0.7	0.7	6	0.5	0.5	8	0.7	0.7
Other obstetric causes 647,648,650	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies 740-759	51	13.6	13.7	61	5.6	6.3	83	7.5	8.0	102	9.0	9.6
Birth trauma 767	6	1.6	1.6	6	0.5	0.6	9	0.8	0.9	8	0.7	0.8
Other conditions originating in the perinatal period 760-766, 768-779	129	34.4	34.8	254	23.2	26.8	190	17.1	18.6	226	20.0	21.9
Symptoms and ill-defined conditions 780-799	369	98.4	81.6	226	20.6	15.8	195	17.5	13.4	220	19.5	14.7
All other diseases 680-739	11	2.9	2.6	76	6.9	5.3	81	7.3	5.5	83	7.4	5.2
Motor vehicle traffic accidents E810-E819	68	18.1	17.6	200	18.3	17.2	159	14.3	13.3	236	20.9	19.1
Accidental falls E880-E888	13	3.5	3.1	33	3.0	2.6	40	3.6	3.1	69	6.1	5.3
All other accidents rest of E800-E949	65	17.3	17.4	153	14.0	13.2	208	18.7	18.1	260	23.0	21.5
Suicide E950-E959	81	21.6	20.2	43	3.9	3.6	58	5.2	4.7	78	6.9	6.4
Homicide E960-E969	20	5.3	5.2	23	2.1	1.8	33	3.0	2.7	34	3.0	2.8
Injury unknown whether accidentally or purposely inflicted E980-E989	17	4.5	4.6	177	16.2	14.9	96	8.6	7.9	54	4.8	4.3
Injury from operations of war and legal intervention E970-E978,E990-E999	2	0.5	0.4	-	-	-	3	0.3	0.3	1	0.1	0.1

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	TRINIDAD AND TOBAGO									TURKS AND CAICOS IS.		
	1983			1984			1986			1980		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	7546	656.7	516.2	7819	670.8	534.3	7699	639.5	501.4	11	156.0	133.2
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	1	0.1	0.1	1	0.1	0.1	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9 003,005	-	-	-	-	-	-	1	0.1	0.1	-	-	-
Shigellosis and amebiasis 004,006	1	0.1	0.1	2	0.2	0.1	2	0.2	0.1	-	-	-
Other intestinal infections 007-009	53	4.6	4.6	32	2.7	3.1	33	2.7	2.8	1	14.2	9.8
Tuberculosis of respiratory system 010-012	10	0.9	0.8	18	1.5	1.3	24	2.0	1.6	-	-	-
Other tuberculosis 013-018	-	-	-	3	0.3	0.2	2	0.2	0.1	-	-	-
Plague 020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria 032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 033	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection 036	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus 037	5	0.4	0.3	5	0.4	0.4	7	0.6	0.5	-	-	-
Septicemia 038	62	5.4	4.0	53	4.5	3.3	35	2.9	2.1	-	-	-
Acute poliomyelitis 045	-	-	-	-	-	-	1	0.1	0.1	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	1	0.1	0.1	-	-	-	1	0.1	0.1	-	-	-
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis 070	8	0.7	0.6	12	1.0	0.9	12	1.0	0.8	-	-	-
Rabies 071	-	-	-	-	-	-	-	-	-	-	-	-
Malaria 084	-	-	-	-	-	-	-	-	-	-	-	-
Trypanosomiasis 086	-	-	-	1	0.1	0.1	-	-	-	-	-	-
Syphilis 090-097	2	0.2	0.1	1	0.1	0.1	-	-	-	-	-	-
All other infectious and parasitic diseases rest of 001-139	43	3.7	3.4	25	2.1	2.0	38	3.2	2.7	-	-	-
Malignant neoplasm of stomach 151	100	8.7	6.4	116	10.0	7.5	96	8.0	5.5	1	14.2	8.5
Malignant neoplasm of colon 153	57	5.0	3.8	56	4.8	3.5	72	6.0	4.5	-	-	-
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	17	1.5	1.1	22	1.9	1.4	19	1.6	1.1	-	-	-
Malignant neoplasm of trachea, bronchus and lung 162	74	6.4	5.1	82	7.0	5.3	97	8.1	6.2	-	-	-
Malignant neoplasm of female breast 174	73	6.4	5.0	94	8.1	6.8	91	7.6	6.1	-	-	-
Malignant neoplasm of cervix uteri 180	62	5.4	4.2	51	4.4	3.4	56	4.7	3.7	-	-	-
Leukemia 204-208	29	2.5	2.1	32	2.7	2.5	42	3.5	3.1	-	-	-
Malignant neoplasm of other and unspecified sites rest of 140-208	416	36.2	27.5	479	41.1	31.1	530	44.0	32.8	-	-	-
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	25	2.2	2.0	29	2.5	2.3	30	2.5	2.2	-	-	-
Diabetes mellitus 250	727	63.3	48.1	784	67.3	51.5	831	69.0	52.2	1	14.2	14.0
Kwashiorkor 260	-	-	-	-	-	-	-	-	-	-	-	-
Nutritional marasmus 261	1	0.1	0.1	1	0.1	0.1	2	0.2	0.1	-	-	-
Other protein-calorie malnutrition 262,263	29	2.5	1.8	27	2.3	1.6	29	2.4	1.6	-	-	-
Avitaminosis 264-269	-	-	-	1	0.1	0.1	-	-	-	-	-	-
Other endocrine and metabolic rest of diseases 240-279	91	7.9	5.9	83	7.1	5.5	88	7.3	5.8	-	-	-
Anemias 280-285	52	4.5	3.5	61	5.2	4.2	68	5.6	4.5	-	-	-
Other diseases of blood and blood-forming organs 286-289	9	0.8	0.7	9	0.8	0.7	9	0.7	0.6	-	-	-
Mental disorders 290-319	46	4.0	3.5	51	4.4	3.6	35	2.9	2.2	1	14.2	11.9
Meningitis 320-322	16	1.4	1.3	29	2.5	2.4	18	1.5	1.4	-	-	-
Other diseases of nervous system and sense organs 323-389	100	8.7	7.6	115	9.9	8.6	126	10.5	9.0	-	-	-
Acute rheumatic fever 390-392	1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	-	-	-
Chronic rheumatic heart disease 393-398	24	2.1	2.0	24	2.1	1.7	16	1.3	1.1	-	-	-
Hypertensive disease 401-405	345	30.0	21.3	332	28.5	20.8	338	28.1	20.6	1	14.2	12.0
Acute myocardial infarction 410	829	72.1	55.2	771	66.1	51.4	895	74.3	56.4	-	-	-
Other ischemic heart disease 411-414	472	41.1	29.4	477	40.9	29.4	414	34.4	24.2	-	-	-
Diseases of pulmonary circulation and other heart disease 415-429	344	29.9	21.8	377	32.3	23.7	329	27.3	19.9	-	-	-
Cerebrovascular disease 430-438	947	82.4	59.4	965	82.8	60.1	930	77.2	55.1	-	-	-
Atherosclerosis 440	71	6.2	4.1	65	5.6	3.7	49	4.1	2.7	1	14.2	12.0
Other diseases of circulatory system 441-459	54	4.7	3.5	82	7.0	5.1	73	6.1	4.4	-	-	-
Pneumonia 480-486	285	24.8	20.3	256	22.0	17.7	249	20.7	17.3	1	14.2	14.7
Influenza 487	4	0.3	0.3	8	0.7	0.5	4	0.3	0.3	-	-	-
Bronchitis,emphysema and asthma 490-493	143	12.4	9.4	142	12.2	9.3	110	9.1	6.8	-	-	-
Other diseases of respiratory system 460-478 494-519	120	10.4	8.6	166	14.2	12.4	140	11.6	9.8	-	-	-
Ulcer of stomach and duodenum 531-533	39	3.4	2.5	59	5.1	3.7	45	3.7	2.7	-	-	-
Appendicitis 540-543	9	0.8	0.6	6	0.5	0.5	12	1.0	0.9	-	-	-
Intestinal obstruction and hernia 550-553 560	23	2.0	1.6	36	3.1	2.5	32	2.7	2.0	-	-	-
Chronic liver disease and cirrhosis 571	119	10.4	9.0	132	11.3	9.8	97	8.1	6.8	-	-	-
Other diseases of digestive system rest of 520-579	144	12.5	10.6	144	12.4	10.5	105	8.7	7.0	1	14.2	9.8
Nephritis, nephrotic syndrome and nephrosis 580-589	79	6.9	5.2	82	7.0	5.6	97	8.1	6.5	1	14.2	8.5
Hyperplasia of prostate 600	26	2.3	1.5	26	2.2	1.5	28	2.3	1.6	-	-	-
Other diseases of genitourinary system 590-599 601-629	71	6.2	4.5	77	6.6	4.8	67	5.6	4.2	-	-	-
Abortion 630-639	8	0.7	0.6	6	0.5	0.5	9	0.7	0.7	-	-	-
Direct obstetric causes 640-646 651-676	10	0.9	0.7	3	0.3	0.2	8	0.7	0.6	-	-	-
Other obstetric causes 647,648,650	-	-	-	-	-	-	1	0.1	0.1	-	-	-
Congenital anomalies 740-759	99	8.6	9.4	81	6.9	7.9	86	7.1	8.2	-	-	-
Birth trauma 767	1	0.1	0.1	2	0.2	0.2	19	1.6	1.9	-	-	-
Other conditions originating in the perinatal period 760-766 768-779	181	15.8	17.2	249	21.4	24.9	183	15.2	18.1	-	-	-
Symptoms and ill-defined conditions 780-799	239	20.8	15.2	221	19.0	14.8	191	15.9	12.1	-	-	-
All other diseases 680-739	73	6.4	4.4	71	6.1	4.5	95	7.9	5.6	-	-	-
Motor vehicle traffic accidents E810-E819	190	16.5	15.3	214	18.4	16.6	194	16.1	14.7	-	-	-
Accidental falls E880-E888	43	3.7	3.2	47	4.0	3.1	34	2.8	2.2	-	-	-
All other accidents rest of E800-E949	255	22.2	20.9	202	17.3	16.4	179	14.9	13.8	2	28.4	32.1
Suicide E950-E959	99	8.6	7.5	78	6.7	6.0	104	8.6	7.5	-	-	-
Homicide E960-E969	58	5.0	4.5	63	5.4	4.8	80	6.6	6.0	-	-	-
Injury unknown whether accidentally or purposely inflicted E980-E989	26	2.3	2.0	75	6.4	5.6	79	6.6	5.6	-	-	-
Injury from operations of war and legal intervention E970-E978,E990-E999	5	0.4	0.4	4	0.3	0.3	11	0.9	0.8	-	-	-

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	TURKS AND CAICOS ISLANDS									UNITED STATES		
	1982			1983			1987			1984		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	25	312.9	253.6	50	625.8	509.6	25	312.9	232.7	2039369	862.5	366.9
Cholera 001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever 002.0	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid fever and food poisoning 002.1-002.9,003,005	-	-	-	-	-	-	-	-	-	99	0.0	0.0
Shigellosis and amebiasis 004,006	-	-	-	-	-	-	-	-	-	18	0.0	0.0
Other intestinal infections 007-009	2	25.0	15.5	1	12.5	20.8	-	-	-	331	0.1	0.2
Tuberculosis of respiratory system 010-012	-	-	-	-	-	-	-	-	-	1342	0.6	0.2
Other tuberculosis 013-018	-	-	-	-	-	-	-	-	-	387	0.2	0.1
Plague 020	-	-	-	-	-	-	-	-	-	3	0.0	0.0
Diphtheria 032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough 033	-	-	-	-	-	-	-	-	-	7	0.0	0.0
Meningococcal infection 036	-	-	-	-	-	-	-	-	-	300	0.1	0.2
Tetanus 037	-	-	-	-	-	-	-	-	-	20	0.0	0.0
Septicemia 038	-	-	-	-	-	-	-	-	-	15028	6.4	2.5
Acute poliomyelitis 045	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	-	-	-	-	-	-	-	-	-	1	0.0	0.0
Yellow fever 060	-	-	-	-	-	-	-	-	-	1	0.0	0.0
Arthropod-borne encephalitis 062-064	-	-	-	-	-	-	-	-	-	3	0.0	0.0
Viral hepatitis 070	-	-	-	-	-	-	-	-	-	869	0.4	0.2
Rabies 071	-	-	-	-	-	-	-	-	-	2	0.0	0.0
Malaria 084	-	-	-	-	-	-	-	-	-	7	0.0	0.0
Trypanosomiasis 086	-	-	-	-	-	-	-	-	-	1	0.0	0.0
Syphilis 090-097	-	-	-	-	-	-	-	-	-	105	0.0	0.0
All other infectious and parasitic diseases rest of 001-139	-	-	-	-	-	-	-	-	-	5976	2.5	1.6
Malignant neoplasm of stomach 151	-	-	-	-	-	-	-	-	-	14246	6.0	2.3
Malignant neoplasm of colon 153	-	-	-	-	-	-	1	12.5	11.9	47946	20.3	7.2
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	1	12.5	9.0	-	-	-	-	-	-	8386	3.5	1.3
Malignant neoplasm of trachea, bronchus and lung 162	1	12.5	10.9	-	-	-	1	12.5	10.9	118730	50.2	20.5
Malignant neoplasm of female breast 174	-	-	-	-	-	-	-	-	-	39472	16.7	7.5
Malignant neoplasm of cervix uteri 180	1	12.5	7.4	1	12.5	11.2	-	-	-	4564	1.9	1.0
Leukemia 204-208	-	-	-	-	-	-	-	-	-	17080	7.2	3.5
Malignant neoplasm of other and unspecified sites rest of 140-208	1	12.5	10.9	-	-	-	6	75.1	49.6	203068	85.9	34.4
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	-	-	-	-	-	-	-	-	-	6436	2.7	1.2
Diabetes mellitus 250	-	-	-	1	12.5	15.0	1	12.5	8.5	35787	15.1	5.5
Kwashiorkor 260	-	-	-	-	-	-	-	-	-	31	0.0	0.0
Nutritional marasmus 261	-	-	-	-	-	-	1	12.5	12.4	254	0.1	0.0
Other protein-calorie malnutrition 262,263	-	-	-	-	-	-	-	-	-	2180	0.9	0.3
Avitaminosis 264-269	-	-	-	-	-	-	-	-	-	135	0.1	0.0
Other endocrine and metabolic diseases rest of 240-279	-	-	-	-	-	-	-	-	-	11157	4.7	2.7
Anemias 280-285	-	-	-	-	-	-	-	-	-	3527	1.5	0.7
Other diseases of blood and blood-forming organs 286-289	-	-	-	-	-	-	-	-	-	3778	1.6	0.7
Mental disorders 290-319	-	-	-	-	-	-	1	12.5	10.9	16595	7.0	3.0
Meningitis 320-322	-	-	-	-	-	-	-	-	-	1194	0.5	0.5
Other diseases of nervous system and sense organs 323-389	-	-	-	-	-	-	-	-	-	27112	11.5	5.5
Acute rheumatic fever 390-392	-	-	-	-	-	-	-	-	-	70	0.0	0.0
Chronic rheumatic heart disease 393-398	-	-	-	-	-	-	-	-	-	6842	2.9	1.2
Hypertensive disease 401-405	3	37.5	23.9	2	25.0	16.8	-	-	-	31341	13.3	4.6
Acute myocardial infarction 410	-	-	-	1	12.5	10.9	5	62.6	45.6	279122	118.1	41.4
Other ischemic heart disease 411-414	-	-	-	-	-	-	-	-	-	262166	110.9	34.8
Diseases of pulmonary circulation and other heart disease 415-429	4	50.1	39.2	8	100.1	62.4	3	37.5	30.1	193347	81.8	28.7
Cerebrovascular disease 430-438	6	75.1	58.7	8	100.1	64.3	6	75.1	52.9	154327	65.3	20.6
Atherosclerosis 440	-	-	-	1	12.5	8.5	-	-	-	24462	10.3	2.8
Other diseases of circulatory system 441-459	-	-	-	-	-	-	-	-	-	26494	11.2	4.0
Pneumonia 480-486	2	25.0	24.5	8	100.1	64.3	-	-	-	57798	24.4	8.3
Influenza 487	-	-	-	-	-	-	-	-	-	1096	0.5	0.1
Bronchitis,emphysema and asthma 490-493	-	-	-	-	-	-	-	-	-	20372	8.6	3.2
Other diseases of respiratory system 460-478,494-519	-	-	-	-	-	-	-	-	-	70420	29.8	10.6
Ulcer of stomach and duodenum 531-533	-	-	-	-	-	-	-	-	-	6570	2.8	0.9
Appendicitis 540-543	-	-	-	-	-	-	-	-	-	493	0.2	0.1
Intestinal obstruction and hernia 550-553,560	-	-	-	-	-	-	-	-	-	5300	2.2	0.8
Chronic liver disease and cirrhosis 571	-	-	-	1	12.5	11.8	-	-	-	27317	11.6	6.1
Other diseases of digestive system rest of 520-579	-	-	-	-	-	-	-	-	-	34133	14.4	5.6
Nephritis, nephrotic syndrome and nephrosis 580-589	-	-	-	-	-	-	-	-	-	20126	8.5	3.0
Hyperplasia of prostate 600	-	-	-	-	-	-	-	-	-	536	0.2	0.1
Other diseases of genitourinary system 590-599,601-629	-	-	-	-	-	-	-	-	-	14123	6.0	1.9
Abortion 630-639	-	-	-	-	-	-	-	-	-	57	0.0	0.0
Direct obstetric causes 640-646,651-676	-	-	-	-	-	-	-	-	-	223	0.1	0.1
Other obstetric causes 647,648,650	-	-	-	-	-	-	-	-	-	5	0.0	0.0
Congenital anomalies 740-759	1	12.5	15.5	-	-	-	-	-	-	13039	5.5	9.4
Birth trauma 767	-	-	-	1	12.5	20.8	-	-	-	388	0.2	0.3
Other conditions originating in the perinatal period 760-766,768-779	1	12.5	15.5	2	25.0	41.5	-	-	-	18493	7.8	15.9
Symptoms and ill-defined conditions 780-799	-	-	-	14	175.2	146.5	-	-	-	29721	12.6	9.6
All other diseases 680-739	1	12.5	10.9	-	-	-	-	-	-	9798	4.1	1.6
Motor vehicle traffic accidents E810-E819	-	-	-	-	-	-	-	-	-	45208	19.1	16.7
Accidental falls E880-E888	-	-	-	-	-	-	-	-	-	11937	5.0	2.0
All other accidents rest of E800-E949	1	12.5	11.9	1	12.5	15.0	-	-	-	35766	15.1	12.3
Suicide E950-E959	-	-	-	-	-	-	-	-	-	29286	12.4	8.9
Homicide E960-E969	-	-	-	-	-	-	-	-	-	19510	8.3	7.2
Injury unknown whether accidentally or purposely inflicted E980-E989	-	-	-	-	-	-	-	-	-	2996	1.3	1.0
Injury from operations of war and legal intervention E970-E978,E990-E999	-	-	-	-	-	-	-	-	-	309	0.1	0.1

TCA 1982 PROVISIONAL
TCA 1983 PROVISIONAL

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death	UNITED STATES									URUGUAY		
	1985			1986			1987			1985		
	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes	2086440	873.9	367.0	2105361	873.2	364.9	2123323	872.3	360.5	28565	948.4	463.9
Cholera 001	1	0.0	0.0	-	-	-	1	0.0	0.0	-	-	-
Typhoid fever 002.0	-	-	-	2	0.0	0.0	2	0.0	0.0	1	0.0	0.0
Paratyphoid fever and food poisoning 002.1-002.9,003,005	127	0.1	0.0	105	0.0	0.0	106	0.0	0.0	3	0.1	0.1
Shigellosis and amebiasis 004,006	27	0.0	0.0	12	0.0	0.0	22	0.0	0.0	1	0.0	0.1
Other intestinal infections 007-009	301	0.1	0.1	347	0.1	0.1	307	0.1	0.1	229	7.6	9.3
Tuberculosis of respiratory system 010-012	1368	0.6	0.2	1407	0.6	0.2	1398	0.6	0.2	86	2.9	1.4
Other tuberculosis 013-018	384	0.2	0.1	375	0.2	0.1	357	0.1	0.1	12	0.4	0.2
Plague 020	1	0.0	0.0	-	-	-	1	0.0	0.0	-	-	-
Diphtheria 032	-	-	-	-	-	-	1	0.0	0.0	-	-	-
Whooping cough 033	4	0.0	0.0	6	0.0	0.0	1	0.0	0.0	1	0.0	0.1
Meningococcal infection 036	257	0.1	0.2	286	0.1	0.2	258	0.1	0.2	9	0.3	0.3
Tetanus 037	23	0.0	0.0	22	0.0	0.0	16	0.0	0.0	7	0.2	0.1
Septicemia 038	17182	7.2	2.7	18795	7.8	2.9	19916	8.2	2.9	254	8.4	6.1
Acute poliomyelitis 045	3	0.0	0.0	-	-	-	-	-	-	-	-	-
Smallpox 050	-	-	-	-	-	-	-	-	-	-	-	-
Measles 055	4	0.0	0.0	2	0.0	0.0	2	0.0	0.0	-	-	-
Yellow fever 060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis 062-064	3	0.0	0.0	4	0.0	0.0	5	0.0	0.0	-	-	-
Viral hepatitis 070	942	0.4	0.2	1006	0.4	0.2	1182	0.5	0.3	10	0.3	0.2
Rabies 071	-	-	-	-	-	-	1	0.0	0.0	-	-	-
Malaria 084	13	0.0	0.0	5	0.0	0.0	5	0.0	0.0	-	-	-
Trypanosomiasis 086	1	0.0	0.0	1	0.0	0.0	2	0.0	0.0	-	-	-
Syphilis 090-097	80	0.0	0.0	80	0.0	0.0	98	0.0	0.0	3	0.1	0.1
All other infectious and parasitic diseases rest of 001-139	7282	3.1	2.0	9168	3.8	2.5	5962	2.4	1.4	65	2.2	1.4
Malignant neoplasm of stomach 151	13951	5.8	2.2	13855	5.7	2.1	13742	5.6	2.1	528	17.5	7.0
Malignant neoplasm of colon 153	48256	20.2	7.2	47858	19.8	7.0	48362	19.9	6.9	569	18.9	7.2
Malignant neoplasm of rectum, rectosigmoid junction and anus 154	8195	3.4	1.2	7958	3.3	1.2	7972	3.3	1.2	185	6.1	2.4
Malignant neoplasm of trachea, bronchus and lung 162	122556	51.3	20.8	125522	52.1	20.8	130009	53.4	21.2	1073	35.6	15.3
Malignant neoplasm of female breast 174	40093	16.8	7.5	40539	16.8	7.4	40899	16.8	7.4	529	17.6	8.3
Malignant neoplasm of cervix uteri 180	4508	1.9	1.0	4558	1.9	1.0	4425	1.8	0.9	68	2.3	1.3
Leukemia 204-208	17319	7.3	3.5	17365	7.2	3.4	17284	7.1	3.3	183	6.1	4.2
Malignant neoplasm of other and unspecified sites rest of 140-208	206685	86.6	34.4	211721	87.8	34.5	214234	88.0	34.1	3320	110.2	45.8
Benign neoplasms,carcinoma in situ and other neoplasms 210-239	6699	2.8	1.3	6730	2.8	1.2	6570	2.7	1.1	91	3.0	1.7
Diabetes mellitus 250	36969	15.5	5.6	37184	15.4	5.7	38532	15.8	5.7	586	19.5	7.2
Kwashiorkor 260	43	0.0	0.0	38	0.0	0.0	42	0.0	0.0	-	-	-
Nutritional marasmus 261	279	0.1	0.0	298	0.1	0.0	297	0.1	0.0	8	0.3	0.2
Other protein-calorie malnutrition 262,263	2398	1.0	0.3	2356	1.0	0.3	2402	1.0	0.3	121	4.0	5.2
Avitaminosis 264-269	154	0.1	0.0	170	0.1	0.0	148	0.1	0.0	2	0.1	0.1
Other endocrine and metabolic diseases rest of 240-279	13425	5.6	3.2	16499	6.8	4.1	24390	10.0	6.5	170	5.6	2.8
Anemias 280-285	3694	1.5	0.7	3708	1.5	0.7	3813	1.6	0.7	76	2.5	1.1
Other diseases of blood and blood-forming organs 286-289	3997	1.7	0.7	4069	1.7	0.7	4304	1.8	0.7	29	1.0	0.7
Mental disorders 290-319	18598	7.8	3.3	19663	8.2	3.4	21374	8.8	3.5	226	7.5	2.9
Meningitis 320-322	1206	0.5	0.5	1160	0.5	0.5	1161	0.5	0.5	47	1.6	1.5
Other diseases of nervous system and sense organs 323-389	29751	12.5	5.6	31805	13.2	5.8	34744	14.3	6.0	375	12.5	8.7
Acute rheumatic fever 390-392	56	0.0	0.0	60	0.0	0.0	42	0.0	0.0	2	0.1	0.0
Chronic rheumatic heart disease 393-398	6537	2.7	1.1	6381	2.6	1.0	6347	2.6	1.0	27	0.9	0.5
Hypertensive disease 401-405	31433	13.2	4.5	30989	12.9	4.4	31338	12.9	4.4	367	12.2	4.5
Acute myocardial infarction 410	274199	114.9	39.7	261002	108.3	36.9	253542	104.2	35.0	2158	71.6	27.1
Other ischemic heart disease 411-414	262606	110.0	34.1	259727	107.7	33.0	258596	106.2	32.2	1715	56.9	18.8
Diseases of pulmonary circulation and other heart disease 415-429	204089	85.5	29.5	215315	89.3	30.6	218627	89.8	30.4	2379	79.0	29.7
Cerebrovascular disease 430-438	153050	64.1	19.9	149643	62.1	19.1	149835	61.6	18.7	3724	123.6	43.9
Atherosclerosis 440	23926	10.0	2.7	22706	9.4	2.5	22474	9.2	2.4	874	29.0	8.9
Other diseases of circulatory system 441-459	26843	11.2	4.0	27094	11.2	3.9	27633	11.4	3.9	232	7.7	3.0
Pneumonia 480-486	65561	27.5	9.0	67974	28.2	9.1	68593	28.2	9.0	629	20.9	10.0
Influenza 487	2054	0.9	0.2	1838	0.8	0.2	632	0.3	0.1	67	2.2	1.0
Bronchitis,emphysema and asthma 490-493	21645	9.1	3.3	22178	9.2	3.4	22424	9.2	3.3	423	14.0	5.8
Other diseases of respiratory system 460-478,494-519	76929	32.2	11.2	78950	32.7	11.2	81185	33.4	11.1	808	26.8	12.4
Ulcer of stomach and duodenum 531-533	6645	2.8	0.9	6477	2.7	0.9	6358	2.6	0.8	77	2.6	0.9
Appendicitis 540-543	501	0.2	0.1	512	0.2	0.1	481	0.2	0.1	12	0.4	0.2
Intestinal obstruction and hernia 550-553,560	5361	2.2	0.8	5445	2.3	0.8	5547	2.3	0.8	156	5.2	2.1
Chronic liver disease and cirrhosis 571	26767	11.2	5.9	26159	10.8	5.6	26201	10.8	5.6	253	8.4	3.9
Other diseases of digestive system rest of 520-579	35531	14.9	5.7	35755	14.8	5.5	36864	15.1	5.6	597	19.8	8.7
Nephritis, nephrotic syndrome and nephrosis 580-589	21349	8.9	3.2	21767	9.0	3.1	22052	9.1	3.1	309	10.3	4.4
Hyperplasia of prostate 600	479	0.2	0.1	508	0.2	0.1	461	0.2	0.0	22	0.7	0.2
Other diseases of genitourinary system 590-599,601-629	15060	6.3	1.9	16407	6.8	2.0	17446	7.2	2.1	141	4.7	1.7
Abortion 630-639	49	0.0	0.0	51	0.0	0.0	44	0.0	0.0	6	0.2	0.2
Direct obstetric causes 640-646,651-676	232	0.1	0.1	200	0.1	0.1	192	0.1	0.1	17	0.6	0.6
Other obstetric causes 647,648,650	14	0.0	0.0	21	0.0	0.0	15	0.0	0.0	-	-	-
Congenital anomalies 740-759	12783	5.4	9.1	12638	5.2	8.8	12333	5.1	8.4	275	9.1	15.4
Birth trauma 767	334	0.1	0.3	270	0.1	0.2	259	0.1	0.2	61	2.0	3.6
Other conditions originating in the perinatal period 760-766,768-779	18912	7.9	15.9	18121	7.5	15.2	17963	7.4	14.8	630	20.9	37.1
Symptoms and ill-defined conditions 780-799	30960	13.0	9.7	31390	13.0	9.9	31261	12.8	10.0	2104	69.9	35.2
All other diseases 680-739	10108	4.2	1.6	10074	4.2	1.6	10289	4.2	1.5	91	3.0	1.7
Motor vehicle traffic accidents E810-E819	44822	18.8	16.5	46867	19.4	17.2	47297	19.4	17.2	250	8.3	6.9
Accidental falls E880-E888	12001	5.0	2.0	11444	4.7	1.9	11733	4.8	1.9	151	5.0	2.3
All other accidents rest of E800-E949	36634	15.3	12.3	36968	15.3	12.3	35990	14.8	11.8	753	25.0	21.2
Suicide E950-E959	29453	12.3	8.8	30904	12.8	9.1	30796	12.7	8.9	288	9.6	6.1
Homicide E960-E969	19628	8.2	7.1	21462	8.9	7.8	20812	8.6	7.5	83	2.8	2.1
Injury unknown whether accidentally or purposely inflicted E980-E989	2826	1.2	1.0	3108	1.3	1.0	3011	1.2	1.0	1	0.0	0.0
Injury from operations of war and legal intervention E970-E978,E990-E999	284	0.1	0.1	281	0.1	0.1	303	0.1	0.1	2	0.1	0.1

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		URUGUAY						VENEZUELA					
		1986			1987			1982			1985		
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate
All causes		28792	948.8	462.3	29882	977.2	461.2	78329	491.3	523.9	79356	458.3	478.5
Cholera	001	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid fever	002.0	1	0.0	0.0	1	0.0	0.0	2	0.0	0.0	3	0.0	0.0
Paratyphoid fever and food poisoning	002.1-002.9 003,005	-	-	-	1	0.0	0.0	4	0.0	0.0	4	0.0	0.0
Shigellosis and amebiasis	004,006	1	0.0	0.1	-	-	-	103	0.6	0.7	142	0.8	0.8
Other intestinal infections	007-009	174	5.7	6.8	131	4.3	5.1	2997	18.8	19.0	2083	12.0	13.0
Tuberculosis of respiratory system	010-012	78	2.6	1.2	81	2.6	1.2	644	4.0	4.4	587	3.4	3.5
Other tuberculosis	013-018	7	0.2	0.1	14	0.5	0.3	68	0.4	0.5	60	0.3	0.3
Plague	020	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	032	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough	033	15	0.5	0.8	5	0.2	0.3	48	0.3	0.3	4	0.0	0.0
Meningococcal infection	036	3	0.1	0.2	8	0.3	0.3	10	0.1	0.1	65	0.4	0.4
Tetanus	037	10	0.3	0.1	8	0.3	0.1	111	0.7	0.7	14	0.1	0.1
Septicemia	038	258	8.5	5.7	260	8.5	4.7	1119	7.0	7.1	70	0.4	0.4
Acute poliomyelitis	045	-	-	-	-	-	-	2	0.0	0.0	1053	6.1	6.5
Smallpox	050	-	-	-	-	-	-	-	-	-	3	0.0	0.0
Measles	055	6	0.2	0.4	12	0.4	0.7	152	1.0	1.0	273	1.6	1.7
Yellow fever	060	-	-	-	-	-	-	-	-	-	-	-	-
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	070	5	0.2	0.1	6	0.2	0.1	67	0.4	0.4	78	0.5	0.5
Rabies	071	-	-	-	-	-	-	12	0.1	0.1	1	0.0	0.0
Malaria	084	-	-	-	-	-	-	9	0.1	0.1	23	0.1	0.1
Trypanosomiasis	086	4	0.1	0.1	5	0.2	0.1	755	4.7	5.3	766	4.4	4.6
Syphilis	090-097	3	0.1	0.2	10	0.3	0.4	16	0.1	0.1	13	0.1	0.1
All other infectious and parasitic diseases	rest of 001-139	63	2.1	1.3	58	1.9	1.4	389	2.4	2.6	481	2.8	2.9
Malignant neoplasm of stomach	151	553	18.2	7.0	463	15.1	5.9	1328	8.3	9.3	1274	7.4	7.7
Malignant neoplasm of colon	153	572	18.8	7.1	537	17.6	6.5	267	1.7	1.9	329	1.9	2.0
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	194	6.4	2.4	225	7.4	2.8	122	0.8	0.8	110	0.6	0.7
Malignant neoplasm of trachea, bronchus and lung	162	1133	37.3	15.7	1166	38.1	16.0	901	5.7	6.3	1025	5.9	6.2
Malignant neoplasm of female breast	174	565	18.6	8.7	521	17.0	7.8	382	2.4	2.7	446	2.6	2.7
Malignant neoplasm of cervix uteri	180	90	3.0	1.7	78	2.6	1.6	441	2.8	3.1	493	2.8	3.0
Leukemia	204-208	174	5.7	3.2	210	6.9	4.2	410	2.6	2.6	511	3.0	3.0
Malignant neoplasm of other and unspecified sites	rest of 140-208	3391	111.7	46.6	3477	113.7	47.1	3807	23.9	26.4	4108	23.7	24.7
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	80	2.6	1.6	118	3.9	2.0	273	1.7	1.8	298	1.7	1.8
Diabetes mellitus	250	617	20.3	7.8	663	21.7	8.1	1894	11.9	13.2	2040	11.8	12.3
Kwashiorkor	260	-	-	-	-	-	-	8	0.1	0.1	11	0.1	0.1
Nutritional marasmus	261	19	0.6	0.8	15	0.5	0.7	89	0.6	0.6	116	0.7	0.7
Other protein-calorie malnutrition	262,263	107	3.5	4.8	98	3.2	4.4	332	2.1	2.2	314	1.8	2.0
Avitaminosis	264-269	3	0.1	0.2	1	0.0	0.1	3	0.0	0.0	5	0.0	0.0
Other endocrine and metabolic diseases	rest of 240-279	132	4.3	2.3	182	6.0	2.6	580	3.6	3.9	462	2.7	2.8
Anemias	280-285	78	2.6	1.2	96	3.1	1.2	303	1.9	2.0	264	1.5	1.6
Other diseases of blood and blood-forming organs	286-289	25	0.8	0.5	30	1.0	0.5	95	0.6	0.6	75	0.4	0.5
Mental disorders	290-319	277	9.1	3.5	338	11.1	3.9	189	1.2	1.3	101	0.6	0.6
Meningitis	320-322	74	2.4	3.0	39	1.3	1.2	585	3.7	3.7	444	2.6	2.7
Other diseases of nervous system and sense organs	323-389	323	10.6	7.4	404	13.2	8.2	921	5.8	5.9	881	5.1	5.2
Acute rheumatic fever	390-392	-	-	-	6	0.2	0.1	15	0.1	0.1	13	0.1	0.1
Chronic rheumatic heart disease	393-398	21	0.7	0.4	35	1.1	0.7	160	1.0	1.0	220	1.3	1.3
Hypertensive disease	401-405	334	11.0	4.2	412	13.5	4.9	1512	9.5	10.7	1779	10.3	10.8
Acute myocardial infarction	410	2040	67.2	25.1	2100	68.7	25.8	5344	33.5	37.6	5726	33.1	34.8
Other ischemic heart disease	411-414	1739	57.3	19.3	1859	60.8	20.7	1605	10.1	11.4	1726	10.0	10.5
Diseases of pulmonary circulation and other heart disease	415-429	2497	82.3	31.4	2882	94.2	35.2	4315	27.1	30.4	3645	21.0	22.1
Cerebrovascular disease	430-438	3672	121.0	43.7	3689	120.6	42.6	4765	29.9	33.7	4681	27.0	28.4
Atherosclerosis	440	965	31.8	9.7	895	29.3	9.0	612	3.8	4.5	497	2.9	3.0
Other diseases of circulatory system	441-459	280	9.2	3.7	312	10.2	3.9	322	2.0	2.2	443	2.6	2.7
Pneumonia	480-486	627	20.7	11.4	643	21.0	10.6	3063	19.2	20.5	2876	16.6	17.6
Influenza	487	9	0.3	0.2	38	1.2	0.5	112	0.7	0.8	101	0.6	0.6
Bronchitis,emphysema and asthma	490-493	351	11.6	4.9	405	13.2	5.5	879	5.5	6.0	974	5.6	5.9
Other diseases of respiratory system	460-478 494-519	849	28.0	12.8	933	30.5	13.4	1289	8.1	8.7	1427	8.2	8.6
Ulcer of stomach and duodenum	531-533	62	2.0	0.7	73	2.4	0.9	280	1.8	1.8	344	2.0	2.1
Appendicitis	540-543	19	0.6	0.4	17	0.6	0.3	119	0.7	0.8	78	0.5	0.5
Intestinal obstruction and hernia	550-553 560	154	5.1	2.5	144	4.7	1.9	278	1.7	1.9	281	1.6	1.7
Chronic liver disease and cirrhosis	571	254	8.4	3.9	301	9.8	4.6	1025	6.4	7.1	1054	6.1	6.5
Other diseases of digestive system	rest of 520-579	639	21.1	8.6	668	21.8	9.2	1243	7.8	8.4	1127	6.5	6.8
Nephritis, nephrotic syndrome and nephrosis	580-589	308	10.1	4.2	252	8.2	3.2	726	4.6	5.0	706	4.1	4.2
Hyperplasia of prostate	600	20	0.7	0.2	38	1.2	0.4	57	0.4	0.4	62	0.4	0.4
Other diseases of genitourinary system	590-599 601-629	186	6.1	2.2	213	7.0	2.4	289	1.8	2.0	273	1.6	1.8
Abortion	630-639	5	0.2	0.2	4	0.1	0.1	61	0.4	0.4	67	0.4	0.4
Direct obstetric causes	640-646 651-676	9	0.3	0.3	11	0.4	0.4	177	1.1	1.1	206	1.2	1.1
Other obstetric causes	647,648,650	-	-	-	-	-	-	19	0.1	0.1	18	0.1	0.1
Congenital anomalies	740-759	249	8.2	14.2	281	9.2	15.1	1625	10.2	10.1	1543	8.9	9.6
Birth trauma	767	44	1.4	2.6	38	1.2	2.2	244	1.5	1.5	348	2.0	2.2
Other conditions originating in the perinatal period	760-766 768-779	552	18.2	32.4	566	18.5	33.4	5742	36.0	35.5	5365	31.0	33.7
Symptoms and ill-defined conditions	780-799	2091	68.9	36.4	1866	61.0	30.0	10929	68.5	74.6	13746	79.4	83.6
All other diseases	680-739	76	2.5	1.3	107	3.5	1.8	329	2.1	2.1	452	2.6	2.7
Motor vehicle traffic accidents	E810-E819	286	9.4	7.7	290	9.5	7.8	5066	31.8	31.4	3947	22.8	22.3
Accidental falls	E880-E888	152	5.0	2.1	189	6.2	2.7	727	4.6	4.8	836	4.8	4.9
All other accidents	rest of E800-E949	909	30.0	25.5	997	32.6	26.1	3457	21.7	21.1	3279	18.9	19.0
Suicide	E950-E959	265	8.7	5.3	260	8.5	5.3	687	4.3	4.3	785	4.5	4.4
Homicide	E960-E969	89	2.9	2.4	96	3.1	2.6	1823	11.4	11.0	1632	9.4	8.9
Injury unknown whether accidentally or purposely inflicted	E980-E989	1	0.0	0.0	1	0.0	0.0	2	0.0	0.0	71	0.4	0.4
Injury from operations of war and legal intervention	E970-E978,E990-E999	3	0.1	0.1	-	-	-	11	0.1	0.1	-	-	-

TABLE III-8 (*Cont.*).

Number of deaths by groups of causes and crude and age-adjusted death rates (per 100,000 population), by country, latest data available.

Cause of death		VENEZUELA						VIRGIN ISLANDS (UK)			
		1986			1987			1982			
		Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	Number	Crude rate	Age-adj. rate	
All causes		78436	440.9	461.7	80991	443.3	464.2	68	566.2	513.1	
Cholera	001	-	-	-	-	-	-	-	-	-	
Typhoid fever	002.0	2	0.0	0.0	-	-	-	-	-	-	
Paratyphoid fever and food poisoning	002.1-002.9 003,005	11	0.1	0.1	8	0.0	0.0	-	-	-	
Shigellosis and amebiasis	004,006	150	0.8	0.9	134	0.7	0.8	-	-	-	
Other intestinal infections	007-009	2141	12.0	13.2	2297	12.6	13.8	2	16.7	16.8	
Tuberculosis of respiratory system	010-012	531	3.0	3.1	465	2.5	2.7	-	-	-	
Other tuberculosis	013-018	79	0.4	0.5	84	0.4	0.4	-	-	-	
Plague	020	-	-	-	-	-	-	-	-	-	
Diphtheria	032	2	0.0	0.0	4	0.0	0.0	-	-	-	
Whooping cough	033	54	0.3	0.3	18	0.1	0.1	-	-	-	
Meningococcal infection	036	8	0.0	0.0	14	0.1	0.1	-	-	-	
Tetanus	037	58	0.3	0.3	45	0.2	0.2	-	-	-	
Septicemia	038	810	4.6	4.9	953	5.2	5.6	1	8.3	5.9	
Acute poliomyelitis	045	1	0.0	0.0	2	0.0	0.0	-	-	-	
Smallpox	050	-	-	-	-	-	-	-	-	-	
Measles	055	136	0.8	0.8	158	0.9	0.9	-	-	-	
Yellow fever	060	-	-	-	-	-	-	-	-	-	
Arthropod-borne encephalitis	062-064	-	-	-	-	-	-	-	-	-	
Viral hepatitis	070	101	0.6	0.6	115	0.6	0.6	-	-	-	
Rabies	071	3	0.0	0.0	1	0.0	0.0	-	-	-	
Malaria	084	15	0.1	0.1	22	0.1	0.1	-	-	-	
Trypanosomiasis	086	709	4.0	4.2	784	4.3	4.6	-	-	-	
Syphilis	090-097	18	0.1	0.1	9	0.0	0.1	-	-	-	
All other infectious and parasitic diseases	rest of 001-139	485	2.7	2.8	455	2.5	2.6	-	-	-	
Malignant neoplasm of stomach	151	1220	6.9	7.2	1415	7.7	8.1	-	-	-	
Malignant neoplasm of colon	153	321	1.8	1.9	389	2.1	2.2	-	-	-	
Malignant neoplasm of rectum, rectosigmoid junction and anus	154	146	0.8	0.9	136	0.7	0.8	-	-	-	
Malignant neoplasm of trachea, bronchus and lung	162	1008	5.7	5.9	1194	6.5	6.9	-	-	-	
Malignant neoplasm of female breast	174	487	2.7	2.9	554	3.0	3.2	2	16.7	12.5	
Malignant neoplasm of cervix uteri	180	494	2.8	2.9	565	3.1	3.3	...	...	...	
Leukemia	204-208	533	3.0	3.0	569	3.1	3.1	-	-	-	
Malignant neoplasm of other and unspecified sites	rest of 140-208	4289	24.1	25.2	4609	25.2	26.4	3	25.0	19.0	
Benign neoplasms,carcinoma in situ and other neoplasms	210-239	314	1.8	1.8	265	1.5	1.5	-	-	-	
Diabetes mellitus	250	2340	13.2	13.8	2362	12.9	13.5	-	-	-	
Kwashiorkor	260	15	0.1	0.1	13	0.1	0.1	-	-	-	
Nutritional marasmus	261	153	0.9	0.9	251	1.4	1.5	-	-	-	
Other protein-calorie malnutrition	262,263	310	1.7	1.8	299	1.6	1.8	-	-	-	
Avitaminosis	264-269	3	0.0	0.0	6	0.0	0.0	-	-	-	
Other endocrine and metabolic diseases	rest of 240-279	400	2.2	2.4	477	2.6	2.7	1	8.3	13.4	
Anemias	280-285	249	1.4	1.4	243	1.3	1.3	-	-	-	
Other diseases of blood and blood-forming organs	286-289	102	0.6	0.6	80	0.4	0.4	-	-	-	
Mental disorders	290-319	160	0.9	0.9	269	1.5	1.5	-	-	-	
Meningitis	320-322	466	2.6	2.8	417	2.3	2.5	1	8.3	10.8	
Other diseases of nervous system and sense organs	323-389	868	4.9	4.9	943	5.2	5.2	-	-	-	
Acute rheumatic fever	390-392	15	0.1	0.1	15	0.1	0.1	-	-	-	
Chronic rheumatic heart disease	393-398	165	0.9	0.9	170	0.9	1.0	-	-	-	
Hypertensive disease	401-405	1759	9.9	10.4	1948	10.7	11.2	-	-	-	
Acute myocardial infarction	410	5404	30.4	31.9	6414	35.1	36.9	6	50.0	38.6	
Other ischemic heart disease	411-414	1619	9.1	9.6	1714	9.4	9.9	-	-	-	
Diseases of pulmonary circulation and other heart disease	415-429	3419	19.2	20.2	3741	20.5	21.4	11	91.6	62.4	
Cerebrovascular disease	430-438	4734	26.6	28.0	5182	28.4	29.7	2	16.7	11.7	
Atherosclerosis	440	453	2.5	2.7	529	2.9	3.1	-	-	-	
Other diseases of circulatory system	441-459	455	2.6	2.7	483	2.6	2.8	1	8.3	7.2	
Pneumonia	480-486	2655	14.9	15.9	3316	18.2	19.3	4	33.3	26.9	
Influenza	487	98	0.6	0.6	62	0.3	0.4	-	-	-	
Bronchitis,emphysema and asthma	490-493	867	4.9	5.1	986	5.4	5.7	1	8.3	7.2	
Other diseases of respiratory system	460-478 494-519	1383	7.8	8.2	1529	8.4	8.8	3	25.0	24.6	
Ulcer of stomach and duodenum	531-533	329	1.8	1.9	340	1.9	2.0	...	...	...	
Appendicitis	540-543	100	0.6	0.6	98	0.5	0.5	...	...	...	
Intestinal obstruction and hernia	550-553 560	280	1.6	1.7	277	1.5	1.6	...	...	...	
Chronic liver disease and cirrhosis	571	1062	6.0	6.3	1292	7.1	7.4	...	...	...	
Other diseases of digestive system	rest of 520-579	1147	6.4	6.7	1268	6.9	7.2	-	-	-	
Nephritis, nephrotic syndrome and nephrosis	580-589	669	3.8	3.9	771	4.2	4.4	1	8.3	5.3	
Hyperplasia of prostate	600	84	0.5	0.5	80	0.4	0.5	-	-	-	
Other diseases of genitourinary system	590-599 601-629	260	1.5	1.5	261	1.4	1.5	1	8.3	5.9	
Abortion	630-639	65	0.4	0.3	55	0.3	0.3	-	-	-	
Direct obstetric causes	640-646 651-676	210	1.2	1.1	208	1.1	1.1	-	-	-	
Other obstetric causes	647,648,650	21	0.1	0.1	21	0.1	0.1	-	-	-	
Congenital anomalies	740-759	1718	9.7	10.6	1706	9.3	10.2	1	8.3	10.8	
Birth trauma	767	312	1.8	2.0	276	1.5	1.7	-	-	-	
Other conditions originating in the perinatal period	760-766 768-779	5409	30.4	33.8	5527	30.3	33.7	8	66.6	107.4	
Symptoms and ill-defined conditions	780-799	13401	75.3	79.5	10705	58.6	61.8	10	83.3	58.8	
All other diseases	680-739	471	2.6	2.7	488	2.7	2.7	-	-	-	
Motor vehicle traffic accidents	E810-E819	4343	24.4	23.8	4371	23.9	23.4	-	-	-	
Accidental falls	E880-E888	783	4.4	4.5	791	4.3	4.4	-	-	-	
All other accidents	rest of E800-E949	3181	17.9	17.9	3034	16.6	16.7	6	50.0	46.9	
Suicide	E950-E959	816	4.6	4.4	749	4.1	4.0	-	-	-	
Homicide	E960-E969	1419	8.0	7.5	1400	7.7	7.2	1	8.3	5.9	
Injury unknown whether accidentally or purposely inflicted	E980-E989	113	0.6	0.6	516	2.8	2.7	-	-	-	
Injury from operations of war and legal intervention	E970-E978,E990-E999	23	0.1	0.1	54	0.3	0.3	-	-	-	

TABLE III-9a(1).

Number of deaths from infectious and parasitic diseases (001–139), by age, sex, and country, latest data available.

Country	Year	All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
		Age in years											
Both sexes													
ARGENTINA	1986	7746	1281	417	115	180	323	502	689	977	1347	1848	67
BAHAMAS	1987	42	3	2	-	1	2	6	6	6	7	6	3
BARBADOS	1988	51	3	-	-	-	1	-	4	2	7	34	-
BELIZE	1986	52	20	9	3	1	4	-	3	1	3	8	-
BRAZIL (AREA OF INFORMATION)	1986	51505	22588	4537	1450	1609	2358	3175	3845	3971	3743	3769	460
CANADA	1988	1123	20	15	12	18	34	35	49	148	271	521	-
CHILE	1987	2401	291	81	52	72	115	145	219	315	413	697	1
COLOMBIA	1984	8904	1767	3042	455	372	411	366	475	553	656	702	105
COSTA RICA	1988	337	69	39	5	9	12	17	26	19	45	92	4
CUBA	1986	921	206	76	49	29	35	42	47	75	93	269	-
DOMINICA	1985	10	4	-	-	2	-	-	2	1	-	1	-
DOMINICAN REPUBLIC	1985	3296	1521	659	125	130	161	112	110	109	117	252	-
ECUADOR	1987	6206	2016	1613	316	301	273	291	256	292	341	466	39
EL SALVADOR	1984	2870	1070	606	162	96	80	105	115	170	174	279	13
GUADELOUPE	1981	73	17	-	3	4	4	4	6	7	11	17	-
GUATEMALA	1984	16372	3996	5832	1360	576	712	652	684	868	904	768	20
GUYANA	1984	146	11	10	13	14	11	11	18	19	20	12	7
HONDURAS	1981	3091	1204	1029	238	49	45	49	82	102	110	183	-
JAMAICA	1984	686	258	122	22	10	13	16	19	23	73	127	3
MARTINIQUE	1985	38	-	-	-	-	-	-	4	7	10	17	-
MEXICO	1986	43597	15248	7472	1960	1351	1563	1920	2170	2605	3026	6022	260
NETHERLANDS ANTILLES (CURACAO)	1981	23	3	-	3	-	-	2	-	-	4	11	-
PANAMA	1987	515	106	107	31	26	24	32	34	31	51	89	4
PARAGUAY (AREA OF INFORMATION)	1986	1380	573	270	61	29	41	43	59	57	73	155	19
PERU	1983	18907	5716	4926	861	778	798	695	811	846	976	1621	879
PUERTO RICO	1987	430	18	1	1	5	20	28	31	42	74	210	-
ST. KITTS AND NEVIS	1985	22	3	3	-	1	-	1	2	2	...	...	-
SAINT LUCIA	1988	38	5	2	-	2	2	1	4	8	6	8	-
ST. VINCENT & THE GRENADINES	1986	19	7	1	1	-	1	3	1	2	1	2	-
SURINAME	1985	136	56	13	4	4	4	7	8	11	11	23	-
TRINIDAD AND TOBAGO	1986	156	10	12	2	5	15	17	15	23	27	39	1
UNITED STATES	1987	29643	660	297	189	387	1051	1482	1602	3459	6277	14233	6
URUGUAY	1987	600	69	24	5	9	14	31	39	80	118	203	8
VENEZUELA	1987	5558	2116	696	134	153	157	212	307	452	588	733	10
Male													
ARGENTINA	1986	4252	701	212	68	74	142	306	438	623	798	854	36
BAHAMAS	1987	21	1	1	-	-	1	3	5	4	4	1	1
BARBADOS	1988	30	3	-	-	-	-	-	3	2	4	18	-
BELIZE	1986	31	15	4	2	1	1	-	3	-	2	3	-
BRAZIL (AREA OF INFORMATION)	1986	29927	12767	2374	795	891	1489	2203	2591	2531	2181	1838	267
CANADA	1988	555	12	7	7	6	20	17	25	85	155	221	-
CHILE	1987	1332	174	47	20	33	67	79	145	209	252	305	1
COLOMBIA	1984	4916	995	1577	237	229	224	219	291	335	401	341	67
COSTA RICA	1988	199	39	27	2	4	6	11	15	13	32	49	1
CUBA	1988	524	108	39	27	20	13	26	29	47	53	162	-
DOMINICA	1985	6	1	-	-	1	-	-	2	1	-	1	-
DOMINICAN REPUBLIC	1985	1781	787	334	65	78	87	62	68	79	80	141	-
ECUADOR	1987	3389	1097	812	159	155	161	176	165	185	209	246	24
EL SALVADOR	1984	1578	580	326	74	52	41	66	89	112	102	152	4
GUADELOUPE	1981	36	9	-	1	3	-	3	3	4	6	7	-
GUATEMALA	1984	8448	1984	2884	728	272	416	368	408	532	484	360	12
GUYANA	1984	93	6	8	8	8	7	7	12	12	13	7	5
HONDURAS	1981	1715	679	556	127	21	29	24	48	60	66	105	-
JAMAICA	1984	355	141	53	14	6	12	8	13	8	46	51	3
MARTINIQUE	1985	18	-	-	-	-	-	-	3	3	6	6	-
MEXICO	1986	23164	8175	3779	1039	646	799	1105	1263	1537	1707	2972	142
NETHERLANDS ANTILLES (CURACAO)	1981	12	3	-	1	-	-	1	-	-	3	4	-
PANAMA	1987	303	62	58	14	16	16	20	17	23	35	38	4
PARAGUAY (AREA OF INFORMATION)	1986	759	299	151	35	14	21	28	34	41	52	69	15
PERU	1983	9728	2940	2425	417	400	443	379	497	492	528	770	437
PUERTO RICO	1987	251	7	1	-	1	13	23	22	24	40	120	-
ST. KITTS AND NEVIS	1985	12	2	1	-	1	-	1	-	1	...	...	-
SAINT LUCIA	1988	24	4	-	-	-	2	1	2	2	4	4	-
ST. VINCENT & THE GRENADINES	1986	9	2	1	-	-	1	1	1	1	1	1	-
SURINAME	1985	79	32	6	1	2	3	2	4	10	8	11	-
TRINIDAD AND TOBAGO	1986	85	6	8	-	2	9	5	7	12	14	21	1
UNITED STATES	1987	14508	365	164	95	214	665	958	974	2011	3406	5650	6
URUGUAY	1987	296	41	10	2	1	4	20	23	51	63	77	4
VENEZUELA	1987	3046	1170	338	67	79	83	127	183	291	350	352	6
Female													
ARGENTINA	1986	3449	577	203	42	106	179	194	249	351	543	986	19
BAHAMAS	1987	21	2	1	-	1	1	3	1	2	3	5	2
BARBADOS	1988	21	-	-	-	-	1	-	1	-	3	16	-
BELIZE	1986	21	5	5	1	-	3	-	-	1	1	5	-
BRAZIL (AREA OF INFORMATION)	1986	21526	9795	2159	655	718	868	969	1254	1438	1562	1929	179
CANADA	1988	568	8	8	5	12	14	18	24	63	116	300	-
CHILE	1987	1069	117	34	32	39	48	66	74	106	161	392	-
COLOMBIA	1984	3988	772	1465	218	143	187	147	184	218	255	361	38
COSTA RICA	1988	138	30	12	3	5	6	6	11	6	13	43	3
CUBA	1988	397	98	37	22	9	22	16	18	28	40	107	-
DOMINICA	1985	4	3	-	-	1	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	1515	734	325	60	52	74	50	42	30	37	111	-
ECUADOR	1987	2817	919	801	159	146	112	115	91	107	132	220	15
EL SALVADOR	1984	1292	490	280	88	44	39	39	46	58	72	127	9
GUADELOUPE	1981	37	8	-	2	1	4	1	3	3	5	10	-
GUATEMALA	1984	7924	2012	2948	632	304	296	284	276	336	420	408	8
GUYANA	1984	53	5	2	5	6	4	4	6	7	7	5	2
HONDURAS	1981	1376	525	473	111	28	16	25	34	42	44	78	-
JAMAICA	1984	331	117	69	8	4	1	8	6	15	27	76	-
MARTINIQUE	1985	20	-	-	-	-	-	-	1	4	4	11	-
MEXICO	1986	20433	7073	3693	921	705	764	815	907	1068	1319	3050	118
NETHERLANDS ANTILLES (CURACAO)	1981	11	-	2	-	-	-	1	-	-	1	7	-
PANAMA	1987	212	44	49	17	10	8	12	17	8	16	31	-
PARAGUAY (AREA OF INFORMATION)	1986	621	274	119	26	15	20	15	25	16	21	86	4
PERU	1983	9179	2776	2501	444	378	355	316	314	354	448	851	442
PUERTO RICO	1987	179	11	-	1	4	7	5	9	18	34	90	-
ST. KITTS AND NEVIS	1985	10	1	2	-	-	-	-	2	1	...	...	-
SAINT LUCIA	1988	14	1	2	-	2	-	-	2	1	2	4	-
ST. VINCENT & THE GRENADINES	1986	10	5	-	1	-	-	2	-	1	-	1	-
SURINAME	1985	57	24	7	3	2	1	-	4	1	3	12	-
TRINIDAD AND TOBAGO	1986	71	4	4	2	3	6	2	8	11	13	18	-
UNITED STATES	1987	15135	295	133	94	173	386	524	628	1448	2871	8583	-
URUGUAY	1987	304	28	14	3	8	10	11	16	29	55	126	4
VENEZUELA	1987	2512	946	358	67	74	74	85	124	161	238	381	4

TABLE III-9b(1).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from infectious and parasitic diseases (001–139), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	25.2	19.1	189.7	14.9	1.9	3.8	7.3	13.6	22.5	37.5	78.3	204.2
BAHAMAS	1987	16.9	14.4	69.3	8.7	-	1.9	4.8	22.0	30.7	44.2	80.2	135.7
BARBADOS	1988	19.8	...	...	...	...	-	2.2	-	21.7	11.6	46.1	306.3
BELIZE	1986	31.1	28.4	325.9	56.4	8.0	2.8	16.5	-	23.4	10.7	47.3	236.7
BRAZIL (AREA OF INFORMATION)	1986	37.2	33.0	423.5	30.1	4.5	5.7	10.7	21.9	37.6	55.4	91.5	201.8
CANADA	1988	4.3	2.0	5.3	1.0	0.3	0.4	0.7	0.9	1.9	6.2	16.2	49.6
CHILE	1987	19.2	16.0	109.5	7.7	2.1	2.8	5.5	9.4	20.6	40.7	89.0	284.5
COLOMBIA	1984	31.7	34.3	214.0	107.4	6.8	6.0	9.1	12.9	24.9	41.4	83.8	241.1
COSTA RICA	1988	11.8	11.9	84.8	12.2	0.8	1.5	2.5	5.9	13.6	14.4	60.0	269.0
CUBA	1988	9.1	8.9	109.6	12.0	2.6	1.3	2.4	3.3	4.9	10.6	18.3	92.0
DOMINICA	1985	13.2	14.6	234.9	-	-	10.9	-	-	45.4	25.5	-	52.6
DOMINICAN REPUBLIC	1985	51.4	72.1	1343.6	88.7	7.4	9.1	16.6	19.8	27.8	42.8	91.8	377.2
ECUADOR	1987	62.5	73.6	985.9	130.5	12.3	14.9	19.1	31.5	41.0	71.1	138.3	393.2
EL SALVADOR	1984	60.6	61.6	736.9	93.7	12.5	10.2	12.4	26.1	41.7	87.3	161.9	519.6
GUADELOUPE	1981	22.3	19.5	262.1	-	3.9	5.5	9.2	12.3	21.7	32.1	68.8	170.0
GUATEMALA	1984	211.5	200.5	1280.4	532.4	62.9	38.5	70.6	100.6	142.7	266.6	574.0	1111.4
GUYANA	1984	15.6	16.0	72.5	10.1	5.8	6.7	7.0	13.2	30.6	44.0	75.2	112.1
HONDURAS	1981	80.9	73.0	747.7	177.4	21.8	6.7	9.6	15.4	36.0	69.9	143.6	680.3
JAMAICA	1984	29.8	31.1	480.0	50.2	4.1	1.8	3.9	10.0	13.9	18.7	81.5	247.6
MARTINIQUE	1985	11.6	5.0	-	-	-	-	-	-	13.5	27.3	52.9	130.8
MEXICO	1986	53.7	54.5	593.8	77.3	8.8	7.9	13.5	26.5	43.6	80.4	163.0	591.1
NETHERLANDS ANTILLES (CURACAO)	1981	14.0	10.3	75.0	-	7.3	-	-	11.8	-	-	66.7	275.0
PANAMA	1987	22.6	23.6	183.9	45.8	5.5	5.4	7.0	13.8	21.9	28.6	74.0	214.3
PARAGUAY (AREA OF INFORMATION)	1986	60.7	69.6	1068.0	94.0	10.4	6.3	11.8	21.2	44.0	58.4	129.7	627.5
PERU	1983	101.1	94.1	829.6	217.6	18.2	20.5	29.5	38.3	62.0	100.1	203.1	845.2
PUERTO RICO	1987	12.1	7.0	28.0	0.3	0.1	0.7	3.8	6.5	9.9	17.1	40.2	190.7
ST. KITTS AND NEVIS	1985	47.8	...	292.4	69.1	-	9.1	-	32.8	86.6	78.4	...	...
SAINT LUCIA	1988	28.6	25.8	139.4	12.8	-	6.7	10.3	8.6	53.8	122.0	126.3	311.3
ST. VINCENT & THE GRENADINES	1986	18.1	21.3	258.5	7.7	3.5	-	7.5	46.2	18.7	48.7	27.9	97.1
SURINAME	1985	36.3	34.7	478.5	32.5	4.5	4.4	8.0	6.3	27.6	57.9	110.0	383.3
TRINIDAD AND TOBAGO	1986	13.0	10.9	31.4	10.5	0.8	1.9	7.4	5.3	17.6	35.9	60.4	182.2
UNITED STATES	1987	12.2	5.4	17.2	2.1	0.6	1.0	2.4	4.3	6.9	15.7	35.5	117.0
URUGUAY	1987	19.6	12.7	129.1	10.7	0.9	1.8	3.4	8.9	11.4	26.1	57.0	166.6
VENEZUELA	1987	30.4	32.5	409.5	32.2	3.0	4.1	5.5	11.3	26.0	56.6	139.4	367.6
Male													
ARGENTINA	1986	27.9	21.6	203.5	14.9	2.2	3.0	6.3	16.5	29.0	50.1	104.4	234.0
BAHAMAS	1987	17.0	15.6	46.3	8.7	-	-	4.8	22.8	52.8	63.4	102.8	63.3
BARBADOS	1988	24.6	...	...	...	...	-	-	-	36.6	28.2	66.7	450.0
BELIZE	1986	37.1	33.5	479.4	49.4	10.6	5.5	8.3	-	48.0	-	65.1	182.9
BRAZIL (AREA OF INFORMATION)	1986	43.3	38.8	478.5	31.3	5.0	6.3	13.5	30.7	51.0	72.0	111.0	214.1
CANADA	1988	4.3	2.3	6.3	0.9	0.4	0.3	0.9	0.9	1.9	7.4	20.7	55.1
CHILE	1987	21.5	19.5	127.7	8.7	1.6	2.6	6.4	10.5	28.2	57.8	124.6	325.5
COLOMBIA	1984	34.9	38.0	236.2	109.8	7.0	7.3	9.8	15.1	30.6	52.6	112.2	282.3
COSTA RICA	1988	13.7	14.7	92.9	16.5	0.6	1.3	2.5	7.6	15.6	20.0	90.7	342.7
CUBA	1988	10.1	9.6	111.9	12.0	2.8	1.7	1.8	4.0	6.0	13.3	20.6	108.2
DOMINICA	1985	15.7	17.6	134.7	-	-	10.4	-	-	104.7	56.5	-	140.8
DOMINICAN REPUBLIC	1985	55.2	76.2	1357.3	88.5	7.6	10.9	18.0	21.9	34.8	60.5	123.5	442.0
ECUADOR	1987	67.9	80.4	1056.2	129.5	12.1	15.1	22.4	38.0	53.2	92.0	177.9	465.0
EL SALVADOR	1984	66.3	69.1	767.8	98.9	11.5	10.9	12.5	32.6	50.5	119.0	213.8	687.8
GUADELOUPE	1981	22.6	20.3	276.1	-	2.6	8.2	-	19.0	23.4	36.7	85.7	175.0
GUATEMALA	1984	215.8	206.6	1251.8	516.9	66.2	35.8	82.0	113.4	169.3	327.8	622.1	1087.6
GUYANA	1984	19.8	20.4	77.0	16.0	7.0	7.5	8.8	17.4	42.1	55.6	101.6	142.9
HONDURAS	1981	89.5	81.5	824.7	191.0	23.2	5.7	12.3	15.0	42.1	82.6	176.9	846.8
JAMAICA	1984	31.2	33.0	514.3	43.1	5.1	2.1	7.2	10.7	20.3	14.0	111.4	235.0
MARTINIQUE	1985	11.3	5.7	-	-	-	-	-	-	21.7	25.4	66.7	120.0
MEXICO	1986	57.0	59.4	624.3	76.7	9.2	7.5	13.8	31.0	52.5	100.1	201.3	672.2
NETHERLANDS ANTILLES (CURACAO)	1981	14.6	11.9	150.0	-	4.8	-	-	12.5	-	-	100.0	200.0
PANAMA	1987	26.1	26.9	209.9	48.3	4.9	6.6	9.1	16.8	21.4	41.7	98.6	243.6
PARAGUAY (AREA OF INFORMATION)	1986	66.8	75.7	1067.2	103.6	11.8	8.0	12.1	28.0	52.0	87.2	200.0	657.1
PERU	1983	103.2	97.7	837.6	210.6	17.4	20.8	32.4	41.4	76.2	119.6	235.6	932.2
PUERTO RICO	1987	14.5	8.7	21.3	0.7	-	0.3	5.3	11.4	15.0	21.0	46.2	238.1
ST. KITTS AND NEVIS	1985	53.4	...	389.1	45.2	-	17.6	-	75.8	-	88.5	...	...
SAINT LUCIA	1988	37.3	37.3	226.1	-	-	-	22.2	18.2	60.1	259.9	187.8	400.0
ST. VINCENT & THE GRENADINES	1986	17.6	20.8	144.8	15.1	-	-	16.2	32.8	44.4	53.2	62.0	126.6
SURINAME	1985	42.7	42.7	553.4	30.0	2.2	4.4	12.5	13.3	28.6	100.0	160.0	550.0
TRINIDAD AND TOBAGO	1986	14.2	12.5	37.2	13.8	-	1.5	8.9	7.7	16.8	39.3	65.7	228.3
UNITED STATES	1987	12.2	6.3	18.6	2.2	0.5	1.1	3.1	5.7	8.6	19.4	43.5	131.5
URUGUAY	1987	19.7	13.7	150.4	8.8	0.7	0.4	1.9	11.6	13.6	34.9	67.4	161.4
VENEZUELA	1987	33.0	36.2	443.9	30.7	2.9	4.2	5.8	13.4	31.0	73.7	176.5	411.7
Female													
ARGENTINA	1986	22.3	16.6	174.4	14.7	1.4	4.5	8.1	10.6	16.1	25.8	56.8	182.6
BAHAMAS	1987	16.7	13.1	92.1	8.7	-	4.0	4.8	21.3	9.9	27.5	62.0	176.1
BARBADOS	1988	15.5	...	-	-	-	-	4.5	-	9.8	-	32.6	225.4
BELIZE	1986	25.1	23.1	166.3	63.5	5.5	-	24.6	-	-	20.8	30.6	287.4
BRAZIL (AREA OF INFORMATION)	1986	31.0	27.3	367.4	28.8	4.1	5.1	7.9	13.3	24.4	39.4	73.5	191.1
CANADA	1988	4.3	1.9	4.3	1.1	0.3	0.6	0.6	1.0	1.9	5.1	12.6	46.2
CHILE	1987	16.9	13.1	90.3	6.6	2.6	3.1	4.6	8.4	13.5	25.7	61.5	259.1
COLOMBIA	1984	28.5	30.8	190.8	104.9	6.6	4.7	8.4	10.5	19.3	31.1	59.9	211.9
COSTA RICA	1988	9.7	9.3	76.1	7.7	0.9	1.7	2.5	4.2	11.5	8.9	32.7	216.1
CUBA	1988	8.0	8.2	107.2	11.9	2.4	0.8	3.1	2.5	3.8	8.0	15.9	75.0
DOMINICA	1985	10.6	13.5	361.0	-	-	11.3	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	47.5	68.1	1329.2	88.8	7.2	7.3	15.3	17.8	21.0	24.1	59.0	318.1
ECUADOR	1987	57.1	67.0	913.4	131.5	12.5	14.6	15.8	24.9	29.0	51.1	102.2	335.4
EL SALVADOR	1984	54.8	55.0	703.4	88.2	13.8	9.4	12.2	19.4	33.0	57.6	120.4	401.9
GUADELOUPE	1981	22.1	18.8	248.0	-	5.2	2.8	17.5	6.0	20.3	27.5	55.6	186.7
GUATEMALA	1984	207.1	194.5	1309.9	548.5	59.5	41.2	59.0	87.7	115.9	205.8	527.0	1133.3
GUYANA	1984	11.4	11.7	67.7	4.1	4.5	5.8	5.1	9.3	19.7	32.4	50.7	86.2
HONDURAS	1981	72.2	64.8	667.2	163.7	20.4	7.7	6.9	15.7	29.9	57.1	112.0	537.9
JAMAICA	1984	28.5	29.3	444.2	57.5	3.0	1.4	0.6	9.3	8.2	22.8	65.9	256.8
MARTINIQUE	1985	11.9	4.4	-	-	-	-	-	-	6.3	29.0	40.4	137.5
MEXICO	1986	50.4	50.2	562.2	77.9	8.5	8.4	13.2	22.2	35.3	62.7	130.8	528.9
NETHERLANDS ANTILLES (CURACAO)	1981	13.4	8.6	-	-	10.0	-	-	11.1	-	-	33.3	350.0
PANAMA	1987	19.0	20.2	156.5	43.1	6.2	4.2	4.8	10.6	22.3	15.0	47.9	186.7
PARAGUAY (AREA OF INFORMATION)	1986	54.6	63.9	1068.9	84.2	9.0	4.5	11.5	14.6	38.4	31.6	69.3	605.6
PERU	1983	98.9	90.8	821.3	224.9	19.1	20.2	26.6	35.1	47.9	81.6	174.7	779.3
PUERTO RICO	1987	9.8	5.6	34.9	-	0.3	1.2	2.5	2.2	5.4	13.8	34.8	150.8
ST. KITTS AND NEVIS	1985	42.4	...	195.3	93.9	-	-	-	-	155.0	70.4	...	...
SAINT LUCIA	1988	20.4	17.1	55.0	26.1	-	13.3	-	-	48.8	26.5	76.3	254.8
ST. VINCENT & THE GRENADINES	1986	18.5	22.8	376.8	-	7.1	-	-	58.0	-	44.8	-	78.7
SURINAME	1985	30.0	27.7	405.3	35.0	6.8	4.4	3.8	-	26.7	11.1	60.0	300.0
TRINIDAD AND TOBAGO	1986	11.8	9.6	25.4	7.1	1.6	2.3	6.0	3.0	18.3	32.8	55.6	147.5
UNITED STATES	1987	12.1	4.5	15.8	1.9	0.6	0.9	1.8	3.0	5.2	12.4	29.2	109.0
URUGUAY	1987	19.6	11.8	106.9	12.8	1.1	3.3	4.9	6.2	9.2	18.1	48.4	170.0
VENEZUELA	1987	27.8	29.0	373.6	33.8	3.0	4.0	5.3	9.2	21.0	39.8	106.4	334.5

TABLE III-9a(2).

Number of deaths from enteritis and other diarrheal diseases (007–009), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	1059	645	168	13	5	8	19	11	28	43	115	4
BAHAMAS	1987	5	2	1	-	-	1	-	-	-	-	1	-
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	27	18	6	-	-	1	-	-	-	1	1	-
BRAZIL (AREA OF INFORMATION)	1986	24016	17974	2391	282	127	154	203	300	450	671	1271	193
CANADA	1988	47	-	2	-	-	-	-	-	3	9	33	-
CHILE	1987	435	134	24	9	5	4	8	10	20	45	176	-
COLOMBIA	1984	4064	1295	2046	134	32	38	30	48	82	105	218	36
COSTA RICA	1988	132	51	25	1	3	1	2	2	4	9	32	2
CUBA	1988	324	89	13	3	2	4	5	7	23	36	142	-
DOMINICA	1985	2	2	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	1738	1080	388	41	15	15	13	15	19	33	119	-
ECUADOR	1987	3519	1744	1236	109	37	23	32	33	36	83	170	16
EL SALVADOR	1984	1702	841	385	54	15	17	38	34	73	87	154	4
GUADELOUPE	1981	21	11	-	1	1	-	1	-	2	-	5	-
GUATEMALA	1984	10372	2480	3780	788	340	344	388	452	564	656	568	12
GUYANA	1984	3	-	-	-	-	-	-	-	-	2	1	-
HONDURAS	1981	1929	872	606	136	20	12	26	38	51	57	111	-
JAMAICA	1984	524	244	113	14	-	5	5	6	15	43	78	1
MARTINIQUE	1985	1	-	-	-	-	-	-	-	-	-	1	-
MEXICO	1986	26123	12961	5317	922	293	326	427	571	777	1120	3254	155
NETHERLANDS ANTILLES (CURACAO)	1981	5	1	-	2	-	-	-	-	-	-	2	-
PANAMA	1987	205	66	60	13	4	3	2	8	5	22	20	2
PARAGUAY (AREA OF INFORMATION)	1986	773	391	224	33	5	4	4	5	10	20	68	9
PERU	1983	9131	4024	3057	257	87	63	75	110	143	230	604	481
PUERTO RICO	1987	1	-	-	-	-	-	-	-	-	-	1	-
ST. VINCENT & THE GRENADINES	1986	11	6	1	1	-	1	1	-	1	-	-	-
SURINAME	1985	81	43	9	2	1	1	-	3	4	4	14	-
TRINIDAD AND TOBAGO	1986	33	7	10	1	-	-	-	2	3	3	7	-
UNITED STATES	1987	307	93	14	3	4	10	11	6	17	43	106	-
URUGUAY	1987	131	24	8	-	-	3	4	4	6	19	60	3
VENEZUELA	1987	2297	1529	394	30	14	14	16	23	42	76	156	3
Male													
ARGENTINA	1986	545	358	78	7	1	3	8	4	15	22	47	2
BAHAMAS	1987	2	-	1	-	-	1	-	-	-	-	-	-
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	18	14	2	-	-	1	-	-	-	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	13339	10193	1239	144	85	99	133	178	265	350	557	96
CANADA	1988	20	-	-	1	-	-	-	-	1	5	13	-
CHILE	1987	209	77	13	4	1	2	6	4	7	24	71	-
COLOMBIA	1984	2178	734	1091	81	22	17	10	22	40	50	89	22
COSTA RICA	1988	78	29	18	-	1	1	2	-	4	6	16	1
CUBA	1988	186	51	8	-	2	1	3	4	11	23	83	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	922	562	209	20	7	9	7	9	15	22	62	-
ECUADOR	1987	1835	949	617	49	19	15	18	22	20	41	80	5
EL SALVADOR	1984	964	465	222	28	6	7	25	20	42	60	87	2
GUADELOUPE	1981	12	7	-	1	1	-	-	-	1	-	2	-
GUATEMALA	1984	5380	1212	1900	436	180	180	224	284	328	340	288	8
GUYANA	1984	2	-	-	-	-	-	-	-	-	2	-	-
HONDURAS	1981	1075	483	333	75	10	6	12	22	27	36	61	-
JAMAICA	1984	266	133	52	10	-	5	2	2	6	24	31	1
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	13480	6945	2756	462	137	165	214	326	393	557	1441	84
NETHERLANDS ANTILLES (CURACAO)	1981	2	1	-	1	-	-	-	-	-	-	-	-
PANAMA	1987	120	36	37	6	3	2	1	3	4	17	9	2
PARAGUAY (AREA OF INFORMATION)	1986	409	207	127	20	2	1	3	2	6	10	22	9
PERU	1983	4534	2064	1498	137	44	35	39	57	62	108	247	243
PUERTO RICO	1987	1	-	-	-	-	-	-	-	-	-	1	-
ST. VINCENT & THE GRENADINES	1986	6	2	1	-	-	1	1	-	1	-	-	-
SURINAME	1985	45	25	4	-	1	1	-	1	3	3	7	-
TRINIDAD AND TOBAGO	1986	19	5	6	-	-	-	-	1	1	3	3	-
UNITED STATES	1987	137	40	8	2	2	8	8	4	7	21	37	-
URUGUAY	1987	62	12	5	-	-	1	3	-	6	9	26	-
VENEZUELA	1987	1230	845	206	11	8	9	6	15	25	40	63	2
Female													
ARGENTINA	1986	509	286	89	5	4	5	10	7	13	21	68	1
BAHAMAS	1987	3	2	-	-	-	-	-	-	-	-	1	-
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	9	4	4	-	-	-	-	-	-	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	10645	7759	1150	138	42	55	70	122	185	321	713	90
CANADA	1988	27	-	1	-	-	-	-	-	2	4	20	-
CHILE	1987	226	57	11	5	4	2	2	6	13	21	105	-
COLOMBIA	1984	1886	561	955	53	10	21	20	26	42	55	129	14
COSTA RICA	1988	54	22	7	1	2	-	-	2	-	3	16	1
CUBA	1988	138	38	5	3	-	3	2	3	12	13	59	-
DOMINICA	1985	2	2	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	816	518	179	21	8	6	6	6	4	11	57	-
ECUADOR	1987	1684	795	619	60	18	8	14	11	16	42	90	11
EL SALVADOR	1984	738	376	163	26	9	10	13	14	31	27	67	2
GUADELOUPE	1981	9	4	-	-	-	-	1	-	1	-	3	-
GUATEMALA	1984	4992	1268	1880	352	160	164	164	168	236	316	280	4
GUYANA	1984	1	-	-	-	-	-	-	-	-	-	1	-
HONDURAS	1981	854	379	273	61	10	6	14	16	24	21	50	-
JAMAICA	1984	258	111	61	4	-	-	3	4	9	19	47	-
MARTINIQUE	1985	1	-	-	-	-	-	-	-	-	-	1	-
MEXICO	1986	12643	6016	2561	460	156	161	213	245	384	563	1813	71
NETHERLANDS ANTILLES (CURACAO)	1981	3	-	-	1	-	-	-	-	-	-	2	-
PANAMA	1987	85	30	23	7	1	1	1	5	1	5	11	-
PARAGUAY (AREA OF INFORMATION)	1986	364	184	97	13	3	3	1	3	4	10	46	-
PERU	1983	4597	1960	1559	120	43	28	36	53	81	122	357	238
PUERTO RICO	1987	-	-	-	-	-	-	-	-	-	-	-	-
ST. VINCENT & THE GRENADINES	1986	5	4	-	1	-	-	-	-	-	-	-	-
SURINAME	1985	36	18	5	2	-	-	-	2	1	1	7	-
TRINIDAD AND TOBAGO	1986	14	2	4	1	-	-	-	1	2	-	4	-
UNITED STATES	1987	170	53	6	1	2	2	3	2	10	22	69	-
URUGUAY	1987	69	12	3	-	-	2	1	4	-	10	34	3
VENEZUELA	1987	1067	684	188	19	6	5	10	8	17	36	93	1

TABLE III-9b(2).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from enteritis and other diarrheal diseases (007–009), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	3.4	4.2	95.5	6.0	0.2	0.1	0.2	0.5	0.4	1.1	2.5	12.7
BAHAMAS	1987	2.0	2.6	46.2	4.4	-	-	2.4	-	-	-	-	22.6
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	16.2	15.3	293.4	37.6	-	-	4.1	-	-	-	15.8	29.6
BRAZIL (AREA OF INFORMATION)	1986	17.3	14.9	337.0	15.9	0.9	0.5	0.7	1.4	2.9	6.3	16.4	68.0
CANADA	1988	0.2	0.1	-	-	0.1	-	-	-	-	0.1	0.5	3.1
CHILE	1987	3.5	3.4	50.4	2.3	0.4	0.2	0.2	0.5	0.9	2.6	9.7	71.8
COLOMBIA	1984	14.5	16.6	156.8	72.2	2.0	0.5	0.8	1.1	2.5	6.1	13.4	74.9
COSTA RICA	1988	4.6	4.8	62.7	7.8	0.2	0.5	0.2	0.7	1.0	3.0	12.0	93.6
CUBA	1988	3.2	2.8	47.4	2.0	0.2	0.1	0.3	0.4	0.7	3.3	7.1	48.8
DOMINICA	1985	2.6	3.7	117.4	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	27.1	41.3	954.1	52.2	2.4	1.1	1.6	2.3	3.8	7.5	25.9	178.1
ECUADOR	1987	35.5	44.8	852.9	100.0	4.2	1.8	1.6	3.5	5.3	8.8	33.7	143.5
EL SALVADOR	1984	35.9	36.4	579.2	59.5	4.2	1.6	2.6	9.4	12.3	37.5	80.9	286.8
GUADELOUPE	1981	6.4	7.3	169.6	-	1.3	1.4	-	3.1	-	9.2	-	50.0
GUATEMALA	1984	134.0	127.5	794.6	345.1	36.5	22.7	34.1	59.8	94.3	173.2	416.5	822.0
GUYANA	1984	0.3	0.3	-	-	-	-	-	-	-	-	7.5	9.3
HONDURAS	1981	50.5	44.6	541.5	104.5	12.4	2.7	2.6	8.2	16.7	34.9	74.4	412.6
JAMAICA	1984	22.8	25.2	453.9	46.5	2.6	-	1.5	3.1	4.4	12.2	48.0	152.0
MARTINIQUE	1985	0.3	0.1	-	-	-	-	-	-	-	-	-	7.7
MEXICO	1986	32.2	32.4	504.8	55.0	4.2	1.7	2.8	5.9	11.5	24.0	60.3	319.4
NETHERLANDS ANTILLES (CURACAO)	1981	3.0	2.6	25.0	-	4.9	-	-	-	-	-	-	50.0
PANAMA	1987	9.0	9.9	114.5	25.7	2.3	0.8	0.9	0.9	5.1	4.6	31.9	62.1
PARAGUAY (AREA OF INFORMATION	1986	34.0	39.7	728.8	78.0	5.6	1.1	1.2	2.0	3.7	10.2	35.5	275.3
PERU	1983	48.8	44.3	584.0	135.1	5.4	2.3	2.3	4.1	8.4	16.9	47.9	314.9
PUERTO RICO	1987	0.0	0.0	-	-	-	-	-	-	-	-	-	0.8
ST. VINCENT & THE GRENADINES	1986	10.5	12.6	221.6	7.7	3.5	-	7.3	15.4	-	24.3	-	-
SURINAME	1985	21.6	20.9	367.4	22.5	2.2	1.1	2.0	-	10.3	21.1	40.0	233.3
TRINIDAD AND TOBAGO	1986	2.7	2.8	22.0	8.8	0.4	-	-	-	2.3	4.7	6.7	32.7
UNITED STATES	1987	0.1	0.1	2.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.9
URUGUAY	1987	4.3	3.1	44.9	3.8	-	-	0.7	1.1	1.2	2.0	9.2	49.2
VENEZUELA	1987	12.6	13.8	295.9	18.2	0.7	0.4	0.5	0.9	1.9	5.3	18.0	78.2
Male													
ARGENTINA	1986	3.6	4.4	103.9	5.5	0.2	0.0	0.1	0.4	0.3	1.2	2.9	12.9
BAHAMAS	1987	1.6	1.8	-	8.7	-	-	4.8	-	-	-	-	-
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	21.6	19.1	447.4	24.7	-	-	8.3	-	-	-	32.6	-
BRAZIL (AREA OF INFORMATION)	1986	19.3	16.6	382.0	16.3	0.9	0.6	0.9	1.9	3.5	7.5	17.8	64.9
CANADA	1988	0.2	0.1	-	-	0.1	-	-	-	-	0.1	0.7	3.2
CHILE	1987	3.4	3.6	56.5	2.4	0.3	0.1	0.2	0.8	0.8	1.9	11.9	75.8
COLOMBIA	1984	15.4	17.7	174.3	76.0	2.4	0.7	0.7	0.7	2.3	6.3	14.0	73.7
COSTA RICA	1988	5.4	5.8	69.1	11.0	-	0.3	0.4	1.4	-	6.1	17.0	111.9
CUBA	1988	3.6	3.1	52.8	2.5	-	0.2	0.1	0.5	0.8	3.1	8.9	55.4
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	28.6	42.8	969.3	55.4	2.3	1.0	1.9	2.5	4.6	11.5	34.0	194.4
ECUADOR	1987	36.8	46.8	913.7	98.4	3.7	1.9	2.1	3.9	7.1	9.9	34.9	151.2
EL SALVADOR	1984	40.5	41.5	615.6	67.4	4.3	1.3	2.1	12.4	14.6	44.6	125.8	393.7
GUADELOUPE	1981	7.5	9.0	214.7	-	2.6	2.7	-	-	-	9.2	-	50.0
GUATEMALA	1984	137.5	132.3	764.7	340.8	39.7	23.7	35.5	69.0	117.8	202.1	437.0	870.1
GUYANA	1984	0.4	0.4	-	-	-	-	-	-	-	-	15.8	-
HONDURAS	1981	56.1	49.7	598.8	114.4	13.7	2.7	2.6	7.5	19.3	37.2	96.5	491.9
JAMAICA	1984	23.3	26.0	485.2	42.2	3.6	-	3.0	2.7	3.1	10.5	58.1	142.9
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	33.2	33.7	530.3	56.0	4.1	1.6	2.8	6.0	13.5	25.6	65.7	325.9
NETHERLANDS ANTILLES (CURACAO)	1981	2.4	2.8	50.0	-	4.8	-	-	-	-	-	-	-
PANAMA	1987	10.4	11.1	121.9	30.8	2.1	1.2	1.1	0.8	3.8	7.2	47.9	57.7
PARAGUAY (AREA OF INFORMATION	1986	36.0	40.8	738.8	87.1	6.7	0.9	0.6	3.0	3.1	12.8	38.5	209.5
PERU	1983	48.1	43.7	588.0	130.1	5.7	2.3	2.6	4.3	8.7	15.1	48.2	299.0
PUERTO RICO	1987	0.1	0.0	-	-	-	-	-	-	-	-	-	2.0
ST. VINCENT & THE GRENADINES	1986	11.8	14.6	144.8	15.1	-	-	16.2	32.8	-	53.2	-	-
SURINAME	1985	24.3	24.6	432.4	20.0	-	2.2	4.2	-	7.1	30.0	60.0	350.0
TRINIDAD AND TOBAGO	1986	3.2	3.3	31.0	10.3	-	-	-	-	2.4	3.3	14.1	32.6
UNITED STATES	1987	0.1	0.1	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.9
URUGUAY	1987	4.1	3.2	44.0	4.4	-	-	0.5	1.7	-	4.1	9.6	54.5
VENEZUELA	1987	13.3	14.6	320.6	18.7	0.5	0.4	0.6	0.6	2.5	6.3	20.2	73.7
Female													
ARGENTINA	1986	3.3	4.0	86.4	6.4	0.2	0.2	0.2	0.5	0.5	1.0	2.2	12.6
BAHAMAS	1987	2.4	3.3	92.1	-	-	-	-	-	-	-	-	35.2
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	10.8	11.3	133.0	50.8	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	15.3	13.2	291.0	15.3	0.9	0.3	0.5	1.0	2.4	5.1	15.1	57.5
CANADA	1988	0.2	0.1	-	-	0.1	-	-	-	-	0.2	0.4	70.6
CHILE	1987	3.6	3.1	44.0	2.1	0.4	0.3	0.2	0.3	1.1	3.1	8.0	3.1
COLOMBIA	1984	13.5	15.4	138.6	68.4	1.6	0.3	0.9	1.4	2.7	6.0	12.9	69.4
COSTA RICA	1988	3.8	3.8	55.8	4.5	0.3	0.7	-	-	2.1	-	7.6	75.7
CUBA	1988	2.8	2.5	41.6	1.6	0.3	-	0.4	0.3	0.6	3.4	5.2	80.4
DOMINICA	1985	5.3	7.6	240.7	-	-	-	-	-	-	-	-	41.3
DOMINICAN REPUBLIC	1985	25.6	39.7	938.1	48.9	2.5	1.1	1.2	2.1	3.0	3.2	17.5	163.3
ECUADOR	1987	34.2	42.8	790.2	101.6	4.7	1.8	1.1	3.0	3.5	7.6	32.5	137.2
EL SALVADOR	1984	31.3	31.7	539.7	51.3	4.1	1.9	3.1	6.5	10.1	30.8	45.2	212.0
GUADELOUPE	1981	5.4	5.6	124.0	-	-	-	-	6.0	-	9.2	-	50.0
GUATEMALA	1984	130.5	122.8	825.5	349.8	33.2	21.7	32.7	50.7	70.5	144.5	396.5	777.8
GUYANA	1984	0.2	0.2	-	-	-	-	-	-	-	-	-	17.2
HONDURAS	1981	44.8	39.7	481.6	94.5	11.2	2.8	2.6	8.8	14.0	32.7	53.4	344.8
JAMAICA	1984	22.2	24.3	421.4	50.8	1.5	-	-	3.5	5.5	13.7	39.3	156.8
MARTINIQUE	1985	0.6	0.1	-	-	-	-	-	-	-	-	-	12.5
MEXICO	1986	31.2	31.1	478.1	54.0	4.2	1.9	2.8	5.8	9.5	22.5	55.8	314.4
NETHERLANDS ANTILLES (CURACAO)	1981	3.7	2.5	-	-	5.0	-	-	-	-	-	-	100.0
PANAMA	1987	7.6	8.5	106.7	20.2	2.6	0.4	0.6	0.9	6.6	1.9	15.0	66.3
PARAGUAY (AREA OF INFORMATION)	1986	32.0	38.3	717.8	68.6	4.5	1.3	1.7	1.0	4.4	7.9	33.0	323.9
PERU	1983	49.5	44.9	579.9	140.2	5.2	2.3	2.1	4.0	8.1	18.7	47.6	326.9
PUERTO RICO	1987	-	-	-	-	-	-	-	-	-	-	-	-
ST. VINCENT & THE GRENADINES	1986	9.3	11.4	301.4	-	7.1	-	-	-	-	-	-	-
SURINAME	1985	18.9	17.9	304.0	25.0	4.5	-	-	-	13.3	11.1	20.0	175.0
TRINIDAD AND TOBAGO	1986	2.3	2.3	12.7	7.1	0.8	-	-	-	2.3	6.0	-	32.8
UNITED STATES	1987	0.1	0.1	2.8	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.9
URUGUAY	1987	4.4	2.9	45.8	2.7	-	-	1.0	0.6	2.3	-	8.8	45.9
VENEZUELA	1987	11.8	12.9	270.1	17.8	0.9	0.3	0.4	1.1	1.4	4.2	16.1	81.7

TABLE III-9a(3).

Number of deaths from tuberculosis, all forms (010–018), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	1358	19	44	17	51	116	186	210	238	266	202	9
BAHAMAS	1987	15	-	-	-	-	-	2	5	4	2	2	-
BARBADOS	1988	1	-	-	-	-	-	-	-	-	-	1	-
BELIZE	1986	3	-	-	-	1	-	-	-	-	2	-	-
BRAZIL (AREA OF INFORMATION)	1986	5192	100	111	75	336	704	910	1009	843	646	391	67
CANADA	1988	108	-	-	1	2	2	5	20	28	50	-	-
CHILE	1987	648	1	3	5	26	49	72	106	142	130	113	1
COLOMBIA	1984	1769	13	75	55	130	223	195	257	283	321	183	34
COSTA RICA	1988	99	1	1	2	1	5	9	15	7	18	39	1
CUBA	1988	53	-	-	-	-	-	5	3	6	6	33	-
DOMINICA	1985	3	-	-	-	-	-	-	2	1	-	-	-
DOMINICAN REPUBLIC	1985	547	8	27	17	80	118	69	68	58	51	71	-
ECUADOR	1987	1278	14	35	38	164	165	175	154	172	173	175	13
EL SALVADOR	1984	197	8	10	5	12	10	20	30	38	27	34	2
GUADELOUPE	1981	9	-	-	-	-	1	-	1	4	1	2	-
GUATEMALA	1984	804	16	16	64	68	172	84	92	132	92	68	-
GUYANA	1984	14	-	-	-	-	3	3	2	1	5	-	-
HONDURAS	1981	136	2	7	1	7	16	10	25	30	21	17	-
JAMAICA	1984	25	-	-	-	3	-	1	4	1	7	8	1
MARTINIQUE	1985	8	-	-	-	-	-	-	1	2	3	2	-
MEXICO	1986	6618	63	145	155	410	678	876	986	1035	1036	1181	53
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	-	-	-	-	1	-
PANAMA	1987	151	2	13	3	9	13	26	20	20	19	24	2
PARAGUAY (AREA OF INFORMATION)	1986	198	5	3	4	9	20	25	32	33	27	38	2
PERU	1983	3954	44	164	175	422	513	470	524	485	479	555	123
PUERTO RICO	1987	65	-	-	-	-	5	10	11	10	10	19	-
ST. VINCENT & THE GRENADINES	1986	3	-	-	-	-	-	1	1	-	-	1	-
SURINAME	1985	7	-	-	1	-	-	-	2	2	-	2	-
TRINIDAD AND TOBAGO	1986	26	1	-	1	-	2	1	3	5	5	8	-
UNITED STATES	1987	1755	1	6	2	23	101	162	176	284	389	608	3
URUGUAY	1987	95	-	1	-	2	2	11	13	12	24	30	-
VENEZUELA	1987	529	3	8	10	25	46	55	87	94	104	95	2
Male													
ARGENTINA	1986	890	11	24	7	18	46	121	158	183	193	122	7
BAHAMAS	1987	12	-	-	-	-	-	1	5	4	1	1	-
BARBADOS	1988	1	-	-	-	-	-	-	-	-	-	1	-
BELIZE	1986	1	-	-	-	-	-	-	-	-	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	3677	52	71	39	166	468	693	760	627	469	284	48
CANADA	1988	68	-	-	-	-	1	1	5	11	18	32	-
CHILE	1987	453	1	2	-	10	26	40	85	112	101	75	1
COLOMBIA	1984	1116	6	43	25	82	124	128	163	187	223	111	24
COSTA RICA	1988	65	1	1	2	1	3	6	11	3	13	24	-
CUBA	1988	38	-	-	-	-	-	3	3	4	2	26	-
DOMINICA	1985	3	-	-	-	-	-	-	2	1	-	-	-
DOMINICAN REPUBLIC	1985	329	4	12	6	36	60	39	43	42	37	50	-
ECUADOR	1987	787	7	16	19	87	100	110	102	115	116	104	11
EL SALVADOR	1984	131	5	3	3	8	6	14	22	31	16	22	1
GUADELOUPE	1981	7	-	-	-	-	-	-	1	3	1	2	-
GUATEMALA	1984	476	16	12	32	20	108	52	52	96	68	20	-
GUYANA	1984	11	-	-	-	-	3	1	2	1	4	-	-
HONDURAS	1981	85	-	1	1	2	13	5	16	20	15	12	-
JAMAICA	1984	21	-	-	-	2	-	1	4	-	7	6	1
MARTINIQUE	1985	6	-	-	-	-	-	-	1	2	3	-	-
MEXICO	1986	4079	35	70	80	207	369	558	605	686	690	746	33
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	93	1	7	1	5	7	17	12	14	12	15	2
PARAGUAY (AREA OF INFORMATION)	1986	130	-	1	3	6	11	20	20	23	23	22	1
PERU	1983	2282	25	69	76	222	308	254	337	309	293	319	70
PUERTO RICO	1987	41	-	-	-	-	3	8	7	7	6	10	-
ST. VINCENT & THE GRENADINES	1986	2	-	-	-	-	-	-	1	-	-	1	-
SURINAME	1985	7	-	-	1	-	-	-	2	2	-	2	-
TRINIDAD AND TOBAGO	1986	17	1	-	-	-	2	1	1	4	3	5	-
UNITED STATES	1987	1169	-	4	1	9	71	120	132	210	250	369	3
URUGUAY	1987	55	-	-	-	-	-	7	7	10	15	16	-
VENEZUELA	1987	333	1	4	3	10	23	37	53	77	64	60	1
Female													
ARGENTINA	1986	465	8	20	10	33	70	65	51	55	73	79	1
BAHAMAS	1987	3	-	-	-	-	-	1	-	-	1	1	-
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	2	-	-	-	1	-	-	-	-	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	1506	48	40	36	170	235	214	249	215	177	107	15
CANADA	1988	40	-	-	1	1	1	1	-	9	10	18	-
CHILE	1987	195	-	1	5	16	23	32	21	30	29	38	-
COLOMBIA	1984	653	7	32	30	48	99	67	94	96	98	72	10
COSTA RICA	1988	34	-	-	-	-	2	3	4	4	5	15	1
CUBA	1988	15	-	-	-	-	-	2	-	2	4	7	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	218	4	15	11	24	58	30	25	16	14	21	-
ECUADOR	1987	491	7	19	19	77	65	65	52	57	57	71	2
EL SALVADOR	1984	66	3	7	2	4	4	6	8	8	11	12	1
GUADELOUPE	1981	2	-	-	-	-	1	-	-	1	-	-	-
GUATEMALA	1984	328	-	4	32	48	64	32	40	36	24	48	-
GUYANA	1984	3	-	-	-	-	-	2	-	-	1	-	-
HONDURAS	1981	51	2	6	-	5	3	5	9	10	6	5	-
JAMAICA	1984	4	-	-	-	1	-	-	-	1	-	2	-
MARTINIQUE	1985	2	-	-	-	-	-	-	-	-	-	2	-
MEXICO	1986	2539	28	75	75	203	309	318	381	349	346	435	20
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	-	-	-	-	1	-
PANAMA	1987	58	1	6	2	4	6	9	8	6	7	9	-
PARAGUAY (AREA OF INFORMATION)	1986	68	5	2	1	3	9	5	12	10	4	16	1
PERU	1983	1672	19	95	99	200	205	216	187	176	186	236	53
PUERTO RICO	1987	24	-	-	-	-	2	2	4	3	4	9	-
ST. VINCENT & THE GRENADINES	1986	1	-	-	-	-	-	1	-	-	-	-	-
SURINAME	1985	-	-	-	-	-	-	-	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	9	-	-	1	-	-	-	2	1	2	3	-
UNITED STATES	1987	586	1	2	1	14	30	42	44	74	139	239	-
URUGUAY	1987	40	-	1	-	2	2	4	6	2	9	14	-
VENEZUELA	1987	196	2	4	7	15	23	18	34	17	40	35	1

TABLE III-9b(3).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from tuberculosis, all forms (010–018), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	4.4	3.0	2.8	1.6	0.3	1.1	2.6	5.1	6.9	9.1	15.5	22.3
BAHAMAS	1987	6.0	5.1	-	-	-	-	-	7.3	25.6	29.5	22.9	45.2
BARBADOS	1988	0.4	...	-	-	-	-	-	-	-	-	-	9.0
BELIZE	1986	1.8	1.3	-	-	-	-	4.1	-	-	-	31.5	-
BRAZIL (AREA OF INFORMATION)	1986	3.7	3.4	1.9	0.7	0.2	1.2	3.2	6.3	9.9	11.8	15.8	20.9
CANADA	1988	0.4	0.2	-	-	-	0.0	0.0	0.1	0.2	0.8	1.7	4.8
CHILE	1987	5.2	3.9	0.4	0.3	0.2	1.0	2.3	4.7	10.0	18.3	28.0	46.1
COLOMBIA	1984	6.3	6.0	1.6	2.6	0.8	2.1	5.0	6.8	13.5	21.2	41.0	62.8
COSTA RICA	1988	3.5	3.4	1.2	0.3	0.3	0.2	1.0	3.1	7.8	5.3	24.0	114.0
CUBA	1988	0.5	0.3	-	-	-	-	-	0.4	0.3	0.8	1.2	11.3
DOMINICA	1985	3.9	4.5	-	-	-	-	-	-	45.4	25.5	-	-
DOMINICAN REPUBLIC	1985	8.5	9.2	7.1	3.6	1.0	4.2	12.2	12.2	17.2	22.8	40.0	106.3
ECUADOR	1987	12.9	13.1	6.8	2.8	1.5	8.1	11.6	18.9	24.7	41.9	70.2	147.7
EL SALVADOR	1984	4.2	4.5	5.5	1.5	0.4	1.3	1.5	5.0	10.9	20.0	25.1	63.3
GUADELOUPE	1981	2.8	1.8	-	-	-	-	2.3	-	3.5	18.3	8.3	20.0
GUATEMALA	1984	10.4	11.5	5.1	1.5	3.0	4.5	17.0	13.0	19.2	40.5	58.4	98.4
GUYANA	1984	1.5	1.4	-	-	-	-	1.9	3.6	3.4	2.3	18.8	-
HONDURAS	1981	3.6	4.3	1.2	1.2	0.1	1.0	3.4	3.1	11.0	20.5	27.4	63.2
JAMAICA	1984	1.1	0.8	-	-	-	0.5	-	0.6	2.9	0.8	7.8	15.6
MARTINIQUE	1985	2.4	1.2	-	-	-	-	-	-	3.4	7.8	15.9	15.4
MEXICO	1986	8.1	8.6	2.5	1.5	0.7	2.4	5.8	12.1	19.8	32.0	55.8	115.9
NETHERLANDS ANTILLES (CURACAO)	1981	0.6	0.3	-	-	-	-	-	-	-	-	-	25.0
PANAMA	1987	6.6	6.3	3.5	5.6	0.9	1.9	3.8	11.2	12.9	18.5	27.6	74.5
PARAGUAY (AREA OF INFORMATION)	1986	8.7	9.3	9.3	1.0	0.7	1.9	5.8	12.3	23.9	33.8	48.0	153.8
PERU	1983	21.1	20.8	6.4	7.2	3.7	11.1	19.0	25.9	40.0	57.4	99.7	289.4
PUERTO RICO	1987	1.8	1.2	-	-	-	-	1.0	2.5	3.5	4.1	5.4	17.3
ST. VINCENT & THE GRENADINES	1986	2.9	3.6	-	-	-	-	-	15.4	18.7	-	-	48.5
SURINAME	1985	1.9	1.7	-	-	1.1	-	-	-	8.9	10.5	-	33.3
TRINIDAD AND TOBAGO	1986	2.2	1.7	3.1	-	0.4	-	1.0	0.8	3.5	7.8	11.2	37.4
UNITED STATES	1987	0.7	0.3	0.0	0.0	0.0	0.1	0.2	0.5	0.8	1.3	2.2	5.0
URUGUAY	1987	3.1	1.5	-	0.4	-	0.4	0.5	3.1	3.8	3.9	11.6	24.6
VENEZUELA	1987	2.9	3.0	0.6	0.4	0.2	0.7	1.6	2.9	7.4	11.8	24.6	47.6
Male													
ARGENTINA	1986	5.8	3.9	3.2	1.7	0.2	0.7	2.0	6.5	10.5	14.7	25.3	33.4
BAHAMAS	1987	9.7	9.0	-	-	-	-	-	7.6	52.8	63.4	25.7	63.3
BARBADOS	1988	0.8	...	-	-	-	-	-	-	-	-	-	25.0
BELIZE	1986	1.2	0.7	-	-	-	-	-	-	-	-	32.6	-
BRAZIL (AREA OF INFORMATION)	1986	5.3	4.9	1.9	0.8	0.2	1.2	4.3	9.7	15.0	17.8	25.9	33.1
CANADA	1988	0.5	0.2	-	-	-	-	0.0	0.1	0.4	1.0	2.4	8.0
CHILE	1987	7.3	5.9	0.7	0.4	-	0.8	2.5	5.3	16.5	31.0	50.0	80.0
COLOMBIA	1984	7.9	7.9	1.4	3.0	0.7	2.6	5.5	8.8	17.2	29.4	62.4	91.9
COSTA RICA	1988	4.5	4.8	2.4	0.6	0.6	0.3	1.2	4.2	11.5	4.6	36.8	167.8
CUBA	1988	0.7	0.4	-	-	-	-	-	0.5	0.6	1.1	0.8	17.4
DOMINICA	1985	7.8	10.4	-	-	-	-	-	-	104.7	56.5	-	-
DOMINICAN REPUBLIC	1985	10.2	11.2	6.9	3.2	0.7	5.0	12.4	13.8	22.0	32.2	57.1	156.7
ECUADOR	1987	15.8	16.6	6.7	2.6	1.5	8.5	13.9	23.7	32.9	57.2	98.7	196.6
EL SALVADOR	1984	5.5	6.4	6.6	0.9	0.5	1.7	1.8	6.9	16.1	32.9	33.5	99.5
GUADELOUPE	1981	4.4	2.8	-	-	-	-	-	-	7.8	27.5	14.3	50.0
GUATEMALA	1984	12.2	13.5	10.1	2.2	2.9	2.6	21.3	16.0	21.6	59.1	87.4	60.4
GUYANA	1984	2.3	2.2	-	-	-	-	3.8	2.5	7.0	4.6	31.3	-
HONDURAS	1981	4.4	5.6	-	0.3	0.2	0.5	5.5	3.1	14.0	27.6	40.2	96.8
JAMAICA	1984	1.8	1.4	-	-	-	0.7	-	1.3	6.3	-	16.9	27.6
MARTINIQUE	1985	3.8	2.1	-	-	-	-	-	-	7.2	16.9	33.3	-
MEXICO	1986	10.0	11.2	2.7	1.4	0.7	2.4	6.4	15.7	25.1	44.7	81.4	168.7
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	8.0	7.6	3.4	5.8	0.3	2.1	4.0	14.3	15.1	25.4	33.8	96.2
PARAGUAY (AREA OF INFORMATION)	1986	11.4	12.8	-	0.7	1.0	2.6	6.3	20.0	30.6	48.9	88.5	209.5
PERU	1983	24.2	24.8	7.1	6.0	3.2	11.6	22.5	27.8	51.7	75.1	130.7	386.2
PUERTO RICO	1987	2.4	1.6	-	-	-	-	1.2	4.0	4.8	6.1	6.9	19.8
ST. VINCENT & THE GRENADINES	1986	3.9	4.8	-	-	-	-	-	-	44.4	-	-	128.8
SURINAME	1985	3.8	3.7	-	-	2.2	-	-	-	14.3	20.0	-	100.0
TRINIDAD AND TOBAGO	1986	2.8	2.4	6.2	-	-	-	2.0	1.5	2.4	13.1	14.1	54.3
UNITED STATES	1987	1.0	0.5	-	0.1	0.0	0.0	0.3	0.7	1.2	2.0	3.2	8.6
URUGUAY	1987	3.7	1.8	-	-	-	-	-	4.1	4.2	6.8	16.1	33.5
VENEZUELA	1987	3.6	3.9	0.4	0.4	0.1	0.5	1.6	3.9	9.0	19.5	32.3	70.2
Female													
ARGENTINA	1986	3.0	2.2	2.4	1.4	0.3	1.4	3.2	3.6	3.3	4.0	7.6	14.6
BAHAMAS	1987	2.4	1.6	-	-	-	-	-	7.1	-	-	20.7	35.2
BARBADOS	1988	-	-	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	2.4	1.8	-	-	-	-	8.2	-	-	-	30.6	-
BRAZIL (AREA OF INFORMATION)	1986	2.2	1.9	1.8	0.5	0.2	1.2	2.1	2.9	4.8	5.9	8.3	10.6
CANADA	1988	0.3	0.1	-	-	-	0.0	0.0	0.1	-	0.7	1.1	2.8
CHILE	1987	3.1	2.3	-	0.2	0.4	1.3	2.2	4.1	3.8	7.3	11.1	25.1
COLOMBIA	1984	4.7	4.4	1.7	2.3	0.9	1.6	4.4	4.8	9.9	13.7	23.0	42.3
COSTA RICA	1988	2.4	2.1	-	-	-	-	0.8	2.1	4.2	5.9	12.6	75.4
CUBA	1988	0.3	0.2	-	-	-	-	-	0.3	-	0.6	1.6	4.9
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	6.8	7.2	7.2	4.1	1.3	3.4	12.0	10.6	12.5	12.9	22.3	60.2
ECUADOR	1987	10.0	9.9	7.0	3.1	1.5	7.7	9.2	14.1	16.5	27.2	44.2	108.2
EL SALVADOR	1984	2.8	2.8	4.3	2.2	0.3	0.9	1.2	3.0	5.7	7.9	18.4	38.0
GUADELOUPE	1981	1.2	1.0	-	-	-	-	4.4	-	-	9.2	-	-
GUATEMALA	1984	8.6	9.4	-	0.7	3.0	6.5	12.8	9.9	16.8	22.0	30.1	133.3
GUYANA	1984	0.6	0.6	-	-	-	-	-	4.6	-	-	7.2	-
HONDURAS	1981	2.7	3.1	2.5	2.1	-	1.4	1.3	3.1	7.9	13.6	15.3	34.5
JAMAICA	1984	0.3	0.2	-	-	-	0.4	-	-	-	1.5	-	6.8
MARTINIQUE	1985	1.2	0.3	-	-	-	-	-	-	-	-	-	25.0
MEXICO	1986	6.3	6.3	2.2	1.6	0.7	2.4	5.3	8.7	14.8	20.5	34.3	75.4
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	0.6	-	-	-	-	-	-	-	-	-	50.0
PANAMA	1987	5.2	5.0	3.6	5.3	0.7	1.7	3.6	7.9	10.5	11.3	21.0	54.2
PARAGUAY (AREA OF INFORMATION)	1986	6.0	6.2	19.5	1.4	0.3	1.3	5.2	4.8	17.5	19.8	13.2	112.7
PERU	1983	18.0	17.2	5.6	8.5	4.3	10.7	15.3	24.0	28.5	40.6	72.5	216.1
PUERTO RICO	1987	1.3	0.7	-	-	-	-	0.7	0.9	2.4	2.3	4.1	15.1
ST. VINCENT & THE GRENADINES	1986	1.9	3.0	-	-	-	-	-	29.0	-	-	-	-
SURINAME	1985	-	-	-	-	-	-	-	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	1.5	1.2	-	-	0.8	-	-	-	4.6	3.0	8.5	24.6
UNITED STATES	1987	0.5	0.2	0.1	0.0	0.0	0.1	0.1	0.2	0.4	0.6	1.4	3.0
URUGUAY	1987	2.6	1.3	-	0.9	-	0.8	1.0	2.3	3.4	1.2	7.9	18.9
VENEZUELA	1987	2.2	2.1	0.8	0.4	0.3	0.8	1.6	1.9	5.7	4.2	17.9	30.7

TABLE III-9a(4).

Number of deaths from malignant neoplasms (140–208), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	42683	51	205	308	309	710	2037	4903	10006	12058	11860	236
BAHAMAS	1987	267	1	1	2	5	10	18	35	67	75	53	-
BARBADOS	1988	413	-	-	-	2	6	14	25	67	126	173	-
BELIZE	1986	52	1	2	-	1	2	4	3	11	15	11	2
BRAZIL (AREA OF INFORMATION)	1986	72686	146	721	1184	1369	2457	5349	11140	17471	17813	14733	301
CANADA	1988	50756	8	66	144	203	541	1565	3993	10518	15691	18020	7
CHILE	1987	13081	10	49	102	169	304	695	1480	2852	3595	3924	1
COLOMBIA	1984	16960	12	187	304	457	603	1155	2361	3671	4260	3740	210
COSTA RICA	1988	2328	10	26	31	58	89	134	225	401	561	790	3
CUBA	1988	12977	8	44	78	166	213	591	1312	2253	3407	4903	2
DOMINICA	1985	55	-	-	-	1	3	2	6	8	14	21	-
DOMINICAN REPUBLIC	1985	1760	4	21	34	43	75	143	261	352	391	436	-
ECUADOR	1987	4738	11	58	131	124	163	325	587	848	1075	1385	33
EL SALVADOR	1984	1033	2	14	30	37	51	109	178	197	212	196	7
GUADELOUPE	1981	316	-	-	3	5	7	12	40	70	95	84	-
GUATEMALA	1984	2308	12	16	44	80	120	220	360	420	536	492	8
GUYANA	1984	280	2	2	4	9	12	23	40	58	77	51	2
HONDURAS	1981	569	4	12	16	30	27	60	75	107	125	113	-
JAMAICA	1984	2073	1	8	24	41	58	104	216	389	567	651	14
MARTINIQUE	1985	425	-	2	1	5	3	16	35	106	115	141	1
MEXICO	1986	35930	128	431	916	1008	1300	2528	4640	7044	7958	9619	158
NETHERLANDS ANTILLES (CURACAO)	1981	186	-	-	1	-	4	8	25	26	65	57	-
PANAMA	1987	1236	3	15	23	33	46	84	125	232	342	326	7
PARAGUAY (AREA OF INFORMATION)	1986	1097	4	14	19	34	40	84	152	222	252	248	28
PERU	1985	5563	20	53	93	149	211	394	767	1006	1341	1503	126
PUERTO RICO	1987	3693	1	9	19	37	48	148	336	682	998	1410	5
ST. KITTS AND NEVIS	1985	42	-	-	-	2	-	-	3	9	...	...	-
SAINT LUCIA	1988	104	-	-	-	-	1	7	9	24	26	37	-
ST. VINCENT & THE GRENADINES	1986	73	1	1	1	1	2	-	8	20	20	18	1
SURINAME	1985	189	-	1	2	6	7	10	31	42	51	38	1
TRINIDAD AND TOBAGO	1986	1003	1	4	11	18	19	53	102	184	325	284	2
UNITED STATES	1987	476927	101	548	1138	1939	5371	14934	38240	88424	149046	167153	33
URUGUAY	1987	6677	2	14	33	32	73	222	638	1480	1927	2242	14
VENEZUELA	1987	9431	18	105	207	266	357	709	1297	2077	2250	2132	13
Male													
ARGENTINA	1986	23907	25	112	167	194	300	936	2823	5974	7136	6115	125
BAHAMAS	1987	165	-	1	1	3	6	9	22	41	52	30	-
BARBADOS	1988	211	-	-	-	1	1	3	10	35	69	92	-
BELIZE	1986	28	-	1	-	-	-	2	1	6	8	8	1
BRAZIL (AREA OF INFORMATION)	1986	39692	74	386	675	775	1108	2335	5821	10130	10296	7933	159
CANADA	1988	28104	3	35	91	128	250	654	2005	6043	9224	9867	4
CHILE	1987	6372	3	31	58	110	162	255	621	1457	1882	1792	1
COLOMBIA	1984	8087	5	104	161	252	249	401	949	1732	2242	1890	102
COSTA RICA	1988	1275	6	18	17	35	40	47	110	212	334	454	2
CUBA	1988	7651	2	23	46	87	89	254	624	1223	2108	3193	2
DOMINICA	1985	34	-	-	-	-	1	2	2	2	11	16	-
DOMINICAN REPUBLIC	1985	886	1	9	19	18	29	52	83	183	225	267	-
ECUADOR	1987	2209	4	25	74	62	71	115	233	409	539	665	12
EL SALVADOR	1984	421	2	5	14	20	17	37	54	89	92	90	1
GUADELOUPE	1981	179	-	-	2	3	2	7	24	41	61	39	-
GUATEMALA	1984	940	4	4	24	44	36	76	148	152	228	220	4
GUYANA	1984	135	2	-	4	6	7	8	14	26	40	27	1
HONDURAS	1981	208	2	4	9	12	5	15	22	38	55	46	-
JAMAICA	1984	1069	1	9	14	22	26	36	76	194	330	360	7
MARTINIQUE	1985	235	-	1	-	3	-	5	15	59	73	78	1
MEXICO	1986	16473	73	258	519	572	568	758	1591	3160	4038	4869	67
NETHERLANDS ANTILLES (CURACAO)	1981	97	-	-	-	-	3	3	10	20	37	24	-
PANAMA	1987	668	1	8	6	19	17	31	57	134	212	177	6
PARAGUAY (AREA OF INFORMATION)	1986	518	2	5	8	20	16	30	50	111	133	128	15
PERU	1983	2626	9	32	56	74	81	118	279	456	706	760	55
PUERTO RICO	1987	2157	-	3	9	21	18	58	189	416	593	846	4
ST. KITTS AND NEVIS	1985	22	-	-	-	2	-	-	3	5	...	...	-
SAINT LUCIA	1988	50	-	-	-	-	-	2	5	11	14	18	-
ST. VINCENT & THE GRENADINES	1986	32	-	-	1	1	1	-	3	9	9	8	-
SURINAME	1985	86	-	1	1	3	4	-	11	16	28	22	-
TRINIDAD AND TOBAGO	1986	509	-	3	6	9	7	20	40	90	170	163	1
UNITED STATES	1987	254653	51	300	670	1166	2615	6616	19127	54775	84815	84499	19
URUGUAY	1987	3910	2	10	16	22	27	111	360	957	1186	1211	8
VENEZUELA	1987	4569	10	54	110	158	141	252	527	1034	1193	1082	8
Female													
ARGENTINA	1986	18609	26	90	129	112	406	1093	2069	4006	4893	5702	83
BAHAMAS	1987	102	1	-	1	2	4	9	13	26	23	23	-
BARBADOS	1988	202	-	-	-	1	5	11	15	32	57	81	-
BELIZE	1986	24	1	1	-	1	2	2	2	5	6	3	1
BRAZIL (AREA OF INFORMATION)	1986	32936	74	333	509	594	1347	3006	5314	7333	7506	6791	129
CANADA	1988	22652	5	31	53	75	291	911	1988	4475	6467	8353	3
CHILE	1987	6709	7	18	44	59	142	440	859	1395	1713	2032	-
COLOMBIA	1984	8873	7	83	143	205	354	754	1412	1939	2018	1850	108
COSTA RICA	1988	1053	4	8	14	23	49	87	115	189	227	336	1
CUBA	1988	5326	6	21	32	79	124	337	688	1030	1299	1710	-
DOMINICA	1985	21	-	-	-	1	2	-	4	6	3	5	-
DOMINICAN REPUBLIC	1985	874	3	12	15	25	46	91	178	169	166	169	-
ECUADOR	1987	2529	7	31	57	62	92	210	354	439	536	720	21
EL SALVADOR	1984	612	-	9	16	17	34	72	124	108	120	106	6
GUADELOUPE	1981	137	-	-	1	2	5	5	16	29	34	45	-
GUATEMALA	1984	1368	8	12	20	36	84	144	212	268	308	272	4
GUYANA	1984	145	-	2	-	3	5	15	26	32	37	24	1
HONDURAS	1981	361	2	8	7	18	22	45	53	69	70	67	-
JAMAICA	1984	1004	-	5	10	19	32	68	140	195	237	291	7
MARTINIQUE	1985	190	-	1	1	2	3	11	20	47	42	63	-
MEXICO	1986	19457	55	173	397	436	732	1770	3049	3884	3920	4950	91
NETHERLANDS ANTILLES (CURACAO)	1981	89	-	-	1	-	1	5	15	6	28	33	-
PANAMA	1987	568	2	7	17	14	29	53	68	98	130	149	1
PARAGUAY (AREA OF INFORMATION)	1986	579	2	9	11	14	24	54	102	111	119	120	13
PERU	1983	3037	11	21	37	75	130	276	488	550	635	743	71
PUERTO RICO	1987	1536	1	6	10	16	30	90	147	266	405	564	1
ST. KITTS AND NEVIS	1985	20	-	-	-	-	-	-	-	4	...	...	-
SAINT LUCIA	1988	54	-	-	-	-	1	5	4	13	12	19	-
ST. VINCENT & THE GRENADINES	1986	41	1	1	-	-	1	-	5	11	11	10	1
SURINAME	1985	103	-	-	1	3	3	10	20	26	23	16	1
TRINIDAD AND TOBAGO	1986	494	1	1	5	9	12	33	62	94	155	121	1
UNITED STATES	1987	222274	50	248	468	773	2756	8318	19113	43649	64231	82654	14
URUGUAY	1987	2767	-	4	17	10	49	111	278	523	741	1031	6
VENEZUELA	1987	4862	8	51	97	108	216	457	770	1043	1057	1050	5

TABLE III-9b(4).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasms (140–208), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	138.9	72.9	7.6	7.3	5.1	6.4	16.0	55.3	160.3	384.2	700.8	1310.3
BAHAMAS	1987	107.2	84.3	23.1	4.4	3.7	9.7	23.8	66.1	178.9	493.7	859.1	1189.1
BARBADOS	1988	160.7	...	-	-	-	3.8	13.4	53.0	135.9	387.3	828.9	1558.6
BELIZE	1986	31.1	22.6	16.3	12.5	-	2.8	8.2	23.0	23.4	118.0	236.6	325.4
BRAZIL (AREA OF INFORMATION)	1986	52.5	46.7	2.8	4.8	3.7	4.9	11.2	37.0	109.0	243.9	435.4	786.7
CANADA	1988	194.5	82.2	2.1	4.3	3.9	4.6	11.6	41.9	153.2	444.0	939.7	1714.9
CHILE	1987	104.3	73.3	3.8	4.6	4.1	6.6	14.5	45.0	139.1	368.2	775.1	1560.8
COLOMBIA	1984	60.3	59.1	1.5	6.6	4.6	7.4	13.4	40.6	124.0	274.5	544.2	1284.3
COSTA RICA	1988	81.2	78.9	12.3	8.1	4.8	9.4	18.6	46.8	117.3	302.9	748.0	2309.9
CUBA	1988	127.8	70.3	4.3	6.9	4.2	7.3	14.7	46.0	137.1	319.1	669.6	1676.8
DOMINICA	1985	72.3	51.3	-	-	-	5.4	27.3	34.5	136.1	204.1	451.6	1105.3
DOMINICAN REPUBLIC	1985	27.4	31.3	3.5	2.8	2.0	3.0	7.8	25.3	66.0	138.1	306.7	652.7
ECUADOR	1987	47.8	48.7	5.4	4.5	5.1	6.1	11.4	35.2	94.0	206.5	435.9	1188.8
EL SALVADOR	1984	21.8	23.9	1.4	2.2	2.3	3.9	7.9	27.1	64.5	101.1	197.2	365.0
GUADELOUPE	1981	96.6	57.5	-	-	3.9	6.9	16.1	36.8	144.9	321.1	593.8	840.0
GUATEMALA	1984	29.8	34.7	3.8	1.5	2.0	5.3	11.9	33.9	75.1	129.0	340.3	712.0
GUYANA	1984	29.9	29.4	13.2	2.0	1.8	4.3	7.6	27.5	67.9	134.3	289.5	476.6
HONDURAS	1981	14.9	18.8	2.5	2.1	1.5	4.1	5.8	16.8	32.9	73.3	163.2	420.1
JAMAICA	1984	90.1	67.9	1.9	3.3	4.4	7.3	17.2	64.8	157.9	316.3	632.8	1269.0
MARTINIQUE	1985	129.6	63.1	-	8.8	1.9	6.6	6.0	44.9	118.2	414.1	608.5	1084.6
MEXICO	1986	44.2	46.3	5.0	4.5	4.1	5.9	11.2	34.9	93.2	217.5	428.6	963.8
NETHERLANDS ANTILLES (CURACAO)	1981	113.4	78.5	-	-	2.4	-	18.2	47.1	208.3	288.9	1083.3	1425.0
PANAMA	1987	54.4	48.1	5.2	6.4	4.1	6.9	13.4	36.1	80.4	214.0	496.4	1012.4
PARAGUAY (AREA OF INFORMATION)	1986	48.3	50.0	7.5	4.9	3.2	7.4	11.5	41.4	133.4	227.5	447.6	1004.0
PERU	1983	30.3	30.4	2.9	2.3	2.0	3.9	7.8	21.7	58.6	119.0	279.1	783.6
PUERTO RICO	1987	103.9	55.3	1.6	3.1	2.8	5.3	9.2	34.3	106.9	278.3	541.5	1280.7
ST. KITTS AND NEVIS	1985	91.2	...	-	-	-	18.2	-	-	129.9	352.9	...	...
SAINT LUCIA	1988	78.2	62.5	-	-	-	-	5.2	60.4	121.1	365.9	547.4	1439.7
ST. VINCENT & THE GRENADINES	1986	69.5	62.6	36.9	7.7	3.5	4.0	14.6	-	149.5	486.6	557.1	873.8
SURINAME	1985	50.4	44.7	-	2.5	2.2	6.7	14.0	31.3	106.9	221.1	510.0	633.3
TRINIDAD AND TOBAGO	1986	83.3	62.9	3.1	3.5	4.3	6.9	9.4	40.3	119.4	287.5	727.1	1327.1
UNITED STATES	1987	195.9	77.1	2.6	3.8	3.3	5.1	12.4	43.5	164.3	447.0	843.6	1373.8
URUGUAY	1987	218.3	92.0	3.7	6.3	6.1	6.5	17.7	63.4	165.9	482.7	930.4	1840.1
VENEZUELA	1987	51.6	54.0	3.5	4.9	4.6	7.1	12.6	37.8	109.7	260.0	533.3	1069.2
Male													
ARGENTINA	1986	156.8	88.6	7.3	7.9	5.5	8.0	13.4	50.5	186.9	480.2	933.7	1675.3
BAHAMAS	1987	133.9	115.7	-	8.7	3.6	11.5	28.7	68.4	232.3	649.8	1336.8	1898.7
BARBADOS	1988	173.2	...	-	-	-	3.8	4.5	24.6	122.0	493.0	1150.0	2300.0	
BELIZE	1986	33.5	23.9	-	12.4	-	-	-	23.5	16.0	133.0	293.2	487.8
BRAZIL (AREA OF INFORMATION)	1988	57.5	52.4	2.8	5.1	4.2	5.5	10.1	32.6	114.7	288.1	523.9	924.1
CANADA	1988	217.4	100.5	1.6	4.4	4.8	5.7	10.7	34.8	153.1	528.1	1231.2	2409.5
CHILE	1987	102.7	80.7	2.2	5.7	4.6	8.5	15.4	33.8	120.6	402.8	930.8	1912.5
COLOMBIA	1984	57.3	60.9	1.2	7.2	4.8	8.1	10.9	27.7	99.9	272.1	627.5	1564.6
COSTA RICA	1988	88.1	93.6	14.3	11.0	5.1	11.1	16.6	33.5	114.7	325.7	946.2	3174.8
CUBA	1988	148.0	78.8	2.1	7.1	4.8	7.5	12.0	39.0	129.3	345.5	817.4	2132.9
DOMINICA	1985	88.7	67.0	-	-	-	-	17.2	68.5	104.7	113.0	785.7	2233.5
DOMINICAN REPUBLIC	1985	27.4	31.6	1.7	2.4	2.2	2.5	6.0	18.4	42.5	140.2	347.2	837.0
ECUADOR	1987	44.3	47.5	3.9	4.0	5.7	6.1	9.9	24.8	75.2	203.4	458.7	1257.1
EL SALVADOR	1984	17.7	20.8	2.6	1.5	2.1	4.2	5.2	18.3	39.5	94.6	192.9	407.2
GUADELOUPE	1981	112.2	71.7	-	-	5.2	8.2	9.6	44.3	187.5	376.1	871.4	975.0
GUATEMALA	1984	24.0	28.7	2.5	0.7	2.2	5.8	7.1	23.4	61.4	93.7	293.1	664.7
GUYANA	1984	28.7	29.0	25.7	-	3.5	5.7	8.8	19.9	49.1	120.4	312.5	551.0
HONDURAS	1981	10.9	14.2	2.4	1.4	1.8	3.3	2.1	9.4	19.3	52.4	147.5	371.0
JAMAICA	1984	93.8	72.8	3.6	2.4	5.1	7.8	15.5	48.1	118.8	339.8	799.0	1659.0
MARTINIQUE	1985	147.3	74.0	-	8.4	-	8.0	-	29.8	108.7	500.0	811.1	1560.0
MEXICO	1986	40.5	45.2	5.6	5.2	4.6	6.6	9.8	21.3	86.1	205.8	476.1	1101.3
NETHERLANDS ANTILLES (CURACAO)	1981	118.3	85.8	-	-	-	-	27.3	37.5	166.7	500.0	1233.3	1200.0
PANAMA	1987	57.6	50.7	3.4	6.7	2.1	7.8	9.7	26.1	71.9	242.8	591.2	1134.6
PARAGUAY (AREA OF INFORMATION)	1986	45.6	50.1	7.1	3.4	2.7	8.6	9.2	30.0	76.5	236.2	511.5	1219.0
PERU	1983	27.9	30.3	2.6	2.8	2.3	3.9	5.9	12.9	42.8	110.9	315.0	920.1
PUERTO RICO	1987	124.7	68.0	-	2.0	2.6	6.0	7.3	26.8	129.2	364.0	685.5	1678.6
ST. KITTS AND NEVIS	1985	98.0	...	-	-	-	35.1	-	-	294.1	442.5	...	...
SAINT LUCIA	1988	77.6	69.5	-	-	-	-	-	36.5	150.2	394.3	657.3	1800.0
ST. VINCENT & THE GRENADINES	1986	62.7	62.6	-	-	6.9	8.0	16.2	-	133.3	478.7	566.0	1012.7
SURINAME	1985	46.5	43.8	-	5.0	2.2	6.7	18.7	-	78.6	160.0	560.0	1100.0
TRINIDAD AND TOBAGO	1986	84.8	67.3	-	5.2	4.6	7.0	6.9	30.7	95.9	295.1	798.1	1771.7
UNITED STATES	1987	214.8	93.6	2.6	4.0	3.8	6.0	12.1	39.1	169.1	528.4	1084.0	1967.4
URUGUAY	1987	260.0	116.3	7.3	6.8	5.8	8.8	13.0	64.3	213.6	654.6	1269.7	2537.7
VENEZUELA	1987	49.5	55.1	3.8	4.9	4.8	8.3	9.8	26.6	89.2	262.0	601.6	1265.5
Female													
ARGENTINA	1986	120.2	59.6	7.9	6.5	4.3	4.7	18.5	59.8	133.7	294.4	511.6	1055.7
BAHAMAS	1987	81.1	59.8	46.0	-	3.8	8.0	19.0	63.9	128.8	358.1	475.2	809.9
BARBADOS	1988	149.4	...	-	-	-	3.8	22.3	77.5	147.1	313.7	619.6	1140.8
BELIZE	1986	28.7	21.6	33.3	12.7	-	5.6	16.4	22.4	30.5	104.0	183.5	172.4
BRAZIL (AREA OF INFORMATION)	1986	47.4	41.2	2.8	4.4	3.2	4.2	12.2	41.2	103.2	201.1	353.2	672.7
CANADA	1988	172.1	68.5	2.7	4.1	3.0	3.5	12.4	49.0	153.3	365.5	702.5	1285.9
CHILE	1987	105.9	68.2	5.4	3.5	3.6	4.7	13.6	55.8	156.4	337.9	654.8	1343.0
COLOMBIA	1984	63.3	58.4	1.7	5.9	4.3	6.7	15.9	53.9	148.0	276.7	474.3	1085.7
COSTA RICA	1988	74.2	67.7	10.2	5.1	4.4	7.6	20.8	61.2	119.9	280.8	571.8	1688.4
CUBA	1988	106.9	61.6	6.6	6.8	3.5	7.1	17.4	53.2	145.0	292.6	517.7	1198.3
DOMINICA	1985	55.7	41.3	-	-	-	11.3	38.8	-	160.0	279.1	176.5	420.2
DOMINICAN REPUBLIC	1985	27.4	31.0	5.4	3.3	1.8	3.5	9.5	32.1	88.8	136.0	264.8	484.2
ECUADOR	1987	51.3	50.2	7.0	5.1	4.5	6.2	13.0	45.5	112.7	209.5	415.2	1097.6
EL SALVADOR	1984	25.9	27.0	-	2.8	2.5	3.6	10.6	35.9	89.1	107.2	200.7	335.4
GUADELOUPE	1981	81.8	45.7	-	-	2.6	5.6	21.9	29.8	108.1	266.1	377.8	750.0
GUATEMALA	1984	35.8	40.8	5.2	2.2	1.9	4.9	16.7	44.5	89.0	164.1	386.4	755.6
GUYANA	1984	31.1	29.8	-	4.1	-	2.9	6.4	34.7	85.5	148.1	268.1	413.8
HONDURAS	1981	18.9	23.3	2.5	2.8	1.3	5.0	9.5	28.2	46.5	93.9	178.1	462.1
JAMAICA	1984	86.4	64.5	-	4.2	3.8	6.9	18.9	79.3	192.3	295.9	490.7	983.1
MARTINIQUE	1985	112.8	55.2	-	9.2	3.9	5.3	12.1	58.5	126.6	340.6	424.2	787.5
MEXICO	1986	48.0	47.7	4.4	3.6	3.6	5.2	12.6	48.2	118.7	228.0	388.7	858.3
NETHERLANDS ANTILLES (CURACAO)	1981	108.5	73.2	-	-	5.0	-	9.1	55.6	250.0	120.0	933.3	1650.0
PANAMA	1987	50.9	45.6	7.1	6.2	6.2	5.9	17.4	46.6	89.4	184.2	389.2	897.6
PARAGUAY (AREA OF INFORMATION)	1986	50.9	50.7	7.8	6.4	3.8	6.1	13.8	52.4	148.7	219.4	392.7	845.1
PERU	1983	32.7	31.1	3.3	1.9	1.6	4.0	9.7	30.6	74.4	126.7	247.7	680.4
PUERTO RICO	1987	84.2	44.4	3.2	4.2	3.0	4.6	10.9	39.1	87.6	203.4	414.1	944.7
ST. KITTS AND NEVIS	1985	84.7	...	-	-	-	-	-	-	-	281.7	...	...
SAINT LUCIA	1988	78.7	57.9	-	-	-	-	9.6	81.8	97.6	344.8	458.0	1210.2
ST. VINCENT & THE GRENADINES	1986	75.9	63.0	75.4	15.6	-	13.3	-	-	161.3	493.3	550.0	787.4
SURINAME	1985	54.2	48.1	-	-	2.3	6.7	11.5	58.8	133.3	288.9	460.0	400.0
TRINIDAD AND TOBAGO	1986	81.9	60.0	6.3	1.8	4.1	6.9	11.9	49.8	141.9	280.6	662.4	991.8
UNITED STATES	1987	178.0	65.3	2.7	3.5	2.8	4.1	12.7	47.8	159.7	374.5	652.5	1050.0
URUGUAY	1987	178.0	70.7	-	3.6	6.4	4.1	22.3	62.5	159.2	326.0	651.7	1391.0
VENEZUELA	1987	53.8	53.6	3.2	4.8	4.4	5.9	15.5	49.3	130.1	258.1	472.7	921.9

TABLE III-9a(5).

Number of deaths from malignant neoplasm of lip, oral cavity, and pharynx (140–149), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	782	1	1	3	3	5	45	178	234	181	124	7
BAHAMAS	1987	10	-	-	-	-	-	1	2	3	2	2	-
BARBADOS	1988	16	-	-	-	-	-	-	3	7	2	4	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	2662	1	-	5	19	32	205	826	819	537	405	13
CANADA	1988	930	-	-	1	3	13	30	102	295	279	207	-
CHILE	1987	143	-	-	-	-	4	4	23	52	36	24	-
COLOMBIA	1984	301	-	-	2	5	7	11	26	63	97	87	3
COSTA RICA	1988	38	1	-	2	-	3	2	1	6	11	12	-
CUBA	1988	388	-	-	2	3	5	14	33	89	113	128	1
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	73	-	-	-	-	5	3	15	12	16	22	-
ECUADOR	1987	38	-	-	-	1	1	1	5	5	12	12	1
EL SALVADOR	1984	26	-	-	-	1	1	5	4	4	8	3	-
GUADELOUPE	1981	24	-	-	-	1	-	1	5	9	5	3	-
GUATEMALA	1984	28	-	-	-	-	-	8	4	-	8	8	-
GUYANA	1984	3	-	-	-	1	-	-	-	1	-	1	-
HONDURAS	1981	6	-	1	-	-	-	2	1	-	1	1	-
JAMAICA	1984	48	-	-	-	1	2	-	2	16	12	15	-
MARTINIQUE	1985	18	-	-	-	-	-	-	1	11	5	1	-
MEXICO	1986	541	2	1	3	7	17	26	53	125	132	174	1
NETHERLANDS ANTILLES (CURACAO)	1981	8	-	-	-	-	-	-	-	3	3	2	-
PANAMA	1987	47	-	1	-	-	-	3	5	8	14	14	2
PARAGUAY (AREA OF INFORMATION)	1986	31	-	-	-	3	-	1	3	9	6	8	1
PERU	1983	44	-	-	-	-	-	2	7	13	14	7	1
PUERTO RICO	1987	184	-	-	1	-	1	4	25	50	45	58	-
ST. VINCENT & THE GRENADINES	1986	3	-	-	-	-	-	-	-	1	2	-	-
SURINAME	1985	3	-	-	-	-	-	-	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	28	-	-	-	-	-	1	4	6	11	6	-
UNITED STATES	1987	7968	-	-	1	22	64	275	938	2175	2449	2044	-
URUGUAY	1987	121	-	1	2	-	-	3	19	44	28	24	-
VENEZUELA	1987	159	-	-	-	3	3	10	20	42	51	30	-
Male													
ARGENTINA	1986	634	1	1	2	1	4	39	158	202	141	79	6
BAHAMAS	1987	7	-	-	-	-	-	1	2	1	2	1	-
BARBADOS	1988	11	-	-	-	-	-	-	2	6	2	1	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	2134	1	-	4	12	21	171	554	703	390	267	11
CANADA	1988	679	-	-	1	3	9	19	87	232	202	126	-
CHILE	1987	101	-	-	-	-	4	4	20	41	23	9	-
COLOMBIA	1984	180	-	-	1	4	4	9	18	44	55	43	2
COSTA RICA	1988	25	-	-	1	-	1	2	1	5	9	6	-
CUBA	1988	286	-	-	1	1	4	11	23	69	89	87	1
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	45	-	-	-	-	2	1	7	9	14	12	-
ECUADOR	1987	26	-	-	-	-	1	1	4	3	10	6	1
EL SALVADOR	1984	13	-	-	-	1	-	4	1	3	4	-	-
GUADELOUPE	1981	23	-	-	-	1	-	1	5	9	4	3	-
GUATEMALA	1984	20	-	-	-	-	-	4	4	-	8	4	-
GUYANA	1984	3	-	-	-	1	-	-	-	1	-	1	-
HONDURAS	1981	3	-	1	-	-	-	-	1	-	-	1	-
JAMAICA	1984	34	-	-	-	1	1	-	1	11	9	11	-
MARTINIQUE	1985	18	-	-	-	-	-	-	1	11	5	1	-
MEXICO	1986	354	1	1	2	6	10	9	33	97	86	108	1
NETHERLANDS ANTILLES (CURACAO)	1981	5	-	-	-	-	-	-	-	2	2	1	-
PANAMA	1987	33	-	-	-	-	-	2	3	4	12	10	2
PARAGUAY (AREA OF INFORMATION)	1986	23	-	-	-	2	-	1	2	7	5	6	-
PERU	1983	32	-	-	-	-	-	1	5	12	9	5	-
PUERTO RICO	1987	152	-	-	-	-	-	4	22	42	38	46	-
ST. VINCENT & THE GRENADINES	1986	1	-	-	-	-	-	-	-	1	-	-	-
SURINAME	1985	1	-	-	-	-	-	-	-	-	-	1	-
TRINIDAD AND TOBAGO	1986	21	-	-	-	-	-	1	3	5	8	4	-
UNITED STATES	1987	5310	-	-	-	12	39	202	694	1590	1669	1104	-
URUGUAY	1987	99	-	-	1	-	-	2	16	39	23	18	-
VENEZUELA	1987	99	-	-	-	3	1	8	14	30	34	9	-
Female													
ARGENTINA	1986	145	-	-	1	2	1	6	19	32	39	45	-
BAHAMAS	1987	3	-	-	-	-	-	-	-	2	-	1	-
BARBADOS	1988	5	-	-	-	-	-	-	1	1	-	3	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	525	-	-	1	7	11	34	72	116	146	138	-
CANADA	1988	251	-	-	-	-	4	11	15	63	77	81	-
CHILE	1987	42	-	-	-	-	-	-	3	11	13	15	-
COLOMBIA	1984	121	-	-	1	1	3	2	8	19	42	44	1
COSTA RICA	1988	13	1	-	1	-	2	-	-	1	2	6	-
CUBA	1988	102	-	-	1	2	1	3	10	20	24	41	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	28	-	-	-	-	3	2	8	3	2	10	-
ECUADOR	1987	12	-	-	-	1	-	-	1	2	2	6	-
EL SALVADOR	1984	13	-	-	-	-	1	1	3	1	4	3	-
GUADELOUPE	1981	1	-	-	-	-	-	-	-	-	1	-	-
GUATEMALA	1984	8	-	-	-	-	-	4	-	-	-	4	-
GUYANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
HONDURAS	1981	3	-	-	-	-	-	2	-	-	1	-	-
JAMAICA	1984	14	-	-	-	-	1	-	1	5	3	4	-
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	187	1	-	1	1	7	17	20	28	46	66	-
NETHERLANDS ANTILLES (CURACAO)	1981	3	-	-	-	-	-	-	-	1	1	1	-
PANAMA	1987	14	-	1	-	-	-	1	2	4	2	4	-
PARAGUAY (AREA OF INFORMATION)	1986	8	-	-	-	1	-	-	1	2	1	2	1
PERU	1983	12	-	-	-	-	-	1	2	1	5	2	1
PUERTO RICO	1987	32	-	-	1	-	1	-	3	8	7	12	-
ST. VINCENT & THE GRENADINES	1986	2	-	-	-	-	-	-	-	-	2	-	-
SURINAME	1985	2	-	-	-	-	-	-	-	2	-	-	-
TRINIDAD AND TOBAGO	1986	7	-	-	-	-	-	-	1	1	3	2	-
UNITED STATES	1987	2658	-	-	1	10	25	73	244	585	780	940	-
URUGUAY	1987	22	-	1	1	-	-	1	3	5	5	6	-
VENEZUELA	1987	60	-	-	-	-	2	2	6	12	17	21	-

TABLE III-9b(5).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of lip, oral cavity, and pharynx (140–149), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	2.5	1.4	0.1	0.0	0.0	0.1	0.1	1.2	5.8	9.0	10.5	13.7
BAHAMAS	1987	4.0	3.2	-	-	-	-	-	3.7	10.2	22.1	22.9	45.2
BARBADOS	1988	6.2	...	-	-	-	-	-	-	16.3	40.5	13.2	36.0
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1.9	1.7	0.0	-	0.0	0.1	0.1	1.4	6.1	11.4	13.1	21.7
CANADA	1988	3.6	1.6	-	-	0.0	0.1	0.3	0.8	3.9	12.5	16.7	19.7
CHILE	1987	1.1	0.8	-	-	-	-	0.2	0.3	2.2	6.7	7.8	9.8
COLOMBIA	1984	1.1	1.0	-	-	0.0	0.1	0.2	0.4	1.4	4.7	12.4	29.9
COSTA RICA	1988	1.3	1.3	1.2	-	0.3	-	0.6	0.7	0.5	4.5	14.7	35.1
CUBA	1988	3.8	2.1	-	-	0.1	0.1	0.3	1.1	3.4	12.6	22.2	43.8
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	1.1	1.3	-	-	-	-	0.5	0.5	3.8	4.7	12.5	32.9
ECUADOR	1987	0.4	0.4	-	-	-	0.0	0.1	0.1	0.8	1.2	4.9	10.1
EL SALVADOR	1984	0.5	0.6	-	-	-	0.1	0.2	1.2	1.5	2.1	7.4	5.6
GUADELOUPE	1981	7.3	4.9	-	-	-	1.4	-	3.1	18.1	41.3	31.3	30.0
GUATEMALA	1984	0.4	0.4	-	-	-	-	-	1.2	0.8	-	5.1	11.8
GUYANA	1984	0.3	0.3	-	-	-	0.5	-	-	-	2.3	-	9.3
HONDURAS	1981	0.2	0.2	-	-	0.2	-	-	0.6	0.4	-	1.3	3.7
JAMAICA	1984	2.1	1.5	-	-	-	0.2	0.6	-	1.5	13.0	13.4	29.2
MARTINIQUE	1985	5.5	3.0	-	-	-	-	-	-	3.4	43.0	26.5	7.7
MEXICO	1986	0.7	0.7	0.1	0.0	0.0	0.0	0.1	0.4	1.1	3.9	7.1	17.1
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	3.3	-	-	-	-	-	-	-	33.3	50.0	50.0
PANAMA	1987	2.1	1.7	-	0.4	-	-	-	1.9	3.2	7.4	20.3	43.5
PARAGUAY (AREA OF INFORMATION)	1986	1.4	1.4	-	-	-	0.6	-	0.5	2.2	9.2	10.7	32.4
PERU	1983	0.2	0.2	-	-	-	-	-	0.1	0.5	1.5	2.9	3.6
PUERTO RICO	1987	5.2	2.9	-	-	0.1	-	0.2	0.9	8.0	20.4	24.4	52.7
ST. VINCENT & THE GRENADINES	1986	2.9	2.4	-	-	-	-	-	-	-	24.3	55.7	-
SURINAME	1985	0.8	0.7	-	-	-	-	-	-	-	10.5	-	16.7
TRINIDAD AND TOBAGO	1986	2.3	1.8	-	-	-	-	-	0.8	4.7	9.4	24.6	28.0
UNITED STATES	1987	3.3	1.4	-	-	0.0	0.1	0.1	0.8	4.0	9.9	13.9	16.8
URUGUAY	1987	4.0	1.9	-	0.4	0.4	-	-	0.9	5.5	14.4	15.5	19.7
VENEZUELA	1987	0.9	0.9	-	-	-	0.1	0.1	0.5	1.7	5.3	12.1	15.0
Male													
ARGENTINA	1986	4.2	2.5	0.3	0.1	0.1	0.0	0.2	2.1	10.5	16.2	18.4	21.6
BAHAMAS	1987	5.7	5.0	-	-	-	-	-	7.6	21.1	15.8	51.4	63.3
BARBADOS	1988	9.0	...	-	-	-	-	-	-	24.4	84.5	33.3	25.0
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	3.1	2.9	0.0	-	0.0	0.1	0.2	2.4	10.9	20.0	19.8	31.1
CANADA	1988	5.3	2.6	-	-	0.1	0.1	0.4	1.0	6.6	20.3	27.0	31.4
CHILE	1987	1.6	1.3	-	-	-	-	0.4	0.5	3.9	11.3	11.4	9.6
COLOMBIA	1984	1.3	1.3	-	-	0.0	0.1	0.2	0.6	1.9	6.9	15.4	35.6
COSTA RICA	1988	1.7	1.8	-	-	0.3	-	0.4	1.4	1.0	7.7	25.5	42.0
CUBA	1988	5.5	3.0	-	-	0.1	0.1	0.5	1.7	4.8	19.5	34.5	58.1
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	1.4	1.6	-	-	-	-	0.4	0.4	3.6	6.9	21.6	37.6
ECUADOR	1987	0.5	0.5	-	-	-	-	0.1	0.2	1.3	1.5	8.5	11.3
EL SALVADOR	1984	0.5	0.6	-	-	-	0.2	-	2.0	0.7	3.2	8.4	-
GUADELOUPE	1981	14.4	10.1	-	-	-	2.7	-	6.5	39.1	82.8	57.1	75.0
GUATEMALA	1984	0.5	0.6	-	-	-	-	-	1.2	1.7	-	10.3	12.1
GUYANA	1984	0.6	0.6	-	-	-	0.9	-	-	-	4.6	-	20.4
HONDURAS	1981	0.2	0.2	-	0.3	-	-	-	-	0.9	-	-	8.1
JAMAICA	1984	3.0	2.3	-	-	-	0.4	0.6	-	1.6	19.3	21.8	50.7
MARTINIQUE	1985	11.3	6.4	-	-	-	-	-	-	7.2	93.2	55.6	20.0
MEXICO	1986	0.9	1.0	0.1	0.0	0.0	0.1	0.2	0.3	1.4	6.3	10.1	24.4
NETHERLANDS ANTILLES (CURACAO)	1981	6.1	4.5	-	-	-	-	-	-	-	50.0	66.7	50.0
PANAMA	1987	2.8	2.3	-	-	-	-	-	1.7	3.8	7.2	33.8	64.1
PARAGUAY (AREA OF INFORMATION)	1986	2.0	2.3	-	-	-	0.9	-	1.0	3.1	14.9	19.2	57.1
PERU	1983	0.3	0.4	-	-	-	-	-	0.1	0.8	2.9	4.0	6.1
PUERTO RICO	1987	8.8	5.1	-	-	-	-	-	2.0	15.0	36.7	43.9	91.3
ST. VINCENT & THE GRENADINES	1986	2.0	2.5	-	-	-	-	-	-	-	53.2	-	-
SURINAME	1985	0.5	0.6	-	-	-	-	-	-	-	-	-	50.0
TRINIDAD AND TOBAGO	1986	3.5	2.8	-	-	-	-	-	1.5	7.2	16.4	37.6	43.5
UNITED STATES	1987	4.5	2.1	-	-	-	0.1	0.2	1.2	6.1	15.3	21.3	25.7
URUGUAY	1987	6.6	3.2	-	-	0.4	-	-	1.2	9.5	26.7	24.6	37.7
VENEZUELA	1987	1.1	1.2	-	-	-	0.2	0.1	0.8	2.4	7.6	17.1	10.5
Female													
ARGENTINA	1986	0.9	0.4	-	-	0.0	0.1	0.0	0.3	1.2	2.4	4.1	8.3
BAHAMAS	1987	2.4	1.7	-	-	-	-	-	-	-	27.5	-	35.2
BARBADOS	1988	3.7	...	-	-	-	-	-	-	-	9.8	9.8	42.3
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	0.8	0.8	-	-	0.0	0.0	0.1	0.5	1.4	3.2	6.9	13.7
CANADA	1988	1.9	0.8	-	-	-	-	0.2	0.6	1.2	5.1	8.4	12.5
CHILE	1987	0.7	0.4	-	-	-	-	-	-	0.5	2.7	5.0	9.9
COLOMBIA	1984	0.9	0.7	-	-	0.0	0.0	0.1	0.1	0.8	2.7	9.9	25.8
COSTA RICA	1988	0.9	0.8	2.5	-	0.3	-	0.8	-	-	1.5	5.0	30.2
CUBA	1988	2.0	1.1	-	-	0.1	0.2	0.1	0.5	2.1	5.7	9.6	28.7
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	0.9	1.0	-	-	-	-	0.6	0.7	4.0	2.4	3.2	28.7
ECUADOR	1987	0.2	0.2	-	-	-	0.1	-	-	0.3	1.0	1.5	9.1
EL SALVADOR	1984	0.6	0.6	-	-	-	-	0.3	0.5	2.2	1.0	6.7	9.5
GUADELOUPE	1981	0.6	0.3	-	-	-	-	-	-	-	-	11.1	-
GUATEMALA	1984	0.2	0.3	-	-	-	-	-	1.2	-	-	-	11.1
GUYANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
HONDURAS	1981	0.2	0.2	-	-	-	-	-	1.3	-	-	2.5	-
JAMAICA	1984	1.2	0.8	-	-	-	-	0.6	-	1.4	7.6	6.2	13.5
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	0.5	0.4	0.1	-	0.0	0.0	0.1	0.5	0.8	1.6	4.6	11.4
NETHERLANDS ANTILLES (CURACAO)	1981	3.7	2.3	-	-	-	-	-	-	-	20.0	33.3	50.0
PANAMA	1987	1.3	1.2	-	0.9	-	-	-	0.9	2.6	7.5	6.0	24.1
PARAGUAY (AREA OF INFORMATION)	1986	0.7	0.6	-	-	-	0.4	-	-	1.5	4.0	3.3	14.1
PERU	1983	0.1	0.1	-	-	-	-	-	0.1	0.3	0.2	2.0	1.8
PUERTO RICO	1987	1.8	1.0	-	-	0.3	-	0.4	-	1.8	6.1	7.2	20.1
ST. VINCENT & THE GRENADINES	1986	3.7	2.3	-	-	-	-	-	-	-	-	100.0	-
SURINAME	1985	1.1	1.0	-	-	-	-	-	-	-	22.2	-	-
TRINIDAD AND TOBAGO	1986	1.2	0.8	-	-	-	-	-	-	2.3	3.0	12.8	16.4
UNITED STATES	1987	2.1	0.8	-	-	0.0	0.1	0.1	0.4	2.0	5.0	7.9	11.9
URUGUAY	1987	1.4	0.7	-	0.9	0.4	-	-	0.6	1.7	3.1	4.4	8.1
VENEZUELA	1987	0.7	0.6	-	-	-	-	0.1	0.2	1.0	3.0	7.6	18.4

TABLE III-9a(6).

Number of deaths from malignant neoplasm of stomach (151), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	3286	1	3	2	5	39	128	298	692	958	1147	13
BAHAMAS	1987	15	-	-	-	-	-	-	1	3	7	4	-
BARBADOS	1988	48	-	-	-	-	-	-	2	5	15	26	-
BELIZE	1986	7	-	-	-	-	-	-	-	2	-	4	1
BRAZIL (AREA OF INFORMATION)	1986	9231	-	1	3	20	174	494	1245	2291	2685	2279	39
CANADA	1988	2130	-	-	-	2	13	50	145	363	617	940	-
CHILE	1987	2328	-	-	-	3	27	82	228	524	704	760	-
COLOMBIA	1984	3410	2	1	-	16	65	173	422	787	994	907	43
COSTA RICA	1988	598	-	-	-	1	8	20	52	129	149	238	1
CUBA	1988	690	-	-	-	3	11	34	70	110	178	284	-
DOMINICA	1985	10	-	-	-	-	-	-	-	1	4	5	-
DOMINICAN REPUBLIC	1985	144	-	-	-	3	1	8	16	45	31	40	-
ECUADOR	1987	1160	-	-	2	9	22	57	120	217	300	419	14
EL SALVADOR	1984	140	-	-	1	-	1	13	20	31	43	31	-
FRENCH GUIANA	1984	7	-	-	-	-	-	-	2	1	2	2	-
GUADELOUPE	1981	51	-	-	-	-	-	2	6	11	20	12	-
GUATEMALA	1984	612	-	-	-	20	24	20	96	132	192	128	-
GUYANA	1984	42	-	-	-	-	1	4	5	7	15	10	-
HONDURAS	1981	51	-	-	-	1	-	2	3	14	18	13	-
JAMAICA	1984	316	-	-	-	1	2	5	25	46	100	132	5
MARTINIQUE	1985	47	-	-	-	-	-	2	2	11	17	15	-
MEXICO	1986	3823	-	7	4	23	89	183	414	698	981	1408	16
NETHERLANDS ANTILLES (CURACAO)	1981	16	-	-	-	-	-	1	1	3	6	5	-
PANAMA	1987	154	-	-	-	2	3	12	18	25	54	40	-
PARAGUAY (AREA OF INFORMATION)	1986	119	1	-	-	-	5	7	11	25	31	36	3
PERU	1983	1217	-	2	1	5	27	82	147	218	346	383	26
PUERTO RICO	1987	334	-	-	-	-	2	4	27	49	102	150	-
SURINAME	1985	14	-	-	-	-	-	-	2	3	4	5	-
TRINIDAD AND TOBAGO	1986	96	-	-	-	-	1	1	3	14	41	36	-
UNITED STATES	1987	15742	-	-	-	17	119	418	891	2420	4122	5753	2
URUGUAY	1987	463	-	-	-	-	5	10	41	80	133	193	1
VENEZUELA	1987	1415	-	-	-	5	22	87	161	301	411	426	2
Male													
ARGENTINA	1986	2126	-	2	2	3	16	83	223	490	655	646	6
BAHAMAS	1987	9	-	-	-	-	-	-	-	2	4	3	-
BARBADOS	1988	28	-	-	-	-	-	-	2	3	9	14	-
BELIZE	1986	7	-	-	-	-	-	-	-	2	-	4	1
BRAZIL (AREA OF INFORMATION)	1986	6179	-	1	3	10	97	317	887	1660	1847	1332	25
CANADA	1988	1371	-	-	-	1	9	31	97	248	435	550	-
CHILE	1987	1502	-	-	-	3	12	52	175	373	475	412	-
COLOMBIA	1984	1954	1	1	-	9	38	108	258	482	575	457	25
COSTA RICA	1988	397	-	-	-	-	3	11	37	94	105	147	-
CUBA	1988	476	-	-	-	1	8	22	41	80	121	203	-
DOMINICA	1985	7	-	-	-	-	-	-	-	-	3	4	-
DOMINICAN REPUBLIC	1985	89	-	-	-	-	-	8	9	29	21	24	-
ECUADOR	1987	647	-	-	2	4	12	26	71	142	170	212	8
EL SALVADOR	1984	80	-	-	-	-	1	9	10	20	25	15	-
FRENCH GUIANA	1984	5	-	-	-	-	-	-	2	1	2	-	-
GUADELOUPE	1981	32	-	-	-	-	-	-	5	8	12	7	-
GUATEMALA	1984	260	-	-	-	4	8	8	60	44	68	68	-
GUYANA	1984	25	-	-	-	-	1	3	4	4	10	3	-
HONDURAS	1981	30	-	-	-	-	-	1	1	8	14	6	-
JAMAICA	1984	192	-	-	-	-	1	5	14	30	74	67	1
MARTINIQUE	1985	28	-	-	-	-	-	2	-	7	12	7	-
MEXICO	1986	1949	-	4	2	12	45	94	196	384	542	661	9
NETHERLANDS ANTILLES (CURACAO)	1981	10	-	-	-	-	-	-	1	2	3	4	-
PANAMA	1987	105	-	-	-	1	1	6	14	20	39	24	-
PARAGUAY (AREA OF INFORMATION)	1986	72	-	-	-	-	4	5	6	16	21	18	2
PERU	1983	650	-	1	-	3	12	35	77	129	195	188	10
PUERTO RICO	1987	225	-	-	-	-	1	2	20	37	67	98	-
SURINAME	1985	11	-	-	-	-	-	-	2	2	4	3	-
TRINIDAD AND TOBAGO	1986	55	-	-	-	-	-	-	2	7	23	21	-
UNITED STATES	1987	8241	-	-	-	5	58	290	600	1679	2679	2930	-
URUGUAY	1987	291	-	-	-	-	3	8	25	62	91	102	-
VENEZUELA	1987	848	-	-	-	5	10	56	100	194	237	245	1
Female													
ARGENTINA	1986	1139	1	1	-	2	22	43	74	197	299	496	4
BAHAMAS	1987	6	-	-	-	-	-	-	1	1	3	1	-
BARBADOS	1988	20	-	-	-	-	-	-	-	2	6	12	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	3043	-	-	-	10	77	177	356	631	836	946	10
CANADA	1988	759	-	-	-	1	4	19	48	115	182	390	-
CHILE	1987	826	-	-	-	-	15	30	53	151	229	348	-
COLOMBIA	1984	1456	1	-	-	7	27	65	164	305	419	450	18
COSTA RICA	1988	201	-	-	-	1	5	9	15	35	44	91	1
CUBA	1988	214	-	-	-	2	3	12	29	30	57	81	-
DOMINICA	1985	3	-	-	-	-	-	-	-	1	1	1	-
DOMINICAN REPUBLIC	1985	55	-	-	-	3	1	2	7	16	10	16	-
ECUADOR	1987	513	-	-	-	5	10	31	49	75	130	207	6
EL SALVADOR	1984	60	-	-	1	-	-	4	10	11	18	16	-
FRENCH GUIANA	1984	2	-	-	-	-	-	-	-	-	-	2	-
GUADELOUPE	1981	19	-	-	-	-	-	2	1	3	8	5	-
GUATEMALA	1984	352	-	-	-	16	16	12	36	88	124	60	-
GUYANA	1984	17	-	-	-	-	-	1	1	3	5	7	-
HONDURAS	1981	21	-	-	-	1	-	1	2	6	4	7	-
JAMAICA	1984	124	-	-	-	1	1	-	11	16	26	65	4
MARTINIQUE	1985	19	-	-	-	-	-	-	2	4	5	8	-
MEXICO	1986	1874	-	3	2	11	44	89	218	314	439	747	7
NETHERLANDS ANTILLES (CURACAO)	1981	6	-	-	-	-	-	1	-	1	3	1	-
PANAMA	1987	49	-	-	-	1	2	6	4	5	15	16	-
PARAGUAY (AREA OF INFORMATION)	1986	47	1	-	-	-	1	2	5	9	10	18	1
PERU	1983	567	-	1	1	2	15	27	70	89	151	195	16
PUERTO RICO	1987	109	-	-	-	-	1	2	7	12	35	52	-
SURINAME	1985	3	-	-	-	-	-	-	-	1	-	2	-
TRINIDAD AND TOBAGO	1986	43	-	-	-	-	1	1	1	7	18	15	-
UNITED STATES	1987	5501	-	-	-	12	61	128	291	741	1443	2823	2
URUGUAY	1987	172	-	-	-	-	2	2	16	18	42	91	1
VENEZUELA	1987	567	-	-	-	-	12	31	61	107	174	181	1

TABLE III-9b(6).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of stomach (151), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	10.7	5.2	0.1	0.1	0.0	0.1	0.9	3.5	9.7	26.6	55.7	126.7
BAHAMAS	1987	6.0	4.3	-	-	-	-	-	-	5.1	22.1	80.2	90.5
BARBADOS	1988	18.7	...	-	-	-	-	-	-	10.9	28.9	98.7	234.2
BELIZE	1986	4.2	2.4	-	-	-	-	-	-	-	21.5	-	118.3
BRAZIL (AREA OF INFORMATION)	1986	6.7	5.8	-	0.0	0.0	0.1	0.8	3.4	12.2	32.0	65.6	122.0
CANADA	1988	8.2	5.2	-	-	-	0.0	0.3	1.3	5.6	15.3	37.0	89.5
CHILE	1987	18.6	12.6	-	-	-	0.1	1.3	5.3	21.4	67.7	151.8	310.2
COLOMBIA	1984	12.1	11.8	0.2	0.0	-	0.3	1.4	6.1	22.2	58.8	127.0	311.5
COSTA RICA	1986	20.9	20.3	-	-	-	0.2	1.7	7.0	27.1	97.4	198.7	695.9
CUBA	1988	6.8	3.6	-	-	-	0.1	0.8	2.6	7.3	15.6	35.0	97.1
DOMINICA	1985	13.2	7.2	-	-	-	-	-	-	-	25.5	129.0	263.2
DOMINICAN REPUBLIC	1985	2.2	2.6	-	-	-	0.2	0.1	1.4	4.0	17.7	24.3	59.9
ECUADOR	1987	11.7	11.6	-	-	0.1	0.4	1.5	6.2	19.2	52.8	121.7	353.6
EL SALVADOR	1984	3.0	3.3	-	-	0.1	-	0.2	3.2	7.3	15.9	40.0	57.7
FRENCH GUIANA	1984	8.8	8.2	-	-	-	-	-	-	35.2	25.5	89.3	202.0
GUADELOUPE	1981	15.6	8.9	-	-	-	-	-	6.1	21.7	50.5	125.0	120.0
GUATEMALA	1984	7.9	9.2	-	-	-	1.3	2.4	3.1	20.0	40.5	121.9	185.2
GUYANA	1984	4.5	4.4	-	-	-	-	0.6	4.8	8.5	16.2	56.4	93.5
HONDURAS	1981	1.3	1.7	-	-	-	0.1	-	0.6	1.3	9.6	23.5	48.3
JAMAICA	1984	13.7	9.1	-	-	-	0.2	0.6	3.1	18.3	37.4	111.6	257.3
MARTINIQUE	1985	14.3	6.5	-	-	-	-	-	5.6	6.8	43.0	89.9	115.4
MEXICO	1986	4.7	4.9	-	0.1	0.0	0.1	0.8	2.5	8.3	21.5	52.8	138.2
NETHERLANDS ANTILLES (CURACAO)	1981	9.8	6.5	-	-	-	-	-	5.9	8.3	33.3	100.0	125.0
PANAMA	1987	6.8	5.9	-	-	-	0.4	0.9	5.2	11.6	23.1	78.4	124.2
PARAGUAY (AREA OF INFORMATION)	1986	5.2	5.4	1.9	-	-	-	1.4	3.4	8.2	25.6	95.1	145.7
PERU	1983	6.5	6.6	-	0.1	0.0	0.1	1.0	3.4	11.2	25.8	72.0	199.7
PUERTO RICO	1987	9.4	4.6	-	-	-	-	0.4	0.9	8.6	20.0	55.3	136.2
SURINAME	1985	3.7	3.1	-	-	-	-	-	-	6.9	15.8	40.0	83.3
TRINIDAD AND TOBAGO	1986	8.0	5.5	-	-	-	-	0.5	0.8	3.5	21.9	91.7	168.2
UNITED STATES	1987	5.6	2.1	-	-	-	0.0	0.3	1.2	3.8	11.0	23.3	47.3
URUGUAY	1987	15.1	5.9	-	-	-	-	1.2	2.9	11.9	26.1	64.2	158.4
VENEZUELA	1987	7.7	8.1	-	-	-	0.1	0.8	4.6	13.6	37.7	97.4	213.6
Male													
ARGENTINA	1986	13.9	7.6	-	0.1	0.1	0.1	0.7	4.5	14.8	39.4	85.7	177.0
BAHAMAS	1987	7.3	6.1	-	-	-	-	-	-	-	31.7	102.8	169.9
BARBADOS	1988	23.0	...	-	-	-	-	-	-	24.4	42.3	150.0	350.0
BELIZE	1986	6.4	4.9	-	-	-	-	-	-	-	44.3	-	243.9
BRAZIL (AREA OF INFORMATION)	1986	8.9	8.1	-	0.0	0.0	0.1	0.9	4.4	17.5	47.2	94.0	155.2
CANADA	1988	10.5	4.7	-	-	-	0.0	0.4	1.6	7.4	21.7	58.1	137.1
CHILE	1987	24.2	18.8	-	-	-	0.2	1.1	6.9	34.0	103.1	234.9	439.7
COLOMBIA	1984	13.9	14.8	0.2	0.1	-	0.3	1.7	7.5	27.1	75.7	160.9	378.3
COSTA RICA	1986	27.4	29.4	-	-	-	-	2.2	7.6	38.6	144.4	297.5	1028.0
CUBA	1988	9.2	4.9	-	-	-	0.1	1.1	3.4	8.5	22.6	48.9	135.6
DOMINICA	1985	18.3	11.5	-	-	-	-	-	-	-	-	214.3	563.4
DOMINICAN REPUBLIC	1985	2.8	3.2	-	-	-	-	-	2.1	4.6	22.2	32.4	78.2
ECUADOR	1987	13.0	14.0	-	-	0.2	0.4	1.7	5.6	22.9	70.6	144.7	400.8
EL SALVADOR	1984	3.4	4.0	-	-	-	-	0.3	4.4	7.3	21.3	52.4	67.8
FRENCH GUIANA	1984	12.5	12.0	-	-	-	-	-	-	70.9	52.4	188.7	-
GUADELOUPE	1981	20.1	12.5	-	-	-	-	-	-	39.1	73.4	171.4	175.0
GUATEMALA	1984	8.8	8.1	-	-	-	0.5	1.6	2.5	24.9	27.1	87.4	205.4
GUYANA	1984	5.5	5.4	-	-	-	-	1.3	7.4	14.0	18.5	78.1	61.2
HONDURAS	1981	1.6	2.1	-	-	-	-	-	0.6	0.9	11.0	37.5	48.4
JAMAICA	1984	16.9	12.6	-	-	-	-	0.6	6.7	21.9	52.5	179.2	308.8
MARTINIQUE	1985	17.6	8.7	-	-	-	-	-	11.9	-	59.3	133.3	140.0
MEXICO	1986	4.8	5.4	-	0.1	0.0	0.1	0.8	2.6	8.1	25.0	63.9	149.5
NETHERLANDS ANTILLES (CURACAO)	1981	12.2	8.2	-	-	-	-	-	-	16.7	50.0	100.0	200.0
PANAMA	1987	9.1	8.0	-	-	-	0.4	0.6	5.0	17.7	36.2	109.8	153.8
PARAGUAY (AREA OF INFORMATION)	1986	6.3	7.0	-	-	-	-	2.3	5.0	9.2	34.0	80.8	171.4
PERU	1983	6.9	7.6	-	0.1	-	0.2	0.9	3.8	11.8	31.4	87.0	227.6
PUERTO RICO	1987	13.0	6.7	-	-	-	-	0.4	1.0	13.7	32.4	77.5	194.4
SURINAME	1985	5.9	5.6	-	-	-	-	-	-	14.3	20.0	80.0	150.0
TRINIDAD AND TOBAGO	1986	8.8	6.6	-	-	-	-	-	-	4.8	23.0	108.0	228.3
UNITED STATES	1987	7.0	3.0	-	-	-	0.0	0.3	1.7	5.3	16.2	34.2	68.2
URUGUAY	1987	19.4	8.5	-	-	-	-	1.4	4.6	14.8	42.4	97.4	213.7
VENEZUELA	1987	9.2	10.4	-	-	-	0.3	0.7	5.9	16.9	49.2	119.5	286.5
Female													
ARGENTINA	1986	7.4	3.3	0.3	0.1	-	0.1	1.0	2.4	4.8	14.5	31.3	91.8
BAHAMAS	1987	4.8	3.2	-	-	-	-	-	-	9.9	13.8	62.0	35.2
BARBADOS	1988	14.8	...	-	-	-	-	-	-	-	19.6	65!2	169.0
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	4.4	3.7	-	-	-	0.1	0.7	2.4	6.9	17.3	39.3	93.7
CANADA	1988	5.8	2.0	-	-	-	0.0	0.2	1.0	3.7	9.4	19.8	60.0
CHILE	1987	13.0	7.7	-	-	-	-	1.4	3.8	9.6	36.6	87.5	230.0
COLOMBIA	1984	10.4	9.4	0.2	-	-	0.2	1.2	4.6	17.2	43.5	98.5	264.1
COSTA RICA	1986	14.2	12.5	-	-	-	0.3	2.1	6.3	15.6	52.0	110.8	457.3
CUBA	1988	4.3	2.3	-	-	-	0.2	0.4	1.9	6.1	8.5	22.7	56.8
DOMINICA	1985	8.0	4.5	-	-	-	-	-	-	-	46.5	58.8	84.0
DOMINICAN REPUBLIC	1985	1.7	1.9	-	-	-	0.4	0.2	0.7	3.5	12.9	15.9	45.8
ECUADOR	1987	10.4	9.8	-	-	-	0.5	1.4	6.7	15.6	35.8	100.7	315.5
EL SALVADOR	1984	2.5	2.6	-	-	0.2	-	-	2.0	7.2	10.9	30.1	50.6
FRENCH GUIANA	1984	5.0	4.3	-	-	-	-	-	-	-	-	-	370.4
GUADELOUPE	1981	11.3	6.0	-	-	-	-	-	11.9	6.8	27.5	88.9	83.3
GUATEMALA	1984	9.2	10.4	-	-	-	2.2	3.2	3.7	15.1	53.9	155.6	166.7
GUYANA	1984	3.6	3.4	-	-	-	-	-	2.3	3.3	13.9	36.2	120.7
HONDURAS	1981	1.1	1.4	-	-	-	0.3	-	0.6	1.8	8.2	10.2	48.3
JAMAICA	1984	10.7	6.2	-	-	-	0.4	0.6	-	15.1	24.3	53.8	219.6
MARTINIQUE	1985	11.3	4.6	-	-	-	-	-	-	12.7	29.0	50.5	100.0
MEXICO	1986	4.6	4.4	-	0.1	0.0	0.1	0.8	2.4	8.5	18.4	43.5	129.5
NETHERLANDS ANTILLES (CURACAO)	1981	7.3	5.0	-	-	-	-	-	11.1	-	20.4	100.0	50.0
PANAMA	1987	4.4	3.8	-	-	-	0.4	1.2	5.3	5.3	9.4	44.8	98.4
PARAGUAY (AREA OF INFORMATION)	1986	4.1	4.0	3.9	-	-	-	0.6	1.9	7.3	17.6	33.0	126.8
PERU	1983	6.1	5.7	-	0.1	0.0	0.1	1.1	3.0	10.7	20.5	58.9	178.6
PUERTO RICO	1987	6.0	2.7	-	-	-	-	0.4	0.9	4.2	9.2	35.8	87.1
SURINAME	1985	1.6	1.1	-	-	-	-	-	-	-	11.1	-	50.0
TRINIDAD AND TOBAGO	1986	7.1	4.6	-	-	-	-	1.0	1.5	2.3	20.9	76.9	123.0
UNITED STATES	1987	4.4	1.4	-	-	-	0.1	0.3	0.7	2.4	6.4	14.7	35.9
URUGUAY	1987	11.1	3.7	-	-	-	-	1.0	1.1	9.2	11.2	36.9	122.8
VENEZUELA	1987	6.3	6.1	-	-	-	-	0.9	3.3	10.3	26.5	77.8	158.9

TABLE III-9a(7).

Number of deaths from malignant neoplasm of colon (153), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	3182	2	10	4	4	24	79	209	644	994	1202	10
BAHAMAS	1987	7	-	-	-	-	1	1	2	3	-	-	-
BARBADOS	1988	19	-	-	-	-	-	1	1	2	8	7	-
BELIZE	1986	1	-	-	-	-	-	-	-	-	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	2548	1	1	2	34	77	150	293	566	700	714	10
CANADA	1988	4434	-	-	-	-	20	82	300	775	1339	1918	-
CHILE	1987	495	-	-	-	2	7	19	43	81	133	210	-
COLOMBIA	1984	491	-	-	-	7	13	25	61	90	137	150	8
COSTA RICA	1988	87	-	-	-	1	1	6	8	11	15	45	-
CUBA	1988	956	-	-	-	3	9	32	86	172	252	402	-
DOMINICA	1985	3	-	-	-	-	-	-	-	1	-	2	-
DOMINICAN REPUBLIC	1985	76	-	-	-	-	1	7	8	13	16	31	-
ECUADOR	1987	115	-	-	-	2	3	8	15	21	23	43	-
EL SALVADOR	1984	27	-	-	-	1	2	1	4	5	5	9	-
FRENCH GUIANA	1984	3	-	-	-	-	-	-	1	-	1	1	-
GUADELOUPE	1981	12	-	-	-	-	1	-	-	1	5	5	-
GUATEMALA	1984	8	-	-	-	4	-	-	4	-	-	-	-
GUYANA	1984	13	-	-	-	-	-	-	-	6	3	4	-
HONDURAS	1981	-	-	-	-	-	-	-	-	-	-	-	-
JAMAICA	1984	114	-	-	-	-	1	1	4	20	30	57	1
MARTINIQUE	1985	15	-	-	-	-	-	2	-	1	5	7	-
MEXICO	1986	1087	1	-	-	16	36	56	111	187	253	413	4
NETHERLANDS ANTILLES (CURACAO)	1981	3	-	-	-	-	-	-	-	-	2	1	-
PANAMA	1987	53	-	-	-	-	3	1	7	11	13	18	-
PARAGUAY (AREA OF INFORMATION)	1986	42	-	-	-	-	1	2	4	8	12	13	2
PERU	1983	124	-	-	-	-	3	6	13	17	41	42	2
PUERTO RICO	1987	258	-	-	-	1	3	5	26	49	66	106	2
SURINAME	1985	19	-	-	-	-	1	-	6	4	2	6	-
TRINIDAD AND TOBAGO	1986	72	-	-	-	-	3	4	8	12	20	25	-
UNITED STATES	1987	48362	1	-	2	38	270	900	2747	8045	14382	21974	3
URUGUAY	1987	537	-	-	-	-	3	9	28	91	163	241	2
VENEZUELA	1987	389	-	-	-	8	7	21	46	76	111	120	-
Male													
ARGENTINA	1986	1583	1	7	2	1	12	40	103	350	553	511	3
BAHAMAS	1987	4	-	-	-	-	-	1	2	1	-	-	-
BARBADOS	1988	9	-	-	-	-	-	-	1	-	5	3	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1148	1	1	1	17	37	66	133	275	326	285	6
CANADA	1988	2193	-	-	-	-	8	44	164	411	736	830	-
CHILE	1987	197	-	-	-	1	4	8	15	37	64	68	-
COLOMBIA	1984	220	-	-	-	4	4	11	25	41	67	64	4
COSTA RICA	1988	35	-	-	-	-	1	4	3	9	10	8	-
CUBA	1988	449	-	-	-	3	5	18	38	72	125	188	-
DOMINICA	1985	2	-	-	-	-	-	-	-	-	-	2	-
DOMINICAN REPUBLIC	1985	39	-	-	-	-	1	3	4	6	10	15	-
ECUADOR	1987	52	-	-	-	1	2	3	8	9	10	19	-
EL SALVADOR	1984	13	-	-	-	1	-	1	3	2	2	4	-
FRENCH GUIANA	1984	2	-	-	-	-	-	-	1	-	-	1	-
GUADELOUPE	1981	2	-	-	-	-	1	-	-	-	1	-	-
GUATEMALA	1984	4	-	-	-	4	-	-	-	-	-	-	-
GUYANA	1984	8	-	-	-	-	-	-	-	4	3	1	-
HONDURAS	1981	-	-	-	-	-	-	-	-	-	-	-	-
JAMAICA	1984	48	-	-	-	-	1	1	2	9	10	24	1
MARTINIQUE	1985	7	-	-	-	-	-	-	-	1	3	2	-
MEXICO	1986	493	-	-	-	8	21	31	55	92	118	166	2
NETHERLANDS ANTILLES (CURACAO)	1981	2	-	-	-	-	-	-	-	-	2	-	-
PANAMA	1987	34	-	-	-	-	1	-	4	8	8	13	-
PARAGUAY (AREA OF INFORMATION)	1986	23	-	-	-	-	1	1	2	7	5	5	2
PERU	1983	57	-	-	-	-	-	2	7	8	21	18	1
PUERTO RICO	1987	123	-	-	-	1	-	2	15	31	32	41	1
SURINAME	1985	9	-	-	-	-	-	-	2	2	2	3	-
TRINIDAD AND TOBAGO	1986	40	-	-	-	-	2	1	5	8	9	15	-
UNITED STATES	1987	23691	1	-	2	21	153	486	1441	4428	7745	9413	1
URUGUAY	1987	235	-	-	-	-	-	5	14	44	82	89	1
VENEZUELA	1987	179	-	-	-	4	5	17	19	37	56	41	-
Female													
ARGENTINA	1986	1581	1	2	1	3	10	39	104	294	438	685	4
BAHAMAS	1987	3	-	-	-	-	1	-	-	2	-	-	-
BARBADOS	1988	10	-	-	-	-	-	1	-	2	3	4	-
BELIZE	1986	1	-	-	-	-	-	-	-	-	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	1396	-	-	1	17	40	83	160	291	373	427	4
CANADA	1988	2241	-	-	-	-	12	38	136	364	603	1088	-
CHILE	1987	298	-	-	-	1	3	11	28	44	69	142	-
COLOMBIA	1984	271	-	-	-	3	9	14	36	49	70	86	4
COSTA RICA	1988	52	-	-	-	1	1	5	4	8	6	27	-
CUBA	1988	507	-	-	-	-	4	14	48	100	127	214	-
DOMINICA	1985	1	-	-	-	-	-	-	-	1	-	-	-
DOMINICAN REPUBLIC	1985	37	-	-	-	-	-	4	4	7	6	16	-
ECUADOR	1987	63	-	-	-	1	1	5	7	12	13	24	-
EL SALVADOR	1984	14	-	-	-	-	2	-	1	3	3	5	-
FRENCH GUIANA	1984	1	-	-	-	-	-	-	-	-	1	-	-
GUADELOUPE	1981	10	-	-	-	-	-	-	-	1	4	5	-
GUATEMALA	1984	4	-	-	-	-	-	-	4	-	-	-	-
GUYANA	1984	5	-	-	-	-	-	-	-	2	-	3	-
HONDURAS	1981	-	-	-	-	-	-	-	-	-	-	-	-
JAMAICA	1984	66	-	-	-	-	-	-	2	11	20	33	-
MARTINIQUE	1985	8	-	-	-	-	-	1	-	-	2	5	-
MEXICO	1986	594	1	-	-	8	15	25	56	105	135	247	2
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	-	-	-	-	1	-
PANAMA	1987	19	-	-	-	-	2	1	3	3	5	5	-
PARAGUAY (AREA OF INFORMATION)	1986	19	-	-	-	-	-	1	2	1	7	8	-
PERU	1983	67	-	-	-	-	3	4	6	9	20	24	1
PUERTO RICO	1987	135	-	-	-	-	3	3	11	18	34	65	1
SURINAME	1985	10	-	-	-	-	1	-	4	2	-	3	-
TRINIDAD AND TOBAGO	1986	32	-	-	-	-	1	3	3	4	11	10	-
UNITED STATES	1987	24671	-	-	-	17	117	414	1306	3617	6637	12561	2
URUGUAY	1987	302	-	-	-	-	3	4	14	47	81	152	1
VENEZUELA	1987	210	-	-	-	4	2	4	27	39	55	79	-

TABLE III-9b(7).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of colon (153), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	10.4	4.9	0.3	0.4	0.1	0.1	0.5	2.1	6.8	24.7	57.8	132.8
BAHAMAS	1987	2.8	2.5	-	-	-	-	2.4	3.7	10.2	22.1	-	-
BARBADOS	1988	7.4	...	-	-	-	-	-	3.8	5.4	11.6	52.6	63.1
BELIZE	1986	0.6	0.3	-	-	-	-	-	-	-	-	-	29.6
BRAZIL (AREA OF INFORMATION)	1986	1.8	1.6	0.0	0.0	0.0	0.1	0.3	1.0	2.9	7.9	17.1	38.2
CANADA	1988	17.0	6.6	-	-	-	-	0.4	2.2	11.5	32.7	80.2	182.5
CHILE	1987	3.9	2.6	-	-	-	0.1	0.3	1.2	4.0	10.5	28.7	85.7
COLOMBIA	1984	1.7	1.7	-	-	-	0.1	0.3	0.9	3.2	6.7	17.5	51.5
COSTA RICA	1988	3.0	3.0	-	-	-	0.2	0.2	2.1	4.2	8.3	20.0	131.6
CUBA	1988	9.4	4.9	-	-	-	0.1	0.6	2.5	9.0	24.4	49.5	137.5
DOMINICA	1985	3.9	2.4	-	-	-	-	-	-	-	25.5	-	105.3
DOMINICAN REPUBLIC	1985	1.2	1.4	-	-	-	-	0.1	1.2	2.0	5.1	12.5	46.4
ECUADOR	1987	1.2	1.2	-	-	-	0.1	0.2	0.9	2.4	5.1	9.3	36.3
EL SALVADOR	1984	0.6	0.6	-	-	-	0.1	0.3	0.2	1.5	2.6	4.7	16.8
FRENCH GUIANA	1984	3.8	3.5	-	-	-	-	-	-	17.6	-	44.8	101.0
GUADELOUPE	1981	3.7	1.8	-	-	-	-	2.3	-	-	4.6	31.3	50.0
GUATEMALA	1984	0.1	0.1	-	-	-	0.3	-	-	0.8	-	-	-
GUYANA	1984	1.4	1.3	-	-	-	-	-	-	-	13.9	11.3	37.4
HONDURAS	1981	-	-	-	-	-	-	-	-	-	-	-	-
JAMAICA	1984	5.0	3.2	-	-	-	-	0.3	0.6	2.9	16.3	33.5	111.1
MARTINIQUE	1985	4.6	2.0	-	-	-	-	-	5.6	-	3.9	26.5	53.8
MEXICO	1986	1.3	1.4	0.0	-	-	0.1	0.3	0.8	2.2	6.1	13.6	40.5
NETHERLANDS ANTILLES (CURACAO)	1981	1.8	1.1	-	-	-	-	-	-	-	-	33.3	25.0
PANAMA	1987	2.3	2.1	-	-	-	-	0.9	0.4	4.5	10.1	18.9	55.9
PARAGUAY (AREA OF INFORMATION)	1986	1.8	1.9	-	-	-	-	0.3	1.0	3.0	8.2	21.3	52.6
PERU	1983	0.7	0.7	-	-	-	-	0.1	0.3	1.0	2.0	8.5	21.9
PUERTO RICO	1987	7.3	3.7	-	-	-	0.1	0.6	1.2	8.3	20.0	35.8	96.3
SURINAME	1985	5.1	4.4	-	-	-	-	2.0	-	20.7	21.1	20.0	100.9
TRINIDAD AND TOBAGO	1986	6.0	4.5	-	-	-	-	1.5	3.0	9.4	18.8	44.7	116.8
UNITED STATES	1987	19.8	8.9	0.0	-	0.0	0.1	0.6	2.6	11.8	36.5	81.4	180.6
URUGUAY	1987	17.6	6.5	-	-	-	-	0.7	2.6	8.2	29.7	78.7	197.8
VENEZUELA	1987	2.1	2.2	-	-	-	0.2	0.2	1.1	3.9	9.5	26.3	60.2
Male													
ARGENTINA	1986	10.4	5.5	0.3	0.5	0.1	0.0	0.5	2.2	6.8	28.1	72.4	140.0
BAHAMAS	1987	3.2	3.1	-	-	-	-	-	7.6	21.1	15.8	-	-
BARBADOS	1988	7.4	...	-	-	-	-	-	-	12.2	-	83.3	75.0
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1.7	1.5	0.0	0.0	0.0	0.1	0.3	0.9	2.6	7.8	16.6	33.2
CANADA	1988	17.0	7.6	-	-	-	-	0.3	2.3	12.5	35.9	98.2	206.9
CHILE	1987	3.2	2.5	-	-	-	0.1	0.4	1.1	2.9	10.2	31.7	72.6
COLOMBIA	1984	1.6	1.7	-	-	-	0.1	0.2	0.8	2.6	6.4	18.8	53.0
COSTA RICA	1988	2.4	2.7	-	-	-	-	-	0.7	4.2	4.6	25.5	125.9
CUBA	1988	8.7	4.6	-	-	-	0.3	0.7	2.8	7.9	20.3	48.5	125.6
DOMINICA	1985	5.2	3.3	-	-	-	-	-	-	-	-	-	281.7
DOMINICAN REPUBLIC	1985	1.2	1.4	-	-	-	-	0.2	1.1	2.0	4.6	15.4	47.0
ECUADOR	1987	1.0	1.1	-	-	-	0.1	0.3	0.6	2.6	4.5	8.5	35.9
EL SALVADOR	1984	0.5	0.7	-	-	-	0.2	-	0.5	2.2	2.1	4.2	18.1
FRENCH GUIANA	1984	5.0	5.2	-	-	-	-	-	-	35.5	-	-	222.2
GUADELOUPE	1981	1.9	1.0	-	-	-	-	4.8	-	-	-	14.3	-
GUATEMALA	1984	0.1	0.1	-	-	-	0.5	-	-	-	-	-	-
GUYANA	1984	1.7	1.8	-	-	-	-	-	-	-	18.5	23.4	20.4
HONDURAS	1981	-	-	-	-	-	-	-	-	-	-	-	-
JAMAICA	1984	4.2	3.0	-	-	-	-	0.6	1.3	3.1	15.8	24.2	110.6
MARTINIQUE	1985	4.4	2.3	-	-	-	-	-	6.0	-	8.5	33.3	40.0
MEXICO	1986	1.2	1.4	-	-	-	0.1	0.4	0.9	2.3	6.0	13.9	37.5
NETHERLANDS ANTILLES (CURACAO)	1981	2.4	1.5	-	-	-	-	-	-	-	-	66.7	-
PANAMA	1987	2.9	2.6	-	-	-	-	0.6	-	5.0	14.5	22.5	83.3
PARAGUAY (AREA OF INFORMATION)	1986	2.0	2.1	-	-	-	-	0.6	1.0	3.1	14.9	19.2	47.6
PERU	1983	0.6	0.7	-	-	-	-	-	0.2	1.1	1.9	9.4	21.8
PUERTO RICO	1987	7.1	4.0	-	-	-	0.3	-	1.0	10.3	27.1	37.0	81.3
SURINAME	1985	4.9	4.7	-	-	-	-	-	-	14.3	20.0	40.0	150.0
TRINIDAD AND TOBAGO	1986	8.7	5.4	-	-	-	-	2.0	1.5	12.0	26.2	42.3	163.0
UNITED STATES	1987	20.0	8.2	0.1	-	0.0	0.1	0.7	2.9	12.7	42.7	99.0	219.2
URUGUAY	1987	15.6	6.5	-	-	-	-	-	2.9	8.3	30.1	87.8	186.5
VENEZUELA	1987	1.9	2.2	-	-	-	0.2	0.3	1.8	3.2	9.4	28.2	48.0
Female													
ARGENTINA	1986	10.2	4.4	0.3	0.1	0.0	0.1	0.5	2.1	6.7	21.6	45.8	126.8
BAHAMAS	1987	2.4	1.9	-	-	-	-	4.8	-	-	27.5	-	-
BARBADOS	1988	7.4	...	-	-	-	-	-	7.0	-	19.6	32.6	56.3
BELIZE	1986	1.2	0.7	-	-	-	-	-	-	-	-	-	57.5
BRAZIL (AREA OF INFORMATION)	1986	2.0	1.7	-	-	0.0	0.1	0.4	1.1	3.1	8.0	17.5	42.3
CANADA	1988	17.0	5.9	-	-	-	-	0.5	2.0	10.5	29.7	65.5	167.5
CHILE	1987	4.7	2.8	-	-	-	0.1	0.3	1.4	5.1	10.7	26.4	93.9
COLOMBIA	1984	1.9	1.8	-	-	-	0.1	0.4	1.0	3.8	7.0	16.5	50.5
COSTA RICA	1988	3.7	3.3	-	-	-	0.3	0.4	3.5	4.2	11.9	15.1	135.7
CUBA	1988	10.2	5.3	-	-	-	-	0.6	2.2	10.1	28.4	50.6	150.0
DOMINICA	1985	2.7	2.2	-	-	-	-	-	-	-	46.5	-	-
DOMINICAN REPUBLIC	1985	1.2	1.3	-	-	-	-	-	1.4	2.0	5.6	9.6	45.8
ECUADOR	1987	1.3	1.2	-	-	-	0.1	0.1	1.1	2.2	5.7	10.1	36.6
EL SALVADOR	1984	0.6	0.6	-	-	-	-	0.6	-	0.7	3.0	5.0	15.8
FRENCH GUIANA	1984	2.5	1.9	-	-	-	-	-	-	-	-	84.7	-
GUADELOUPE	1981	6.0	2.4	-	-	-	-	-	-	-	9.2	44.4	83.3
GUATEMALA	1984	0.1	0.1	-	-	-	-	-	-	1.7	-	-	-
GUYANA	1984	1.1	1.0	-	-	-	-	-	-	-	9.3	-	51.7
HONDURAS	1981	-	-	-	-	-	-	-	-	-	-	-	-
JAMAICA	1984	5.7	3.2	-	-	-	-	-	-	2.7	16.7	41.4	111.5
MARTINIQUE	1985	4.8	1.7	-	-	-	-	-	5.3	-	-	20.2	62.5
MEXICO	1986	1.5	1.4	0.1	-	-	0.1	0.3	0.7	2.2	6.2	13.4	42.8
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	0.8	-	-	-	-	-	-	-	-	-	50.0
PANAMA	1987	1.7	1.5	-	-	-	-	1.2	0.9	3.9	5.6	15.0	30.1
PARAGUAY (AREA OF INFORMATION)	1986	1.7	1.6	-	-	-	-	-	1.0	2.9	2.0	23.1	56.3
PERU	1983	0.7	0.7	-	-	-	-	0.2	0.4	0.9	2.1	7.8	22.0
PUERTO RICO	1987	7.4	3.5	-	-	-	-	1.1	1.3	6.6	13.8	34.8	108.9
SURINAME	1985	5.3	4.4	-	-	-	-	3.8	-	26.7	22.2	-	75.0
TRINIDAD AND TOBAGO	1986	5.3	3.7	-	-	-	-	1.0	4.5	6.9	11.9	47.0	82.0
UNITED STATES	1987	19.8	6.0	-	-	-	0.1	0.5	2.4	10.9	31.0	67.4	159.6
URUGUAY	1987	19.4	6.4	-	-	-	-	1.5	2.3	8.0	29.3	71.2	205.1
VENEZUELA	1987	2.3	2.3	-	-	-	0.2	0.1	0.4	4.6	9.7	24.6	69.4

TABLE III-9a(8).

Number of deaths from malignant neoplasm of rectum, rectosigmoid junction, and anus (154), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	881	1	2	1	5	8	36	73	208	277	263	7
BAHAMAS	1987	11	-	-	-	-	-	2	1	3	4	1	-
BARBADOS	1988	11	-	-	-	-	-	-	-	1	7	3	-
BELIZE	1986	2	-	-	-	-	-	-	-	-	2	-	-
BRAZIL (AREA OF INFORMATION)	1986	1368	-	2	2	19	69	99	165	315	368	324	5
CANADA	1988	1360	-	-	-	-	5	29	93	262	431	540	-
CHILE	1987	229	-	-	-	2	7	13	20	49	70	68	-
COLOMBIA	1984	262	-	2	-	5	16	20	40	54	69	52	4
COSTA RICA	1986	30	-	-	-	2	4	1	4	3	6	10	-
CUBA	1988	283	-	-	-	1	2	9	26	55	76	114	-
DOMINICA	1985	2	-	-	-	-	-	-	-	-	-	2	-
DOMINICAN REPUBLIC	1985	40	-	-	-	1	3	3	4	5	11	13	-
ECUADOR	1987	56	-	-	-	1	3	5	8	8	11	20	-
EL SALVADOR	1984	2	-	-	-	-	-	-	-	1	1	-	-
FRENCH GUIANA	1984	1	-	-	-	-	-	1	-	-	-	-	-
GUADELOUPE	1981	8	-	-	-	-	-	-	2	2	1	3	-
GUATEMALA	1984	12	-	-	-	-	-	4	-	4	4	-	-
GUYANA	1984	7	-	-	-	-	-	-	1	3	3	-	-
HONDURAS	1981	4	-	-	-	1	-	1	-	2	-	-	-
JAMAICA	1984	53	-	-	-	-	1	1	5	12	21	11	2
MARTINIQUE	1985	9	-	-	-	-	-	-	-	4	1	4	-
MEXICO	1986	325	-	1	-	1	11	20	46	65	74	106	1
NETHERLANDS ANTILLES (CURACAO)	1981	16	-	-	-	-	1	1	2	1	7	4	-
PANAMA	1987	29	-	-	-	-	1	5	3	3	11	8	-
PARAGUAY (AREA OF INFORMATION)	1986	16	-	-	-	-	2	2	1	2	3	6	-
PERU	1983	82	-	-	-	1	2	3	10	10	28	29	-
PUERTO RICO	1987	53	-	-	-	-	1	3	6	8	17	18	-
SURINAME	1985	1	-	-	-	-	-	-	-	1	-	-	-
TRINIDAD AND TOBAGO	1986	19	-	-	-	-	-	-	1	4	8	6	-
UNITED STATES	1987	7972	-	-	1	7	59	202	486	1500	2406	3311	-
URUGUAY	1987	225	-	-	-	-	1	6	17	37	69	94	1
VENEZUELA	1987	136	-	-	-	-	11	10	16	31	32	36	-
Male													
ARGENTINA	1986	513	-	-	-	4	4	19	48	128	168	135	6
BAHAMAS	1987	6	-	-	-	-	-	1	1	2	2	-	-
BARBADOS	1988	5	-	-	-	-	-	-	-	1	4	-	-
BELIZE	1986	2	-	-	-	-	-	-	-	-	2	-	-
BRAZIL (AREA OF INFORMATION)	1986	676	-	2	1	14	33	39	84	156	191	155	1
CANADA	1988	803	-	-	-	-	2	18	58	165	278	282	-
CHILE	1987	113	-	-	-	2	3	5	10	30	37	26	-
COLOMBIA	1984	130	-	2	-	3	11	9	22	25	39	17	2
COSTA RICA	1986	14	-	-	-	1	3	1	1	1	3	4	-
CUBA	1988	148	-	-	-	-	1	5	13	21	43	65	-
DOMINICA	1985	2	-	-	-	-	-	-	-	-	-	2	-
DOMINICAN REPUBLIC	1985	20	-	-	-	1	-	1	1	1	8	8	-
ECUADOR	1987	31	-	-	-	1	3	2	6	5	3	11	-
EL SALVADOR	1984	1	-	-	-	-	-	-	-	1	-	-	-
FRENCH GUIANA	1984	1	-	-	-	-	-	1	-	-	-	-	-
GUADELOUPE	1981	5	-	-	-	-	-	-	1	1	1	2	-
GUATEMALA	1984	4	-	-	-	-	-	-	-	-	4	-	-
GUYANA	1984	5	-	-	-	-	-	-	-	2	3	-	-
HONDURAS	1981	1	-	-	-	-	-	-	-	1	-	-	-
JAMAICA	1984	25	-	-	-	-	1	1	4	5	9	4	1
MARTINIQUE	1985	6	-	-	-	-	-	-	-	2	1	3	-
MEXICO	1986	149	-	-	-	1	8	11	18	32	34	46	1
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	-	-	-	1	-	3	-	-
PANAMA	1987	11	-	-	-	-	1	2	2	2	3	1	-
PARAGUAY (AREA OF INFORMATION)	1986	7	-	-	-	1	1	-	-	-	2	3	-
PERU	1983	35	-	-	-	-	-	3	5	3	7	6	-
PUERTO RICO	1987	24	-	-	-	-	-	-	-	-	-	-	-
SURINAME	1985	-	-	-	-	-	-	-	1	3	4	2	-
TRINIDAD AND TOBAGO	1986	10	-	-	-	-	-	-	-	-	-	-	-
UNITED STATES	1987	4198	-	-	-	3	42	111	299	930	1384	1429	-
URUGUAY	1987	133	-	-	-	-	-	3	7	27	42	53	1
VENEZUELA	1987	60	-	-	-	-	5	5	9	15	14	12	-
Female													
ARGENTINA	1986	365	1	2	-	1	4	16	25	79	108	128	1
BAHAMAS	1987	5	-	-	-	-	-	1	-	1	2	1	-
BARBADOS	1988	6	-	-	-	-	-	-	-	-	-	3	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	3	-
BRAZIL (AREA OF INFORMATION)	1986	690	-	-	1	5	36	59	80	159	177	169	4
CANADA	1988	557	-	-	-	-	3	11	35	97	153	258	-
CHILE	1987	116	-	-	-	-	4	8	10	19	33	42	-
COLOMBIA	1984	132	-	-	-	2	5	11	18	29	30	35	2
COSTA RICA	1986	16	-	-	-	1	1	-	3	2	3	6	-
CUBA	1988	135	-	-	-	1	1	4	13	34	33	49	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	20	-	-	-	-	3	2	3	4	3	5	-
ECUADOR	1987	25	-	-	-	-	-	3	2	3	8	9	-
EL SALVADOR	1984	1	-	-	-	-	-	-	-	-	1	-	-
FRENCH GUIANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
GUADELOUPE	1981	3	-	-	-	-	-	-	1	1	-	1	-
GUATEMALA	1984	8	-	-	-	-	-	4	-	4	-	-	-
GUYANA	1984	2	-	-	-	-	-	-	1	1	-	-	-
HONDURAS	1981	3	-	-	-	1	-	1	-	1	-	-	-
JAMAICA	1984	28	-	-	-	-	-	-	1	7	12	7	1
MARTINIQUE	1985	3	-	-	-	-	-	-	-	2	-	1	-
MEXICO	1986	176	-	1	-	-	5	9	28	33	40	60	-
NETHERLANDS ANTILLES (CURACAO)	1981	12	-	-	-	-	1	1	1	1	4	4	-
PANAMA	1987	18	-	-	-	-	-	1	1	1	8	7	-
PARAGUAY (AREA OF INFORMATION)	1986	9	-	-	-	-	1	1	1	2	1	3	-
PERU	1983	47	-	-	-	1	2	1	7	4	12	20	-
PUERTO RICO	1987	29	-	-	-	-	1	-	1	5	10	12	-
SURINAME	1985	1	-	-	-	-	-	-	-	1	-	-	-
TRINIDAD AND TOBAGO	1986	9	-	-	-	-	-	-	-	1	4	4	-
UNITED STATES	1987	3774	-	-	1	4	17	91	187	570	1022	1882	-
URUGUAY	1987	92	-	-	-	-	1	3	10	10	27	41	-
VENEZUELA	1987	76	-	-	-	-	6	5	7	16	18	24	-

TABLE III-9b(8).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of rectum, rectosigmoid junction, and anus (154), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	2.9	1.4	0.1	0.1	0.0	0.1	0.2	1.0	2.4	8.0	16.1	29.1
BAHAMAS	1987	4.4	3.5	-	-	-	-	-	7.3	5.1	22.1	45.8	22.6
BARBADOS	1988	4.3	...	-	-	-	-	-	-	-	5.8	46.1	27.0
BELIZE	1986	1.2	0.7	-	-	-	-	-	-	-	-	31.5	-
BRAZIL (AREA OF INFORMATION)	1986	1.0	0.9	-	0.0	0.0	0.1	0.3	0.7	1.6	4.4	9.0	17.3
CANADA	1988	5.2	2.1	-	-	-	-	0.1	0.8	3.6	11.1	25.8	51.4
CHILE	1987	1.8	1.3	-	-	-	0.1	0.3	0.8	1.9	6.3	15.1	27.8
COLOMBIA	1984	0.9	0.9	-	0.1	-	0.1	0.4	0.7	2.1	4.0	8.8	17.9
COSTA RICA	1988	1.0	1.0	-	-	-	0.3	0.8	0.3	2.1	2.3	8.0	29.2
CUBA	1988	2.8	1.5	-	-	-	0.0	0.1	0.7	2.7	7.8	14.9	39.0
DOMINICA	1985	2.6	1.2	-	-	-	-	-	-	-	-	-	105.3
DOMINICAN REPUBLIC	1985	0.6	0.7	-	-	-	0.1	0.3	0.5	1.0	2.0	8.6	19.5
ECUADOR	1987	0.6	0.6	-	-	-	0.0	0.2	0.5	1.3	1.9	4.5	16.9
EL SALVADOR	1984	0.0	0.0	-	-	-	-	-	-	-	0.5	0.9	-
FRENCH GUIANA	1984	1.3	1.3	-	-	-	-	-	12.2	-	-	-	-
GUADELOUPE	1981	2.4	1.5	-	-	-	-	-	-	7.2	9.2	6.3	30.0
GUATEMALA	1984	0.2	0.2	-	-	-	-	-	0.8	-	1.2	2.5	-
GUYANA	1984	0.7	0.7	-	-	-	-	-	-	1.7	6.9	11.3	-
HONDURAS	1981	0.1	0.1	-	-	-	0.1	-	0.3	-	1.4	-	-
JAMAICA	1984	2.3	1.6	-	-	-	-	0.3	0.8	3.7	9.8	23.4	21.4
MARTINIQUE	1985	2.7	1.2	-	-	-	-	-	-	-	15.6	5.3	30.8
MEXICO	1986	0.4	0.4	-	0.0	-	0.0	0.1	0.3	0.9	2.0	4.0	10.4
NETHERLANDS ANTILLES (CURACAO)	1981	9.8	6.8	-	-	-	-	4.5	5.9	16.7	11.1	116.7	100.0
PANAMA	1987	1.3	1.1	-	-	-	-	0.3	1.3	1.9	2.8	16.0	24.8
PARAGUAY (AREA OF INFORMATION)	1986	0.7	0.7	-	-	-	-	0.6	1.0	0.7	2.0	5.3	24.3
PERU	1983	0.4	0.4	-	-	-	0.0	0.1	0.1	0.8	1.2	5.8	15.1
PUERTO RICO	1987	1.5	0.8	-	-	-	-	0.2	0.7	1.9	3.3	9.2	16.3
SURINAME	1985	0.3	0.2	-	-	-	-	-	-	-	5.3	-	-
TRINIDAD AND TOBAGO	1986	1.6	1.1	-	-	-	-	-	-	1.2	6.3	17.9	28.0
UNITED STATES	1987	3.3	1.2	-	-	0.0	0.0	0.1	0.6	2.1	6.8	13.6	27.2
URUGUAY	1987	7.4	2.8	-	-	-	-	0.2	1.7	5.0	12.1	33.3	77.2
VENEZUELA	1987	0.7	0.8	-	-	-	-	0.4	0.5	1.4	3.9	7.6	18.1
Male													
ARGENTINA	1986	3.4	1.8	-	-	-	0.2	0.2	1.0	3.2	10.3	22.1	37.0
BAHAMAS	1987	4.9	4.2	-	-	-	-	-	7.6	10.6	31.7	51.4	-
BARBADOS	1988	4.1	...	-	-	-	-	-	-	-	14.1	66.7	-
BELIZE	1986	2.4	1.5	-	-	-	-	-	-	-	-	65.1	-
BRAZIL (AREA OF INFORMATION)	1986	1.0	0.9	-	0.0	0.0	0.1	0.3	0.5	1.7	4.4	9.7	18.1
CANADA	1988	6.2	2.8	-	-	-	-	0.1	1.0	4.4	14.4	37.1	70.3
CHILE	1987	1.8	1.4	-	-	-	0.2	0.3	0.7	1.9	8.3	18.3	27.7
COLOMBIA	1984	0.9	0.9	-	0.1	-	0.1	0.5	0.8	2.3	3.9	10.9	14.1
COSTA RICA	1988	1.0	1.0	-	-	-	0.3	1.2	0.7	1.0	1.5	8.9	28.0
CUBA	1988	2.9	1.5	-	-	-	-	0.1	0.8	2.7	5.9	16.7	43.4
DOMINICA	1985	5.2	3.3	-	-	-	-	-	-	-	-	-	281.7
DOMINICAN REPUBLIC	1985	0.6	0.7	-	-	-	0.1	-	0.4	0.5	0.8	12.3	25.1
ECUADOR	1987	0.6	0.7	-	-	-	0.1	0.4	0.4	1.9	2.5	2.6	20.8
EL SALVADOR	1984	0.0	0.0	-	-	-	-	-	-	-	1.1	-	-
FRENCH GUIANA	1984	2.5	2.5	-	-	-	-	-	24.4	-	-	-	-
GUADELOUPE	1981	3.1	1.9	-	-	-	-	-	-	7.8	9.2	14.3	50.0
GUATEMALA	1984	0.1	0.1	-	-	-	-	-	-	-	-	5.1	-
GUYANA	1984	1.1	1.0	-	-	-	-	-	-	-	9.3	23.4	-
HONDURAS	1981	0.1	0.1	-	-	-	-	-	-	-	1.4	-	-
JAMAICA	1984	2.2	1.8	-	-	-	-	0.6	1.3	6.3	8.8	21.8	18.4
MARTINIQUE	1985	3.8	1.7	-	-	-	-	-	-	-	16.9	11.1	60.0
MEXICO	1986	0.4	0.4	-	-	-	0.0	0.1	0.3	0.7	2.1	4.0	10.4
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	3.5	-	-	-	-	-	-	16.7	-	100.0	-
PANAMA	1987	0.9	0.9	-	-	-	-	0.6	1.7	2.5	3.6	8.5	6.4
PARAGUAY (AREA OF INFORMATION)	1986	0.8	0.7	-	-	-	-	0.6	1.0	-	-	7.7	28.6
PERU	1983	0.4	0.4	-	-	-	-	-	0.1	0.5	1.5	7.1	10.9
PUERTO RICO	1987	1.4	0.9	-	-	-	-	-	1.5	3.4	2.6	8.1	11.9
SURINAME	1985	-	-	-	-	-	-	-	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	1.7	1.3	-	-	-	-	-	-	-	-	-	-
UNITED STATES	1987	3.5	1.5	-	-	-	0.0	0.2	0.7	2.4	9.8	18.8	21.7
URUGUAY	1987	8.8	3.7	-	-	-	-	-	2.6	9.0	17.7	33.3	
VENEZUELA	1987	0.7	0.7	-	-	-	-	0.3	0.5	4.2	18.5	45.0	111.1
Female										1.5	3.8	7.1	14.0
ARGENTINA	1986	2.4	1.1	0.3	0.1	-	0.0	0.2	0.9	1.6	5.8	11.3	23.7
BAHAMAS	1987	4.0	2.7	-	-	-	-	-	7.1	-	13.8	41.3	35.2
BARBADOS	1988	4.4	...	-	-	-	-	-	-	-	-	32.6	42.3
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1.0	0.8	-	-	0.0	0.0	0.3	0.8	1.6	4.4	8.3	16.7
CANADA	1988	4.2	1.5	-	-	-	-	0.1	0.6	2.7	7.9	16.6	39.7
CHILE	1987	1.8	1.1	-	-	-	-	0.4	1.0	1.8	4.6	12.6	27.8
COLOMBIA	1984	0.9	0.9	-	-	-	0.1	0.2	0.8	1.9	4.1	7.1	20.5
COSTA RICA	1988	1.1	1.0	-	-	-	0.3	0.4	-	3.1	3.0	7.6	30.2
CUBA	1988	2.7	1.5	-	-	-	0.1	0.1	0.8	2.7	9.7	13.2	34.3
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	0.6	0.7	-	-	-	-	0.6	0.7	1.5	3.2	4.8	14.3
ECUADOR	1987	0.5	0.5	-	-	-	-	-	0.7	0.6	1.4	6.2	13.7
EL SALVADOR	1984	0.0	0.0	-	-	-	-	-	-	-	-	1.7	-
FRENCH GUIANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
GUADELOUPE	1981	1.8	1.1	-	-	-	-	-	-	6.8	9.2	-	16.7
GUATEMALA	1984	0.2	0.2	-	-	-	-	-	1.2	-	2.4	-	-
GUYANA	1984	0.4	0.5	-	-	-	-	-	-	3.5	4.6	-	-
HONDURAS	1981	0.2	0.2	-	-	-	0.3	-	0.6	-	1.4	-	-
JAMAICA	1984	2.4	1.4	-	-	-	-	-	-	1.4	10.6	24.8	23.6
MARTINIQUE	1985	1.8	0.8	-	-	-	-	-	-	-	14.5	-	12.5
MEXICO	1986	0.4	0.4	-	0.0	-	-	0.1	0.2	1.1	1.9	4.0	10.4
NETHERLANDS ANTILLES (CURACAO)	1981	14.6	10.0	-	-	-	-	9.1	11.1	16.7	20.0	133.3	200.0
PANAMA	1987	1.6	1.3	-	-	-	-	-	0.9	1.3	1.9	24.0	42.2
PARAGUAY (AREA OF INFORMATION)	1986	0.8	0.8	-	-	-	-	0.6	1.0	1.5	4.0	3.3	21.1
PERU	1983	0.5	0.5	-	-	-	0.1	0.1	0.1	1.1	0.9	4.7	18.3
PUERTO RICO	1987	1.6	0.7	-	-	-	-	0.4	-	0.6	3.8	10.2	20.1
SURINAME	1985	0.5	0.5	-	-	-	-	-	-	-	11.1	-	-
TRINIDAD AND TOBAGO	1986	1.5	0.9	-	-	-	-	-	-	-	3.0	17.1	32.8
UNITED STATES	1987	3.0	0.9	-	-	0.0	0.0	0.1	0.5	1.6	4.9	10.4	23.9
URUGUAY	1987	5.9	2.2	-	-	-	-	0.5	1.7	5.7	6.2	23.7	55.3
VENEZUELA	1987	0.8	0.8	-	-	-	-	0.4	0.5	1.2	4.0	8.0	21.1

TABLE III-9a(9).

Number of deaths from malignant neoplasm of trachea, bronchus, and lung (162), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	7193	4	14	6	11	55	324	1065	2149	2145	1373	47
BAHAMAS	1987	34	-	-	-	-	-	1	6	16	9	2	-
BARBADOS	1988	21	-	-	-	-	1	1	3	4	6	6	-
BELIZE	1986	6	-	-	-	-	-	2	-	1	2	1	-
BRAZIL (AREA OF INFORMATION)	1986	8694	2	1	11	43	101	406	1347	2653	2533	1568	29
CANADA	1988	13104	-	-	-	2	20	235	1096	3409	4763	3578	1
CHILE	1987	1266	-	-	1	4	7	41	141	395	388	289	-
COLOMBIA	1984	1483	-	1	2	10	21	65	216	395	449	308	16
COSTA RICA	1988	166	-	-	-	2	2	4	10	37	64	67	-
CUBA	1988	3135	-	-	1	2	14	114	286	579	981	1158	-
DOMINICA	1985	3	-	-	-	-	-	-	1	-	1	1	-
DOMINICAN REPUBLIC	1985	142	-	1	1	3	2	4	19	41	32	39	-
ECUADOR	1987	263	-	1	3	5	4	10	33	64	76	65	2
EL SALVADOR	1984	38	-	-	-	-	-	2	6	8	11	11	-
FRENCH GUIANA	1984	2	-	-	-	-	-	-	-	1	-	1	-
GUADELOUPE	1981	19	-	-	-	-	-	2	1	5	5	5	-
GUATEMALA	1984	60	-	-	-	-	8	4	4	12	16	16	-
GUYANA	1984	15	-	-	-	1	-	1	2	3	5	3	-
HONDURAS	1981	10	-	-	-	-	1	1	1	2	1	4	-
JAMAICA	1984	222	-	-	-	1	5	12	29	57	67	50	1
MARTINIQUE	1985	25	-	-	-	1	-	-	5	8	9	2	-
MEXICO	1986	4412	1	8	4	33	71	153	475	1053	1314	1277	23
NETHERLANDS ANTILLES (CURACAO)	1981	24	-	-	-	-	-	1	3	5	7	8	-
PANAMA	1987	143	-	-	-	2	1	8	15	42	43	30	-
PARAGUAY (AREA OF INFORMATION)	1986	90	-	-	-	-	-	7	11	26	30	16	-
PERU	1983	404	1	2	-	5	4	16	52	85	128	102	9
PUERTO RICO	1987	429	-	-	-	1	-	12	33	99	120	163	1
SURINAME	1985	14	-	-	-	-	-	-	2	2	6	4	-
TRINIDAD AND TOBAGO	1986	97	-	-	-	1	1	5	13	23	34	20	-
UNITED STATES	1987	130009	3	3	2	20	279	2490	11513	33983	47497	34213	6
URUGUAY	1987	1166	-	-	-	-	2	34	138	344	368	278	2
VENEZUELA	1987	1194	1	1	3	6	14	56	154	348	361	247	3
Male													
ARGENTINA	1986	6127	4	10	2	8	37	277	954	1895	1849	1057	34
BAHAMAS	1987	21	-	-	-	-	-	1	2	11	7	-	-
BARBADOS	1988	16	-	-	-	-	1	1	3	2	4	5	-
BELIZE	1986	4	-	-	-	-	-	2	-	1	1	1	-
BRAZIL (AREA OF INFORMATION)	1986	6635	1	1	2	27	64	270	1007	2102	1996	1147	18
CANADA	1988	9239	-	-	-	2	8	123	682	2474	3376	2573	1
CHILE	1987	918	-	-	1	4	7	31	110	302	282	181	-
COLOMBIA	1984	976	-	-	-	5	11	35	131	264	318	202	10
COSTA RICA	1988	139	-	-	-	2	-	2	8	27	49	51	-
CUBA	1988	2313	-	-	1	-	9	72	207	434	732	858	-
DOMINICA	1985	3	-	-	-	-	-	-	1	-	1	1	-
DOMINICAN REPUBLIC	1985	111	-	-	1	2	1	4	14	33	25	31	-
ECUADOR	1987	180	-	-	-	4	-	7	25	51	57	36	-
EL SALVADOR	1984	23	-	-	-	-	-	1	5	6	4	7	-
FRENCH GUIANA	1984	1	-	-	-	-	-	-	-	1	-	-	-
GUADELOUPE	1981	15	-	-	-	-	-	2	-	4	6	3	-
GUATEMALA	1984	16	-	-	-	-	-	-	4	4	8	-	-
GUYANA	1984	12	-	-	-	1	-	1	1	3	3	3	-
HONDURAS	1981	6	-	-	-	-	-	-	-	1	1	4	-
JAMAICA	1984	174	-	-	-	-	3	9	23	46	52	40	1
MARTINIQUE	1985	15	-	-	-	1	-	-	2	5	6	1	-
MEXICO	1986	3009	-	6	4	19	41	83	316	737	931	857	15
NETHERLANDS ANTILLES (CURACAO)	1981	21	-	-	-	-	-	1	3	5	6	6	-
PANAMA	1987	104	-	-	-	1	1	5	11	28	36	22	-
PARAGUAY (AREA OF INFORMATION)	1986	75	-	-	-	-	-	7	9	23	26	10	-
PERU	1983	272	-	2	-	2	6	38	55	99	63	7	
PUERTO RICO	1987	285	-	-	-	1	-	7	24	71	77	104	1
SURINAME	1985	7	-	-	-	-	-	-	1	1	2	3	-
TRINIDAD AND TOBAGO	1986	72	-	-	-	1	-	4	8	19	26	14	-
UNITED STATES	1987	87261	2	-	-	13	178	1492	7395	22892	32360	22923	6
URUGUAY	1987	1057	-	-	-	-	2	33	128	320	328	245	1
VENEZUELA	1987	794	1	-	1	4	7	35	102	235	243	163	3
Female													
ARGENTINA	1986	1023	-	3	-	2	18	46	110	247	287	306	4
BAHAMAS	1987	13	-	-	-	-	-	-	4	5	2	2	-
BARBADOS	1988	5	-	-	-	-	-	-	-	2	2	1	-
BELIZE	1986	2	-	-	-	-	-	-	-	1	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	2055	1	-	9	16	37	136	340	550	536	420	10
CANADA	1988	3865	-	-	-	-	12	112	414	935	1387	1005	-
CHILE	1987	348	-	-	-	-	-	10	31	93	106	108	-
COLOMBIA	1984	507	-	1	2	5	10	30	85	131	131	106	6
COSTA RICA	1988	47	-	-	-	-	2	2	2	10	15	16	-
CUBA	1988	822	-	-	-	2	5	42	79	145	249	300	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	31	-	1	-	1	1	-	5	8	7	8	-
ECUADOR	1987	83	-	1	3	1	4	3	8	13	19	29	2
EL SALVADOR	1984	15	-	-	-	-	-	1	1	2	7	4	-
FRENCH GUIANA	1984	1	-	-	-	-	-	-	-	-	-	1	-
GUADELOUPE	1981	4	-	-	-	-	-	-	1	1	-	2	-
GUATEMALA	1984	44	-	-	-	-	8	4	-	8	8	16	-
GUYANA	1984	3	-	-	-	-	-	-	1	-	2	-	-
HONDURAS	1981	4	-	-	-	-	1	1	1	1	-	-	-
JAMAICA	1984	48	-	-	-	1	2	3	6	11	15	10	-
MARTINIQUE	1985	10	-	-	-	-	-	-	3	3	3	1	-
MEXICO	1986	1403	1	2	-	14	30	70	159	316	383	420	8
NETHERLANDS ANTILLES (CURACAO)	1981	3	-	-	-	-	-	-	-	-	1	2	-
PANAMA	1987	39	-	-	-	1	-	3	4	14	9	8	-
PARAGUAY (AREA OF INFORMATION)	1986	15	-	-	-	-	-	-	2	3	4	6	-
PERU	1983	132	1	-	-	5	2	10	14	30	29	39	2
PUERTO RICO	1987	144	-	-	-	-	-	5	9	28	41	59	-
SURINAME	1985	7	-	-	-	-	-	-	1	1	4	1	-
TRINIDAD AND TOBAGO	1986	25	-	-	-	-	1	1	5	4	8	6	-
UNITED STATES	1987	42748	1	3	2	7	101	998	4118	11091	15137	11290	-
URUGUAY	1987	109	-	-	-	-	-	1	10	24	40	33	1
VENEZUELA	1987	400	-	1	2	2	7	21	52	113	118	84	-

TABLE III-9b(9).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from malignant neoplasm of trachea, bronchus, and lung (162), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	23.4	12.3	0.6	0.5	0.1	0.2	1.2	8.8	34.8	82.5	124.7	151.7
BAHAMAS	1987	13.7	11.1	-	-	-	-	-	3.7	30.7	117.9	103.1	45.2
BARBADOS	1988	8.2	...	-	-	-	-	2.2	3.8	16.3	23.1	39.5	54.1
BELIZE	1986	3.6	2.8	-	-	-	-	-	11.5	-	10.7	31.5	29.6
BRAZIL (AREA OF INFORMATION)	1985	6.3	5.5	0.0	0.0	0.0	0.2	0.5	2.8	13.2	37.0	61.9	83.9
CANADA	1988	50.2	21.1	-	-	-	0.0	0.4	6.3	42.0	143.9	285.2	340.5
CHILE	1987	10.1	7.0	-	-	0.0	0.2	0.3	2.7	13.2	51.0	83.7	118.0
COLOMBIA	1984	5.3	5.1	-	0.0	0.0	0.2	0.5	2.3	11.3	29.5	57.4	105.8
COSTA RICA	1988	6.5	6.2	-	-	-	0.3	0.4	1.4	5.2	27.9	85.3	195.9
CUBA	1988	30.9	16.2	-	-	0.1	0.1	1.0	8.9	29.9	82.0	192.8	396.0
DOMINICA	1985	3.9	3.0	-	-	-	-	-	-	22.7	-	32.3	52.6
DOMINICAN REPUBLIC	1985	2.2	2.5	-	0.1	0.1	0.2	0.2	0.7	4.8	16.1	25.1	58.4
ECUADOR	1987	2.7	2.7	-	0.1	0.1	0.2	0.3	1.1	5.3	15.6	30.8	54.9
EL SALVADOR	1984	0.8	0.9	-	-	-	-	-	0.5	2.2	4.1	10.2	20.5
FRENCH GUIANA	1984	2.5	2.4	-	-	-	-	-	-	-	25.5	-	101.0
GUADELOUPE	1981	5.8	3.4	-	-	-	-	-	6.1	3.6	22.9	37.5	50.0
GUATEMALA	1984	0.8	0.9	-	-	-	-	0.8	0.6	0.8	3.7	10.2	23.2
GUYANA	1984	1.6	1.6	-	-	-	0.5	-	1.2	3.4	6.9	18.8	28.0
HONDURAS	1981	0.3	0.4	-	-	-	-	0.2	0.3	0.4	1.4	1.3	14.9
JAMAICA	1984	9.6	7.6	-	-	-	0.2	1.5	7.5	21.2	46.3	74.8	97.5
MARTINIQUE	1985	7.6	4.2	-	-	-	1.8	-	-	16.9	31.3	47.6	15.4
MEXICO	1986	5.4	5.7	0.0	0.1	0.0	0.2	0.6	2.1	9.5	32.5	70.8	125.3
NETHERLANDS ANTILLES (CURACAO)	1981	14.6	10.1	-	-	-	-	-	5.9	23.0	55.6	116.7	200.0
PANAMA	1987	6.3	5.6	-	-	-	0.4	0.3	3.4	9.7	38.7	65.3	93.2
PARAGUAY (AREA OF INFORMATION)	1986	4.0	4.2	-	-	-	-	-	3.4	8.2	26.6	53.3	64.8
PERU	1983	2.2	2.1	0.1	0.1	-	0.1	0.1	0.9	4.0	10.1	26.6	55.2
PUERTO RICO	1987	12.1	6.2	-	-	-	0.1	-	2.8	10.5	40.4	65.1	148.0
SURINAME	1985	3.7	3.2	-	-	-	-	-	-	6.9	10.5	60.0	66.7
TRINIDAD AND TOBAGO	1986	8.1	6.2	-	-	-	0.4	0.5	3.8	15.2	35.9	76.1	93.5
UNITED STATES	1987	53.4	21.2	0.1	0.0	0.0	0.1	0.6	7.3	49.5	154.3	268.8	281.2
URUGUAY	1987	38.1	16.0	-	-	-	-	0.5	9.7	40.2	112.2	177.7	228.2
VENEZUELA	1987	6.5	6.9	0.2	0.0	0.1	0.2	0.5	3.0	13.0	43.6	85.6	123.9
Male													
ARGENTINA	1986	40.2	22.7	1.2	0.7	0.1	0.3	1.6	14.9	63.2	152.3	241.9	289.6
BAHAMAS	1987	17.0	14.6	-	-	-	-	-	7.6	21.1	174.3	179.9	-
BARBADOS	1988	13.1	...	-	-	-	-	4.5	8.2	36.6	28.2	66.7	125.0
BELIZE	1986	4.8	3.9	-	-	-	-	-	23.5	-	-	32.6	61.0
BRAZIL (AREA OF INFORMATION)	1985	9.6	8.7	0.0	0.0	0.0	0.2	0.6	3.8	19.8	59.8	101.6	133.6
CANADA	1988	71.5	32.6	-	-	-	0.1	0.3	6.5	52.1	216.2	450.6	641.3
CHILE	1987	14.8	11.6	-	-	0.1	0.3	0.7	4.1	21.4	83.5	139.5	193.2
COLOMBIA	1984	6.9	7.3	-	-	-	0.2	0.5	2.4	13.8	41.5	89.0	167.2
COSTA RICA	1988	9.6	10.2	-	-	-	0.6	-	1.4	8.3	41.5	138.8	356.6
CUBA	1988	44.7	23.5	-	-	0.1	-	1.2	11.1	42.9	122.6	283.8	573.1
DOMINICA	1985	7.8	7.2	-	-	-	-	-	-	52.4	-	71.4	140.8
DOMINICAN REPUBLIC	1985	3.4	4.0	-	-	0.1	0.3	0.2	1.4	7.2	25.3	38.6	97.2
ECUADOR	1987	3.6	3.9	-	-	-	0.4	-	1.5	8.1	25.4	48.5	88.1
EL SALVADOR	1984	1.0	1.2	-	-	-	-	-	0.5	3.7	6.4	8.4	31.7
FRENCH GUIANA	1984	2.5	2.4	-	-	-	-	-	-	-	52.4	-	-
GUADELOUPE	1981	9.4	5.9	-	-	-	-	-	12.7	-	36.7	85.7	75.0
GUATEMALA	1984	0.4	0.5	-	-	-	-	-	-	1.7	2.5	10.3	-
GUYANA	1984	2.6	2.6	-	-	-	0.9	-	2.5	3.5	13.9	23.4	61.2
HONDURAS	1981	0.3	0.5	-	-	-	-	-	-	-	1.4	2.7	32.3
JAMAICA	1984	15.3	13.0	-	-	-	-	1.8	12.0	35.9	80.6	125.9	184.3
MARTINIQUE	1985	9.4	5.3	-	-	-	2.7	-	-	14.5	42.4	66.7	20.0
MEXICO	1986	7.4	8.4	-	0.1	0.0	0.2	0.7	2.3	13.1	48.0	109.8	193.8
NETHERLANDS ANTILLES (CURACAO)	1981	25.6	18.9	-	-	-	-	-	12.5	59.0	125.9	200.0	300.0
PANAMA	1987	9.0	8.0	-	-	-	0.4	0.6	4.2	13.9	50.7	101.4	141.0
PARAGUAY (AREA OF INFORMATION)	1986	6.6	7.4	-	-	-	-	-	7.0	13.8	48.9	100.0	95.2
PERU	1983	2.9	3.1	-	0.2	-	-	0.1	0.7	5.8	13.4	44.2	76.3
PUERTO RICO	1987	16.5	9.0	-	-	-	0.3	-	3.5	16.4	62.1	89.0	206.3
SURINAME	1985	3.8	3.7	-	-	-	-	-	-	7.1	10.0	40.0	150.0
TRINIDAD AND TOBAGO	1986	12.0	9.7	-	-	-	0.8	-	6.1	19.2	62.3	122.1	152.2
UNITED STATES	1987	73.6	32.0	0.1	-	-	0.1	0.8	8.8	65.4	220.8	413.6	533.7
URUGUAY	1987	70.3	32.0	-	-	-	-	1.0	19.1	75.9	218.9	351.1	513.4
VENEZUELA	1987	8.6	9.6	0.4	-	0.0	0.2	0.5	3.7	17.3	59.6	122.5	190.6
Female													
ARGENTINA	1986	6.6	3.1	-	0.2	-	0.1	0.6	2.5	7.1	18.2	30.0	56.7
BAHAMAS	1987	10.3	7.9	-	-	-	-	-	-	39.6	68.9	41.3	70.4
BARBADOS	1988	3.7	...	-	-	-	-	-	-	-	18.6	21.7	14.1
BELIZE	1986	2.4	1.7	-	-	-	-	-	-	-	20.8	30.6	-
BRAZIL (AREA OF INFORMATION)	1985	3.0	2.5	0.0	-	0.1	0.1	0.3	1.9	6.6	15.1	25.2	41.6
CANADA	1988	29.4	11.9	-	-	-	-	0.5	6.0	31.9	76.4	150.7	154.7
CHILE	1987	5.5	3.4	-	-	-	-	-	1.3	5.6	22.5	40.5	71.4
COLOMBIA	1984	3.6	3.3	-	0.1	0.1	0.2	0.4	2.1	8.9	18.7	30.8	62.2
COSTA RICA	1988	3.3	2.9	-	-	-	-	0.8	1.4	2.1	14.9	37.8	80.4
CUBA	1988	16.5	8.7	-	-	-	0.2	0.7	6.6	16.7	41.2	99.2	210.2
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	1.0	1.1	-	0.3	-	0.1	0.2	-	2.5	6.4	11.2	22.9
ECUADOR	1987	1.7	1.6	-	0.2	0.2	0.1	0.6	0.7	2.5	6.2	14.7	44.2
EL SALVADOR	1984	0.6	0.6	-	-	-	-	-	0.5	0.7	2.0	11.7	12.7
FRENCH GUIANA	1984	2.5	2.2	-	-	-	-	-	-	-	-	-	185.2
GUADELOUPE	1981	2.4	1.3	-	-	-	-	-	-	6.8	9.2	-	33.3
GUATEMALA	1984	1.2	1.3	-	-	-	-	1.6	1.2	-	4.9	10.0	44.4
GUYANA	1984	0.6	0.6	-	-	-	-	-	-	3.3	-	14.5	-
HONDURAS	1981	0.2	0.2	-	-	-	-	0.4	0.6	0.9	1.4	-	-
JAMAICA	1984	4.1	3.1	-	-	-	0.4	1.2	3.5	8.2	16.7	31.1	33.8
MARTINIQUE	1985	5.9	3.3	-	-	-	-	-	-	19.0	21.7	30.3	12.5
MEXICO	1986	3.5	3.4	0.1	0.0	-	0.2	0.5	1.9	6.2	18.6	38.0	72.8
NETHERLANDS ANTILLES (CURACAO)	1981	3.7	1.9	-	-	-	-	-	-	-	-	33.3	100.0
PANAMA	1987	3.5	3.1	-	-	-	0.4	-	2.6	5.3	26.3	26.8	48.2
PARAGUAY (AREA OF INFORMATION)	1986	1.3	1.3	-	-	-	-	-	-	2.9	5.9	13.2	42.3
PERU	1983	1.4	1.3	0.3	-	-	0.3	0.1	1.1	2.1	6.9	11.3	35.7
PUERTO RICO	1987	7.9	3.8	-	-	-	-	-	2.2	5.4	21.4	44.0	98.8
SURINAME	1985	3.7	3.1	-	-	-	-	-	-	6.7	11.1	80.0	25.0
TRINIDAD AND TOBAGO	1986	4.1	3.1	-	-	-	-	1.0	1.5	11.4	11.9	34.2	49.2
UNITED STATES	1987	34.2	12.9	0.1	0.0	0.0	0.0	0.5	5.7	34.4	95.2	153.8	143.4
URUGUAY	1987	7.0	2.5	-	-	-	-	-	0.6	5.7	15.0	35.2	44.5
VENEZUELA	1987	4.4	4.4	-	0.1	0.1	0.1	0.5	2.3	8.8	28.0	52.8	73.7

TABLE III-9a(10).

Number of deaths from malignant neoplasm of the female breast (174), by age and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Female													
ARGENTINA	1986	3712	6	7	-	1	63	299	605	952	978	786	15
BAHAMAS	1987	13	-	-	1	-	-	2	3	3	2	2	-
BARBADOS	1988	46	-	-	-	-	2	1	5	14	11	13	-
BELIZE	1986	4	-	-	-	-	-	-	1	-	2	1	-
BRAZIL (AREA OF INFORMATION)	1986	4706	1	-	-	7	197	692	1083	1183	899	630	14
CANADA	1988	4480	-	-	-	-	69	324	581	1083	1143	1279	1
CHILE	1987	742	-	-	-	-	11	80	152	175	164	160	-
COLOMBIA	1984	734	-	-	-	1	36	121	193	176	110	83	14
COSTA RICA	1988	128	-	-	-	-	4	20	32	30	22	20	-
CUBA	1988	824	-	-	-	-	24	78	162	168	177	215	-
DOMINICA	1985	4	-	-	-	-	-	-	2	-	1	1	-
DOMINICAN REPUBLIC	1985	82	-	-	-	1	4	8	29	20	11	9	-
ECUADOR	1987	162	-	-	-	1	6	20	51	30	26	28	-
EL SALVADOR	1984	12	-	-	-	-	3	1	2	3	2	1	-
FRENCH GUIANA	1984	1	-	-	-	-	-	-	-	-	1	-	-
GUADELOUPE	1981	10	-	-	-	-	-	1	3	3	1	2	-
GUATEMALA	1984	48	-	-	-	-	4	4	12	12	12	4	-
GUYANA	1984	21	-	-	-	-	-	4	4	6	5	1	1
HONDURAS	1981	6	-	-	-	-	-	-	2	3	-	1	-
JAMAICA	1984	198	-	-	-	-	8	24	53	37	32	43	1
MARTINIQUE	1985	37	-	-	-	-	-	4	5	13	9	6	-
MEXICO	1986	1768	1	-	1	5	90	289	430	371	286	288	7
NETHERLANDS ANTILLES (CURACAO)	1981	13	-	-	-	-	-	1	7	1	1	3	-
PANAMA	1987	60	-	-	-	-	3	11	18	7	14	9	-
PARAGUAY (AREA OF INFORMATION)	1986	65	-	-	-	-	4	6	18	16	14	5	2
PERU	1983	267	-	-	1	2	16	37	63	56	42	46	4
PUERTO RICO	1987	261	-	-	-	-	11	40	48	64	47	51	-
SURINAME	1985	7	-	-	-	-	1	1	1	1	3	-	-
TRINIDAD AND TOBAGO	1986	91	-	-	-	-	1	13	12	26	21	18	-
UNITED STATES	1987	40899	-	-	-	16	672	3052	5437	9407	10664	11648	3
URUGUAY	1987	521	-	-	-	-	6	34	90	133	122	136	-
VENEZUELA	1987	554	-	-	1	2	24	92	144	140	101	50	-

TABLE III-9b(10).

Crude, age-adjusted, and age-specific death rates (per 100,000 women), from malignant neoplasm of the female breast (174), by age and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Female													
ARGENTINA	1986	24.0	12.4	1.8	0.5	-	0.0	2.9	16.4	39.1	70.0	102.3	145.5
BAHAMAS	1987	10.3	8.4	-	-	3.8	-	-	14.2	29.7	41.3	41.3	70.4
BARBADOS	1988	34.0	...	-	-	-	-	8.9	7.0	48.0	137.3	119.6	183.1
BELIZE	1986	4.8	3.2	-	-	-	-	-	-	15.3	-	61.2	57.5
BRAZIL (AREA OF INFORMATION)	1986	6.8	6.0	0.0	-	-	0.0	1.8	9.5	21.0	32.4	42.3	62.4
CANADA	1988	34.0	14.8	-	-	-	-	3.0	17.4	44.8	88.5	124.2	196.9
CHILE	1987	11.7	7.9	-	-	-	-	1.1	10.1	27.7	42.4	82.7	105.8
COLOMBIA	1984	5.2	5.0	-	-	-	0.0	1.6	8.7	20.2	25.1	25.9	48.7
COSTA RICA	1988	9.0	8.7	-	-	-	-	1.7	14.1	33.4	44.6	55.4	100.5
CUBA	1988	16.5	9.9	-	-	-	-	3.4	12.3	34.1	47.7	70.5	150.7
DOMINICA	1985	10.6	8.3	-	-	-	-	-	-	80.0	-	58.8	84.0
DOMINICAN REPUBLIC	1985	2.8	2.9	-	-	-	0.1	0.8	2.8	14.5	16.1	17.5	25.8
ECUADOR	1987	3.3	3.4	-	-	-	0.1	0.8	4.3	16.2	14.3	20.1	42.7
EL SALVADOR	1984	0.5	0.5	-	-	-	-	0.9	0.5	1.4	3.0	3.3	3.2
FRENCH GUIANA	1984	2.5	1.9	-	-	-	-	-	-	-	-	84.7	-
GUADELOUPE	1981	6.0	4.1	-	-	-	-	-	8.0	20.3	27.5	11.1	33.9
GUATEMALA	1984	1.3	1.4	-	-	-	-	0.8	1.2	5.0	7.3	15.1	11.1
GUYANA	1984	4.5	4.3	-	-	-	-	-	9.3	13.2	27.8	38.2	17.2
HONDURAS	1981	0.3	0.4	-	-	-	-	-	-	1.8	4.1	-	6.9
JAMAICA	1984	17.0	14.8	-	-	-	-	4.7	28.0	72.6	56.1	66.3	145.3
MARTINIQUE	1985	22.0	11.9	-	-	-	-	-	21.3	31.6	94.2	90.9	75.0
MEXICO	1986	4.4	4.6	0.1	-	0.0	0.1	1.6	7.9	16.7	21.8	28.4	49.9
NETHERLANDS ANTILLES (CURACAO)	1981	15.9	13.2	-	-	-	-	-	11.1	116.7	20.0	33.3	150.0
PANAMA	1987	5.4	5.0	-	-	-	-	1.8	9.7	21.0	13.2	41.9	54.2
PARAGUAY (AREA OF INFORMATION)	1986	5.7	5.8	-	-	-	-	2.3	5.8	26.2	31.6	46.2	35.2
PERU	1983	2.9	2.8	-	-	0.0	0.1	1.2	4.1	9.6	12.9	16.4	42.1
PUERTO RICO	1987	14.3	8.9	-	-	-	-	4.0	17.4	28.6	48.9	48.1	85.4
SURINAME	1985	3.7	3.5	-	-	-	-	3.8	5.9	6.7	11.1	60.0	-
TRINIDAD AND TOBAGO	1986	15.1	11.6	-	-	-	-	1.0	19.6	27.5	77.6	89.7	147.5
UNITED STATES	1987	32.8	13.6	-	-	-	0.1	3.1	17.5	45.4	80.7	108.3	148.0
URUGUAY	1987	33.5	14.7	-	-	-	-	2.9	19.1	51.5	82.9	107.3	183.5
VENEZUELA	1987	6.1	6.2	-	-	0.0	0.1	1.7	9.9	24.3	34.6	45.2	43.9

TABLE III-9a(11).

Number of deaths from malignant neoplasm of the cervix uteri (180), by age and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Female													
ARGENTINA	1986	827	-	-	-	9	100	163	186	172	120	72	5
BAHAMAS	1987	12	-	-	-	1	1	2	-	2	1	5	-
BARBADOS	1988	26	-	-	-	-	1	2	5	4	5	9	-
BELIZE	1986	3	-	-	-	-	-	-	-	2	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	2535	2	-	-	14	194	483	646	551	383	251	11
CANADA	1988	418	-	-	-	2	35	66	63	79	94	79	-
CHILE	1987	766	-	-	-	5	48	133	173	150	135	122	-
COLOMBIA	1984	975	-	-	-	6	74	173	222	219	172	98	11
COSTA RICA	1988	101	-	-	-	1	10	20	15	18	20	17	-
CUBA	1988	380	-	-	-	5	26	61	78	70	65	75	-
DOMINICA	1985	6	-	-	-	-	2	-	-	3	-	1	-
DOMINICAN REPUBLIC	1985	117	-	-	1	-	7	21	26	17	25	20	-
ECUADOR	1987	207	-	-	-	1	6	32	49	44	38	34	3
EL SALVADOR	1984	74	-	-	-	-	4	16	21	10	11	11	1
FRENCH GUIANA	1984	4	-	-	-	-	-	2	1	1	-	-	-
GUADELOUPE	1981	14	-	-	-	-	1	-	2	6	3	2	-
GUATEMALA	1984	132	-	-	-	-	24	20	44	16	12	16	-
GUYANA	1984	25	-	-	-	-	2	1	11	5	4	2	-
HONDURAS	1981	5	-	-	-	-	1	1	-	1	1	1	-
JAMAICA	1984	149	-	-	-	1	4	19	30	40	26	28	1
MARTINIQUE	1985	8	-	-	-	-	-	1	4	-	1	2	-
MEXICO	1986	3621	3	2	1	21	198	578	831	758	568	640	21
NETHERLANDS ANTILLES (CURACAO)	1981	9	-	-	-	-	-	1	2	-	3	3	-
PANAMA	1987	74	-	-	-	-	9	12	10	19	12	12	-
PARAGUAY (AREA OF INFORMATION)	1986	75	-	-	-	-	5	14	19	17	11	6	3
PERU	1983	382	-	-	-	2	16	64	98	74	64	56	8
PUERTO RICO	1987	43	-	-	-	-	2	6	10	3	8	14	-
SURINAME	1985	23	-	-	-	-	-	3	8	5	2	4	1
TRINIDAD AND TOBAGO	1986	56	-	-	-	-	2	6	10	12	18	8	-
UNITED STATES	1987	4425	-	-	-	16	332	614	758	842	925	936	2
URUGUAY	1987	78	-	-	-	-	12	11	18	14	14	9	-
VENEZUELA	1987	565	-	-	-	4	35	123	140	119	73	71	-

TABLE III-9b(11).

Crude, age-adjusted, and age-specific death rates (per 100,000 women), from malignant neoplasm of the cervix uteri (180), by age and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Female													
ARGENTINA	1986	5.3	3.6	-	-	-	0.4	4.6	8.9	12.0	12.6	12.5	13.3
BAHAMAS	1987	9.5	6.7	-	-	-	4.0	4.8	14.2	-	27.5	20.7	176.1
BARBADOS	1988	19.2	...	-	-	-	-	4.5	14.1	49.0	39.2	54.3	126.8
BELIZE	1986	3.6	2.6	-	-	-	-	-	-	-	41.6	30.6	-
BRAZIL (AREA OF INFORMATION)	1986	3.7	3.3	0.1	-	-	0.1	1.8	6.6	12.5	15.1	18.0	24.9
CANADA	1988	3.2	1.6	-	-	-	0.1	1.5	3.6	4.9	6.5	10.2	12.2
CHILE	1987	12.1	8.6	-	-	-	0.4	4.6	16.9	31.5	36.3	51.6	80.6
COLOMBIA	1984	7.0	6.6	-	-	-	0.2	3.3	12.4	23.3	31.3	40.4	57.5
COSTA RICA	1988	7.1	6.7	-	-	-	0.3	4.2	14.1	15.6	26.7	50.4	85.4
CUBA	1988	7.6	5.0	-	-	-	0.5	3.7	9.6	16.4	19.9	25.9	52.6
DOMINICA	1985	15.9	12.8	-	-	-	-	38.8	-	-	139.5	-	84.0
DOMINICAN REPUBLIC	1985	3.7	4.2	-	-	0.1	-	1.4	7.4	13.0	13.7	39.9	57.3
ECUADOR	1987	4.2	4.3	-	-	-	0.1	0.8	6.9	15.6	21.0	29.4	51.8
EL SALVADOR	1984	3.1	3.4	-	-	-	-	1.2	8.0	15.1	9.9	18.4	34.8
FRENCH GUIANA	1984	10.0	10.0	-	-	-	-	-	49.0	35.0	49.8	-	-
GUADELOUPE	1981	8.4	5.3	-	-	-	-	4.4	-	13.5	55.0	33.3	33.3
GUATEMALA	1984	3.5	4.0	-	-	-	-	4.8	6.2	18.5	9.8	15.1	44.4
GUYANA	1984	5.4	5.4	-	-	-	-	2.5	2.3	36.2	23.1	29.0	34.5
HONDURAS	1981	0.3	0.3	-	-	-	-	0.4	0.6	-	1.4	2.5	6.9
JAMAICA	1984	12.8	10.9	-	-	-	0.4	2.4	22.2	41.2	60.7	53.8	84.6
MARTINIQUE	1985	4.8	2.9	-	-	-	-	-	5.3	25.3	-	10.1	25.0
MEXICO	1986	8.9	9.2	0.2	0.0	0.0	0.2	3.4	15.7	32.3	44.5	56.3	111.0
NETHERLANDS ANTILLES (CURACAO)	1981	11.0	7.7	-	-	-	-	-	11.1	33.3	-	100.0	150.0
PANAMA	1987	6.6	6.2	-	-	-	-	5.4	10.6	13.1	35.7	35.9	72.3
PARAGUAY (AREA OF INFORMATION)	1986	6.6	6.8	-	-	-	-	2.9	13.6	27.7	33.6	36.3	42.3
PERU	1983	4.1	4.0	-	-	-	0.1	1.2	7.1	14.9	17.1	25.0	51.3
PUERTO RICO	1987	2.4	1.4	-	-	-	-	0.7	2.6	6.0	2.3	8.2	23.5
SURINAME	1985	12.1	10.5	-	-	-	-	-	17.6	55.3	55.6	40.0	100.0
TRINIDAD AND TOBAGO	1986	9.3	7.1	-	-	-	-	2.0	9.1	22.9	35.8	78.9	65.6
UNITED STATES	1987	3.5	1.7	-	-	-	0.1	1.5	3.5	6.3	7.2	9.4	11.9
URUGUAY	1987	5.0	3.0	-	-	-	-	5.8	6.2	10.3	8.7	12.3	12.1
VENEZUELA	1987	6.2	6.4	-	-	-	0.2	2.5	13.3	23.7	29.4	32.6	62.3

TABLE III-9a(12).

Number of deaths from malignant neoplasm of placenta and uterus, excluding cervix (179, 181, 182), by age and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Female													
ARGENTINA	1986	1238	-	-	-	-	45	117	185	292	317	275	7
BAHAMAS	1987	5	-	-	-	-	-	2	-	-	1	2	-
BARBADOS	1988	12	-	-	-	-	1	-	-	-	5	6	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	2203	-	-	1	21	101	243	438	507	489	392	11
CANADA	1988	526	-	-	-	-	2	8	25	92	173	226	-
CHILE	1987	131	-	-	-	1	-	1	12	36	41	40	-
COLOMBIA	1984	520	-	-	-	5	25	56	106	118	99	101	8
COSTA RICA	1988	38	-	-	-	1	1	3	1	10	9	13	-
CUBA	1988	361	-	-	-	1	3	22	57	81	99	98	-
DOMINICA	1985	1	-	-	-	-	-	-	-	-	-	1	-
DOMINICAN REPUBLIC	1985	141	-	-	-	2	8	22	32	23	30	24	-
ECUADOR	1987	414	-	-	-	7	21	60	78	73	82	90	3
EL SALVADOR	1984	2	-	-	-	-	-	-	1	1	-	-	-
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	17	-	-	-	-	1	1	2	2	2	9	-
GUATEMALA	1984	116	-	-	-	4	-	24	12	32	28	16	-
GUYANA	1984	10	-	-	-	-	1	1	2	4	2	-	-
HONDURAS	1981	27	-	-	-	-	5	6	4	5	6	1	-
JAMAICA	1984	48	-	-	-	2	-	1	4	8	12	21	-
MARTINIQUE	1985	21	-	-	-	-	1	2	-	5	6	7	-
MEXICO	1986	754	-	-	1	15	25	99	144	146	131	189	4
NETHERLANDS ANTILLES (CURACAO)	1981	3	-	-	-	-	-	-	-	-	3	-	-
PANAMA	1987	22	-	-	-	2	2	2	3	1	6	6	-
PARAGUAY (AREA OF INFORMATION)	1986	99	-	-	-	1	4	16	26	18	19	12	3
PERU	1987	315	-	-	-	4	19	51	62	60	51	55	13
PUERTO RICO	1987	66	-	-	-	-	1	2	12	7	22	22	-
SURINAME	1985	2	-	-	-	-	-	2	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	31	-	-	-	-	-	-	-	-	-	-	-
UNITED STATES	1987	5911	-	-	-	3	42	98	302	1008	2050	2410	-
URUGUAY	1987	139	-	-	-	-	4	8	13	35	40	39	-
VENEZUELA	1987	447	-	-	-	3	25	62	95	94	87	79	2

TABLE III-9b(12).

Crude, age-adjusted, and age-specific death rates (per 100,000 women), from malignant neoplasm of placenta and uterus, excluding cervix (179, 181, 182), by age and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Female													
ARGENTINA	1986	8.0	4.2	-	-	-	-	2.0	6.4	12.0	21.5	33.1	50.9
BAHAMAS	1987	4.0	2.8	-	-	-	-	-	14.2	-	-	20.7	70.4
BARBADOS	1988	8.9	...	-	-	-	-	4.5	-	-	-	54.3	84.5
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	3.2	2.7	-	-	0.0	0.1	0.9	3.3	8.5	13.9	23.0	38.6
CANADA	1988	4.0	1.4	-	-	-	-	0.1	0.4	1.9	7.5	18.8	34.8
CHILE	1987	2.1	1.3	-	-	-	0.1	-	0.1	2.2	8.7	15.7	26.4
COLOMBIA	1984	3.7	3.5	-	-	-	0.2	1.1	4.1	11.1	16.8	23.3	59.3
COSTA RICA	1988	2.7	2.4	-	-	-	0.3	0.4	2.1	1.0	14.9	22.7	65.3
CUBA	1988	7.2	4.1	-	-	-	0.1	0.4	3.5	12.0	23.0	39.5	68.7
DOMINICA	1985	2.7	1.0	-	-	-	-	-	-	-	-	-	84.0
DOMINICAN REPUBLIC	1985	4.4	5.1	-	-	-	0.3	1.7	7.8	16.0	18.5	47.8	68.8
ECUADOR	1987	8.4	8.4	-	-	-	0.7	3.0	13.0	24.8	34.8	63.5	137.2
EL SALVADOR	1984	0.1	0.1	-	-	-	-	-	-	0.7	1.0	-	-
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	10.1	5.4	-	-	-	-	4.4	6.0	13.5	18.3	22.2	150.0
GUATEMALA	1984	3.0	3.5	-	-	-	0.5	-	7.4	5.0	19.6	35.1	44.4
GUYANA	1984	2.1	2.1	-	-	-	-	1.3	2.3	6.6	18.5	14.5	-
HONDURAS	1981	1.4	1.7	-	-	-	-	2.2	3.8	3.5	6.8	15.3	6.9
JAMAICA	1984	4.1	2.6	-	-	-	0.7	-	1.2	5.5	12.1	24.8	70.9
MARTINIQUE	1985	12.5	5.8	-	-	-	-	4.0	10.6	-	36.2	60.6	87.5
MEXICO	1986	1.9	1.9	-	-	0.0	0.2	0.4	2.7	5.6	8.6	13.0	32.8
NETHERLANDS ANTILLES (CURACAO)	1981	3.7	2.3	-	-	-	-	-	-	-	-	100.0	-
PANAMA	1987	2.0	1.7	-	-	-	0.8	1.2	1.8	3.9	1.9	18.0	36.1
PARAGUAY (AREA OF INFORMATION)	1986	8.7	8.9	-	-	-	0.4	2.3	15.5	37.9	35.6	62.7	84.5
PERU	1985	3.4	3.2	-	-	-	0.2	1.4	5.7	9.4	13.8	19.9	50.4
PUERTO RICO	1987	3.6	1.9	-	-	-	-	0.4	0.9	7.1	5.4	22.5	36.9
SURINAME	1985	1.1	1.2	-	-	-	-	-	11.8	-	-	-	-
TRINIDAD AND TOBAGO	1986	5.1	3.4	-	-	-	-	-	-	-	23.9	64.1	65.6
UNITED STATES	1987	4.7	1.5	-	-	-	0.0	0.2	0.6	2.5	8.6	20.8	30.8
URUGUAY	1987	8.9	3.7	-	-	-	-	1.9	4.5	7.4	21.8	35.2	52.6
VENEZUELA	1987	4.9	5.0	-	-	-	0.2	1.8	6.7	16.1	23.3	38.9	69.4

TABEL III-9a(13).

Number of deaths from malignant neoplasm of prostate (185), by age and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Male													
ARGENTINA	1986	2035	-	-	-	-	4	3	36	254	668	1058	12
BAHAMAS	1987	23	-	-	-	-	-	-	1	3	11	8	-
BARBADOS	1988	56	-	-	-	-	-	-	1	7	17	31	-
BELIZE	1986	1	-	-	-	-	-	-	-	-	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	3080	1	1	-	3	2	19	72	437	1050	1494	11
CANADA	1988	3037	-	1	-	-	-	4	26	282	889	1835	-
CHILE	1987	590	-	-	-	-	-	2	9	66	195	318	-
COLOMBIA	1984	701	-	-	-	-	-	2	20	87	233	347	12
COSTA RICA	1988	122	-	-	-	-	-	-	2	12	26	82	-
CUBA	1988	1241	-	1	-	-	-	2	18	90	294	836	-
DOMINICA	1985	8	-	-	-	-	-	-	-	-	3	5	-
DOMINICAN REPUBLIC	1985	164	-	-	1	-	-	-	6	13	52	92	-
ECUADOR	1987	216	-	-	-	-	1	1	3	19	68	124	-
EL SALVADOR	1984	25	-	-	-	-	-	-	-	4	10	11	-
GUADELOUPE	1981	18	-	-	-	-	-	-	-	1	10	7	-
GUATEMALA	1984	48	-	-	-	-	-	-	-	8	12	28	-
GUYANA	1984	19	-	-	-	-	-	-	-	2	6	11	-
HONDURAS	1981	3	-	-	-	-	-	-	-	-	2	1	-
JAMAICA	1984	200	-	-	-	-	-	2	3	17	70	108	-
MARTINIQUE	1985	64	-	-	-	-	-	1	1	3	24	35	-
MEXICO	1986	1795	1	-	1	-	3	1	26	207	526	1025	5
NETHERLANDS ANTILLES (CURACAO)	1981	8	-	-	-	-	-	-	-	1	4	3	-
PANAMA	1987	92	-	1	-	1	-	-	-	9	33	48	-
PARAGUAY (AREA OF INFORMATION)	1986	1	-	-	-	1	-	-	-	-	-	-	-
PERU	1983	340	-	-	-	3	2	1	5	33	84	201	11
PUERTO RICO	1987	340	-	-	-	-	-	1	3	29	85	222	-
ST. VINCENT & THE GRENADINES	1986	5	-	-	-	-	-	-	-	-	2	3	-
SURINAME	1985	16	-	-	-	-	-	-	1	2	8	5	-
TRINIDAD AND TOBAGO	1986	117	-	-	-	-	-	1	2	14	48	52	-
UNITED STATES	1987	27864	-	1	-	3	6	21	284	2441	8609	16498	1
URUGUAY	1987	411	-	-	-	1	-	-	7	45	118	239	1
VENEZUELA	1987	555	-	-	-	-	-	3	10	82	180	277	3

TABLE III-9b(13).

Crude, age-adjusted, and age-specific death rates (per 100,000 men), from malignant neoplasm of prostate (185), by age and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Male													
ARGENTINA	1986	13.3	6.6	-	-	-	-	0.2	0.2	2.4	20.4	87.4	289.9
BAHAMAS	1987	18.7	15.4	-	-	-	-	-	-	10.6	47.5	282.8	506.3
BARBADOS	1988	46.0	....	-	-	-	-	-	-	12.2	98.6	283.3	775.0
BELIZE	1986	1.2	0.7	-	-	-	-	-	-	-	-	-	61.0
BRAZIL (AREA OF INFORMATION)	1986	4.5	4.0	0.0	0.0	-	0.0	0.0	0.3	1.4	12.4	53.4	174.0
CANADA	1988	23.5	9.4	-	0.1	-	-	-	0.2	2.0	24.6	118.7	457.4
CHILE	1987	9.5	7.2	-	-	-	-	-	0.3	1.7	18.2	96.4	339.4
COLOMBIA	1984	5.0	5.7	-	-	-	-	-	0.1	2.1	13.7	65.2	287.3
COSTA RICA	1988	8.4	9.4	-	-	-	-	-	-	2.1	18.4	73.7	573.4
CUBA	1988	24.0	10.7	-	0.3	-	-	-	0.3	3.7	25.4	114.0	558.5
DOMINICA	1985	20.9	13.2	-	-	-	-	-	-	-	-	214.3	704.2
DOMINICAN REPUBLIC	1985	5.1	5.8	-	-	0.1	-	-	-	3.1	10.0	80.2	288.4
ECUADOR	1987	4.3	4.6	-	-	-	-	0.1	0.2	1.0	9.4	57.9	234.4
EL SALVADOR	1984	1.1	1.3	-	-	-	-	-	-	-	4.3	21.0	49.8
GUADELOUPE	1981	11.3	5.8	-	-	-	-	-	-	-	9.2	142.9	175.0
GUATEMALA	1984	1.2	1.6	-	-	-	-	-	-	-	4.9	15.4	84.6
GUYANA	1984	4.0	4.1	-	-	-	-	-	-	-	9.3	46.9	224.5
HONDURAS	1981	0.2	0.2	-	-	-	-	-	-	-	-	5.4	8.1
JAMAICA	1984	17.6	11.8	-	-	-	-	-	2.7	4.7	29.8	169.5	497.7
MARTINIQUE	1985	40.1	18.7	-	-	-	-	-	6.0	7.2	25.4	266.7	700.0
MEXICO	1986	4.4	4.9	0.1	-	0.0	-	0.1	0.0	1.1	13.5	62.0	231.8
NETHERLANDS ANTILLES (CURACAO)	1981	9.8	6.0	-	-	-	-	-	-	-	25.0	133.3	150.0
PANAMA	1987	7.9	6.7	-	0.8	-	0.4	-	-	-	16.3	93.0	307.7
PARAGUAY (AREA OF INFORMATION)	1986	0.1	0.1	-	-	-	0.4	-	-	-	-	-	-
PERU	1983	3.6	4.2	-	-	-	0.2	0.1	0.1	0.8	8.0	37.5	243.3
PUERTO RICO	1987	19.6	8.8	-	-	-	-	-	0.5	2.1	25.4	98.3	440.5
ST. VINCENT & THE GRENADINES	1986	9.8	7.3	-	-	-	-	-	-	-	-	125.8	378.7
SURINAME	1985	8.6	8.1	-	-	-	-	-	-	7.1	20.0	160.0	250.0
TRINIDAD AND TOBAGO	1986	19.5	14.5	-	-	-	-	-	1.5	4.8	45.9	225.4	585.2
UNITED STATES	1987	23.5	8.3	-	0.0	-	0.0	0.0	0.1	2.5	23.5	110.0	384.1
URUGUAY	1987	27.3	10.6	-	-	-	0.4	-	-	4.2	30.8	126.3	500.8
VENEZUELA	1987	8.0	7.0	-	-	-	-	-	0.3	1.7	20.8	90.8	324.0

TABLE III-9a(14).

Number of deaths from leukemia and other malignant neoplasms of the lymphatic and hematopoietic tissue (200–208), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	2824	15	73	181	142	130	201	277	510	648	635	12
BAHAMAS	1987	29	-	-	1	4	4	1	2	6	7	4	-
BARBADOS	1988	34	-	-	-	1	-	6	1	6	9	11	-
BELIZE	1986	5	1	1	-	-	-	1	-	-	2	-	-
BRAZIL (AREA OF INFORMATION)	1986	5952	66	354	685	524	518	523	694	981	934	657	16
CANADA	1988	4466	2	27	57	95	130	213	339	714	1272	1617	-
CHILE	1987	896	6	30	67	79	65	71	91	152	193	142	-
COLOMBIA	1984	1383	8	113	202	210	130	92	148	173	186	106	15
COSTA RICA	1988	230	3	11	15	33	25	16	21	33	37	35	1
CUBA	1988	1056	5	21	42	79	53	79	119	177	199	282	-
DOMINICA	1985	2	-	-	-	1	1	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	151	-	9	22	15	15	14	19	29	12	14	-
ECUADOR	1987	486	10	32	87	50	32	34	55	68	57	61	-
EL SALVADOR	1984	122	1	9	18	23	9	11	12	15	16	8	-
GUADELOUPE	1981	13	-	-	-	2	-	3	1	2	3	2	-
GUATEMALA	1984	172	12	12	28	36	12	18	16	12	8	16	4
GUYANA	1984	18	-	2	3	2	2	-	4	3	1	1	-
HONDURAS	1981	59	1	5	9	15	5	3	4	3	8	6	-
JAMAICA	1984	133	1	2	12	13	15	13	16	21	27	12	1
MARTINIQUE	1985	29	-	-	-	2	2	-	2	5	6	12	-
MEXICO	1986	3639	65	231	631	516	282	274	326	475	450	376	13
NETHERLANDS ANTILLES (CURACAO)	1981	12	-	-	-	-	2	-	1	2	5	2	-
PANAMA	1987	132	2	10	18	8	11	9	8	22	27	17	-
PARAGUAY (AREA OF INFORMATION)	1986	114	3	11	15	17	9	4	7	13	18	16	1
PERU	1983	476	6	24	57	52	46	32	49	49	79	70	12
PUERTO RICO	1987	347	1	3	11	17	11	21	31	53	92	107	-
ST. VINCENT & THE GRENADINES	1986	5	-	-	1	1	1	-	-	2	-	-	-
SURINAME	1985	17	-	1	2	4	2	2	1	2	2	1	-
TRINIDAD AND TOBAGO	1986	89	-	-	8	13	5	9	8	19	16	11	-
UNITED STATES	1987	43599	39	210	553	857	1348	1864	3034	6974	12200	16514	6
URUGUAY	1987	415	1	7	19	13	19	21	33	74	106	118	4
VENEZUELA	1987	1006	9	62	139	132	109	78	104	140	123	110	-
Male													
ARGENTINA	1986	1596	9	43	105	90	86	119	166	302	363	305	8
BAHAMAS	1987	18	-	-	1	3	3	-	1	3	5	2	-
BARBADOS	1988	21	-	-	-	-	-	2	-	5	7	7	-
BELIZE	1986	2	-	1	-	-	-	-	-	-	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	3374	33	189	409	308	301	298	417	563	513	334	9
CANADA	1988	2454	1	13	43	55	82	126	200	425	722	787	-
CHILE	1987	498	2	20	37	50	41	42	48	85	91	82	-
COLOMBIA	1984	765	3	61	114	125	67	50	81	97	100	56	11
COSTA RICA	1988	125	3	7	9	20	15	7	11	14	23	15	1
CUBA	1988	618	2	12	25	43	30	50	80	88	126	162	-
DOMINICA	1985	1	-	-	-	-	1	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	88	-	5	15	8	10	8	9	18	6	9	-
ECUADOR	1987	259	4	14	49	26	20	17	32	36	26	35	-
EL SALVADOR	1984	66	1	3	9	11	6	6	6	10	11	3	-
GUADELOUPE	1981	10	-	-	-	1	-	2	1	2	3	1	-
GUATEMALA	1984	76	4	4	12	24	4	4	8	4	4	4	4
GUYANA	1984	13	-	-	3	2	2	-	4	1	-	1	-
HONDURAS	1981	33	1	2	6	9	2	2	4	1	6	-	-
JAMAICA	1984	78	1	1	7	8	9	7	10	13	13	8	1
MARTINIQUE	1985	8	-	-	-	1	-	-	1	2	2	2	-
MEXICO	1986	2079	35	141	374	310	176	165	180	255	238	198	7
NETHERLANDS ANTILLES (CURACAO)	1981	8	-	-	-	-	2	-	1	1	3	1	-
PANAMA	1987	70	-	8	5	6	7	4	5	12	19	6	-
PARAGUAY (AREA OF INFORMATION)	1986	56	2	3	6	11	5	-	3	8	12	6	-
PERU	1983	257	3	12	36	29	23	14	25	25	47	38	5
PUERTO RICO	1987	186	-	2	5	7	8	10	17	31	54	52	-
ST. VINCENT & THE GRENADINES	1986	4	-	-	1	1	1	-	-	1	-	-	-
SURINAME	1985	7	-	1	1	2	1	-	1	1	-	-	-
TRINIDAD AND TOBAGO	1986	47	-	-	5	7	2	7	5	9	6	6	-
UNITED STATES	1987	22939	20	110	348	531	836	1174	1787	4014	6721	7393	5
URUGUAY	1987	217	1	6	11	9	9	10	15	40	60	53	3
VENEZUELA	1987	560	6	37	75	79	61	40	69	75	65	53	-
Female													
ARGENTINA	1986	1213	6	29	73	51	43	81	111	208	284	327	2
BAHAMAS	1987	11	-	-	-	1	1	1	1	3	2	2	-
BARBADOS	1988	13	-	-	-	1	-	4	1	1	2	4	-
BELIZE	1986	3	1	-	-	-	-	1	-	-	1	-	-
BRAZIL (AREA OF INFORMATION)	1986	2573	33	165	276	216	217	224	277	415	421	323	6
CANADA	1988	2012	1	14	14	40	48	87	139	289	550	830	-
CHILE	1987	398	4	10	30	29	24	29	43	67	102	60	-
COLOMBIA	1984	618	5	52	88	85	63	42	67	76	86	50	4
COSTA RICA	1988	105	-	4	6	13	10	9	10	19	14	20	-
CUBA	1988	438	3	9	17	36	23	29	39	89	73	120	-
DOMINICA	1985	1	-	-	-	1	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	63	2	4	7	7	5	6	10	11	6	5	-
ECUADOR	1987	227	6	18	38	24	12	17	23	32	31	26	-
EL SALVADOR	1984	56	-	6	9	12	3	5	6	5	5	5	-
GUADELOUPE	1981	3	-	-	-	1	-	1	-	-	-	1	-
GUATEMALA	1984	96	8	8	16	12	8	12	8	8	4	12	-
GUYANA	1984	5	-	2	-	-	-	-	-	2	1	-	-
HONDURAS	1981	26	-	3	3	6	3	1	-	2	2	6	-
JAMAICA	1984	55	-	1	5	5	6	6	6	8	14	4	-
MARTINIQUE	1985	21	-	-	-	1	2	-	1	3	4	10	-
MEXICO	1986	1560	30	90	257	206	106	109	146	220	212	178	6
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	-	-	-	-	1	2	1	-
PANAMA	1987	62	2	4	13	2	4	5	3	10	8	11	-
PARAGUAY (AREA OF INFORMATION)	1986	58	1	8	9	6	4	4	4	5	6	10	1
PERU	1983	219	3	12	21	23	23	18	24	24	32	32	7
PUERTO RICO	1987	161	1	1	6	10	3	11	14	22	38	55	-
ST. VINCENT & THE GRENADINES	1986	1	-	-	-	-	-	-	-	1	-	-	-
SURINAME	1985	10	-	-	1	2	1	2	-	1	2	1	-
TRINIDAD AND TOBAGO	1986	42	-	-	3	6	3	2	3	10	10	5	-
UNITED STATES	1987	20660	19	100	205	326	512	690	1247	2960	5479	9121	1
URUGUAY	1987	198	-	1	8	4	10	11	18	34	46	65	1
VENEZUELA	1987	446	3	25	64	53	48	38	35	65	58	57	-

TABLE III-9b(14).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from leukemia and other malignant neoplasms of the lymphatic and hematopoietic tissue (200–208), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	9.2	6.0	2.2	2.6	3.0	3.0	2.9	5.5	9.1	19.6	37.7	70.2
BAHAMAS	1987	11.6	9.4	-	-	1.9	7.8	9.5	3.7	10.2	44.2	80.2	90.5
BARBADOS	1988	13.2	...	-	-	-	1.9	-	22.7	5.4	34.7	59.2	99.1
BELIZE	1986	3.0	2.6	16.3	6.3	-	-	-	5.7	-	-	31.5	-
BRAZIL (AREA OF INFORMATION)	1986	4.3	4.0	1.2	2.3	2.1	1.9	2.4	3.6	6.8	13.7	22.8	35.2
CANADA	1988	17.1	7.9	0.5	1.7	1.5	2.2	2.8	5.7	13.0	30.1	75.2	153.9
CHILE	1987	7.1	5.8	2.3	2.8	2.7	3.1	3.1	4.6	8.6	19.6	41.6	58.0
COLOMBIA	1984	4.9	4.8	1.0	4.0	3.0	3.4	2.9	3.2	7.8	12.9	23.8	36.4
COSTA RICA	1988	8.0	7.7	3.7	3.4	2.3	5.3	5.2	5.6	10.9	24.9	49.3	102.3
CUBA	1988	10.4	7.0	2.7	3.3	2.3	3.5	3.7	6.1	12.4	25.1	39.1	96.4
DOMINICA	1985	2.6	2.3	-	-	-	5.4	9.1	-	-	-	-	-
DOMINICAN REPUBLIC	1985	2.4	2.6	1.8	1.2	1.3	1.1	1.6	2.5	4.8	11.4	9.4	21.0
ECUADOR	1987	4.9	5.1	4.9	2.6	3.4	2.5	2.2	3.7	8.8	16.6	23.1	51.5
EL SALVADOR	1984	2.6	2.7	0.7	1.4	1.4	2.4	1.4	2.7	4.4	7.7	14.9	14.9
GUADELOUPE	1981	4.0	2.8	-	-	-	2.8	-	9.2	3.6	9.2	16.8	20.0
GUATEMALA	1984	2.2	2.3	3.8	1.1	1.3	2.4	1.2	2.5	3.3	3.7	5.1	23.2
GUYANA	1984	1.9	2.0	-	2.0	1.3	1.0	1.3	-	6.8	6.9	9.8	9.3
HONDURAS	1981	1.5	1.7	0.6	0.9	0.8	2.1	1.1	0.9	1.8	2.1	10.4	22.5
JAMAICA	1984	5.8	5.3	1.9	0.8	2.2	2.3	4.5	8.1	11.7	17.1	30.1	23.4
MARTINIQUE	1985	8.8	4.3	-	-	-	2.7	4.0	-	6.8	19.5	31.7	92.3
MEXICO	1986	4.5	4.6	2.5	2.4	2.8	3.0	2.4	3.8	6.6	14.7	24.2	36.9
NETHERLANDS ANTILLES (CURACAO)	1981	7.3	5.4	-	-	-	-	9.1	-	8.3	22.2	83.3	50.0
PANAMA	1987	5.8	5.5	3.5	4.3	3.2	1.7	3.2	3.9	5.1	20.3	39.2	52.8
PARAGUAY (AREA OF INFORMATION)	1986	5.0	5.1	5.6	3.8	2.6	3.7	2.6	2.0	5.2	13.3	32.0	64.8
PERU	1983	2.5	2.5	0.9	1.1	1.2	1.4	1.7	1.8	3.7	5.8	16.4	36.5
PUERTO RICO	1987	9.8	5.9	1.6	1.0	1.6	2.5	2.1	4.9	9.9	21.6	49.9	97.2
ST. VINCENT & THE GRENADINES	1986	4.8	4.9	-	-	3.5	4.0	7.3	-	-	48.7	-	-
SURINAME	1985	4.5	4.3	-	2.5	2.2	4.4	4.0	6.3	3.4	10.5	20.0	16.7
TRINIDAD AND TOBAGO	1986	7.4	6.3	-	-	3.2	5.0	2.5	6.8	9.4	29.7	35.8	91.4
UNITED STATES	1987	17.9	7.7	1.0	1.5	1.6	2.2	3.1	5.4	13.0	31.7	69.1	135.7
URUGUAY	1987	13.6	7.2	1.9	3.1	3.5	2.6	4.6	6.0	9.6	24.1	51.2	96.8
VENEZUELA	1987	5.5	5.6	1.7	2.9	3.1	3.5	3.9	4.2	8.8	17.5	29.2	55.2
Male													
ARGENTINA	1986	10.5	7.2	2.6	3.0	3.4	3.7	3.8	6.4	11.0	24.3	47.5	83.6
BAHAMAS	1987	14.6	12.5	-	-	3.6	11.5	14.3	-	10.6	47.5	128.5	126.6
BARBADOS	1988	17.2	...	-	-	-	-	-	16.4	-	70.4	116.7	175.0
BELIZE	1986	2.4	2.3	-	12.4	-	-	-	-	-	-	32.6	-
BRAZIL (AREA OF INFORMATION)	1986	4.9	4.7	1.2	2.5	2.6	2.2	2.7	4.2	8.2	16.0	26.1	38.9
CANADA	1988	19.0	9.8	0.5	1.6	2.3	2.5	3.5	6.7	15.3	37.1	96.4	196.2
CHILE	1987	8.0	7.0	1.5	3.7	2.9	3.9	3.9	5.6	9.3	23.5	45.0	87.5
COLOMBIA	1984	5.4	5.5	0.7	4.2	3.4	4.0	2.9	3.5	8.5	15.2	28.0	46.4
COSTA RICA	1988	8.6	8.6	7.1	4.3	2.7	6.3	6.2	4.8	11.5	21.5	65.2	104.9
CUBA	1988	12.0	8.0	2.1	3.7	2.6	3.7	4.1	7.7	16.6	24.9	48.9	108.2
DOMINICA	1985	2.6	2.4	-	-	-	-	17.2	-	-	-	-	-
DOMINICAN REPUBLIC	1985	2.7	2.9	-	1.3	1.8	1.1	2.1	2.8	4.6	13.8	9.3	28.2
ECUADOR	1987	5.2	5.5	3.9	2.2	3.7	2.5	2.8	3.7	10.3	17.9	22.1	66.2
EL SALVADOR	1984	2.8	3.0	1.3	0.9	1.4	2.3	1.8	3.0	4.4	10.6	23.1	13.6
GUADELOUPE	1981	6.3	4.5	-	-	-	2.7	-	12.7	7.8	18.3	42.9	25.0
GUATEMALA	1984	1.9	1.9	2.5	0.7	1.1	3.2	0.8	1.2	3.3	2.5	5.1	12.1
GUYANA	1984	2.8	2.9	-	-	2.6	1.9	2.5	-	14.0	4.6	-	20.4
HONDURAS	1981	1.7	1.8	1.2	0.7	1.1	2.4	0.9	1.3	3.5	1.4	16.1	-
JAMAICA	1984	6.8	6.5	3.6	0.8	2.5	2.8	5.4	9.3	15.6	22.8	31.5	36.9
MARTINIQUE	1985	5.0	2.8	-	-	-	2.7	-	-	7.2	16.9	22.2	40.0
MEXICO	1986	5.1	5.4	2.7	2.9	3.3	3.6	3.0	4.6	7.5	16.6	28.1	44.8
NETHERLANDS ANTILLES (CURACAO)	1981	9.8	7.8	-	-	-	-	18.2	-	16.7	25.0	100.0	50.0
PANAMA	1987	6.0	5.5	-	5.0	1.7	2.5	4.0	3.4	6.3	21.7	53.5	38.5
PARAGUAY (AREA OF INFORMATION)	1986	4.9	5.1	7.1	2.1	2.0	4.7	2.9	-	4.6	17.0	46.2	57.1
PERU	1983	2.7	2.8	0.9	1.0	1.5	1.5	1.7	1.5	3.8	6.1	21.0	46.0
PUERTO RICO	1987	10.7	6.6	-	1.3	1.4	2.0	3.3	5.0	11.6	27.1	62.4	103.2
ST. VINCENT & THE GRENADINES	1986	7.8	8.0	-	-	6.9	8.0	16.2	-	-	53.2	-	-
SURINAME	1985	3.8	3.6	-	5.0	2.2	4.4	4.2	-	7.1	10.0	-	-
TRINIDAD AND TOBAGO	1986	7.8	7.1	-	-	3.8	5.4	2.0	10.7	12.0	29.5	28.2	65.2
UNITED STATES	1987	19.4	9.5	1.0	1.5	2.0	2.7	3.9	6.9	15.8	38.7	85.9	172.1
URUGUAY	1987	14.4	8.4	3.7	5.3	4.0	3.6	4.3	5.8	8.9	27.4	64.2	111.1
VENEZUELA	1987	6.1	6.4	2.3	3.4	3.3	4.2	4.3	4.2	11.7	19.0	32.8	62.0
Female													
ARGENTINA	1986	7.8	4.7	1.8	2.1	2.5	2.2	2.0	4.4	7.2	15.1	29.7	60.5
BAHAMAS	1987	8.7	6.6	-	-	-	4.0	4.8	7.1	9.9	41.3	41.3	70.4
BARBADOS	1988	9.6	...	-	-	-	3.8	-	28.2	9.8	9.8	21.7	56.3
BELIZE	1986	3.6	2.9	33.3	-	-	-	-	11.2	-	-	30.8	-
BRAZIL (AREA OF INFORMATION)	1986	3.7	3.4	1.2	2.2	1.7	1.5	2.0	3.1	5.4	11.4	19.8	32.0
CANADA	1988	15.3	6.4	0.5	1.9	0.8	1.9	2.1	4.7	10.7	23.6	59.7	127.8
CHILE	1987	6.3	4.8	3.1	1.9	2.5	2.3	2.3	3.7	7.8	16.2	39.0	39.7
COLOMBIA	1984	4.4	4.3	1.2	3.7	2.7	2.8	2.8	3.0	7.0	10.8	20.2	29.3
COSTA RICA	1988	7.4	6.9	-	2.6	1.9	4.3	4.2	6.3	10.4	28.2	35.3	100.5
CUBA	1988	8.8	5.9	3.3	2.9	1.9	3.2	3.2	4.6	8.2	25.3	29.1	84.1
DOMINICA	1985	2.7	2.1	-	-	-	11.3	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	2.0	2.2	3.6	1.1	0.8	1.0	1.0	2.1	5.0	8.8	9.6	14.3
ECUADOR	1987	4.6	4.7	6.0	3.0	3.0	2.4	1.7	3.7	7.5	15.3	24.0	39.6
EL SALVADOR	1984	2.4	2.4	-	1.9	1.4	2.6	0.9	2.5	4.3	5.0	8.4	15.8
GUADELOUPE	1981	1.8	1.3	-	-	-	2.8	-	6.0	-	-	-	16.7
GUATEMALA	1984	2.5	2.6	5.2	1.5	1.5	1.6	1.6	3.7	3.4	4.9	5.0	33.3
GUYANA	1984	1.1	1.1	-	4.1	-	-	-	-	-	9.3	7.2	-
HONDURAS	1981	1.4	1.6	-	1.0	0.6	1.7	1.3	0.6	-	2.7	5.1	41.4
JAMAICA	1984	4.7	4.1	-	0.8	1.9	1.8	3.5	7.0	8.2	12.1	29.0	13.5
MARTINIQUE	1985	12.5	5.5	-	-	-	2.7	8.1	-	6.3	21.7	40.4	125.0
MEXICO	1986	3.8	3.8	2.4	1.9	2.4	2.5	1.8	3.0	5.7	12.9	21.0	30.9
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	3.1	-	-	-	-	-	-	-	20.0	66.7	50.0
PANAMA	1987	5.6	5.3	7.1	3.5	4.7	0.8	2.4	4.4	3.9	18.8	24.0	66.3
PARAGUAY (AREA OF INFORMATION)	1986	5.1	5.0	3.9	5.7	3.1	2.6	2.3	3.9	5.8	9.9	19.8	70.4
PERU	1983	2.4	2.2	0.9	1.1	0.9	1.2	1.7	2.0	3.7	5.5	12.5	29.3
PUERTO RICO	1987	8.8	5.2	3.2	0.7	1.8	2.9	1.1	4.8	8.3	16.8	38.9	92.1
ST. VINCENT & THE GRENADINES	1986	1.9	2.1	-	-	-	-	-	-	-	44.8	-	-
SURINAME	1985	5.3	4.9	-	-	2.3	4.4	3.8	11.8	-	11.1	40.0	25.0
TRINIDAD AND TOBAGO	1986	7.0	5.6	-	-	2.4	4.6	3.0	3.0	6.9	29.9	42.7	41.0
UNITED STATES	1987	16.5	6.2	1.0	1.4	1.2	1.7	2.4	4.0	10.4	25.4	55.7	115.9
URUGUAY	1987	12.7	6.2	-	0.9	3.0	1.6	4.9	6.2	10.3	21.2	40.5	87.7
VENEZUELA	1987	4.9	4.9	1.2	2.4	2.9	2.9	3.4	4.1	5.9	16.1	25.9	50.0

TABLE III-9a(15).

Number of deaths from diabetes mellitus (250), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	4709	5	5	10	20	46	106	298	943	1446	1802	28
BAHAMAS	1987	68	-	-	-	-	3	1	10	12	23	19	-
BARBADOS	1988	174	-	-	-	-	-	-	5	18	57	94	-
BELIZE	1986	30	-	-	1	1	-	2	1	4	12	8	1
BRAZIL (AREA OF INFORMATION)	1986	14577	11	23	62	268	462	773	1570	3335	4099	3917	57
CANADA	1988	3819	-	-	-	8	41	62	147	428	999	2134	-
CHILE	1987	1201	-	-	1	4	11	27	83	261	457	377	-
COLOMBIA	1984	2197	3	6	13	42	58	101	234	459	637	625	19
COSTA RICA	1988	263	-	-	-	3	9	7	43	58	67	76	-
CUBA	1988	2166	-	1	1	18	36	59	182	383	822	864	-
DOMINICA	1985	14	-	-	-	1	-	-	1	1	4	6	1
DOMINICAN REPUBLIC	1985	573	5	1	4	25	22	35	58	113	135	175	-
ECUADOR	1987	833	-	-	1	9	11	25	100	182	237	265	3
EL SALVADOR	1984	294	-	-	3	1	4	17	45	71	81	69	3
FRENCH GUIANA	1984	8	-	-	-	-	-	-	2	2	4	-	-
GUADELOUPE	1981	75	-	-	-	1	1	4	4	12	23	30	-
GUATEMALA	1984	304	-	-	-	4	8	24	72	52	84	80	-
GUYANA	1984	163	1	-	-	4	2	13	29	50	40	23	1
HONDURAS	1981	97	-	2	1	4	2	6	13	17	27	25	-
JAMAICA	1984	709	-	1	-	5	5	13	54	144	244	240	3
MARTINIQUE	1985	57	-	-	-	-	-	-	3	7	15	31	1
MEXICO	1986	23132	12	19	43	144	365	886	2739	5765	6062	6992	105
NETHERLANDS ANTILLES (CURACAO)	1981	13	-	-	-	-	-	2	-	3	2	6	-
PANAMA	1987	152	-	-	-	1	3	4	13	36	46	47	-
PARAGUAY (AREA OF INFORMATION)	1986	281	1	-	2	3	2	9	18	57	89	93	7
PERU	1983	569	-	-	1	6	11	12	72	119	165	177	6
PUERTO RICO	1987	1108	-	-	1	3	7	12	82	201	301	500	1
SURINAME	1985	86	-	-	1	2	3	8	11	20	19	22	-
TRINIDAD AND TOBAGO	1986	831	-	-	-	2	10	22	88	213	278	206	2
UNITED STATES	1987	38532	-	10	31	119	618	1203	2258	5914	10789	17588	2
URUGUAY	1987	663	-	1	-	-	9	12	31	103	224	281	2
VENEZUELA	1987	2362	3	2	5	27	49	94	246	555	707	671	3
Male													
ARGENTINA	1986	2142	3	3	4	9	23	61	155	506	679	685	14
BAHAMAS	1987	24	-	-	-	-	1	-	6	2	8	7	-
BARBADOS	1988	58	-	-	-	-	-	-	1	7	20	30	-
BELIZE	1986	13	-	-	-	-	-	1	-	2	6	3	1
BRAZIL (AREA OF INFORMATION)	1986	5915	5	12	16	126	245	455	787	1416	1572	1261	20
CANADA	1988	1752	-	-	-	3	27	42	83	243	514	840	-
CHILE	1987	517	-	-	-	2	5	18	33	130	195	134	-
COLOMBIA	1984	845	3	2	9	21	31	43	97	181	220	229	9
COSTA RICA	1988	98	-	-	-	2	4	5	19	19	21	28	-
CUBA	1988	762	-	1	1	8	22	27	83	142	185	293	-
DOMINICA	1985	5	-	-	-	1	-	-	1	-	1	1	1
DOMINICAN REPUBLIC	1985	256	4	1	3	10	13	24	24	48	64	65	-
ECUADOR	1987	338	-	-	1	5	7	15	47	73	95	94	1
EL SALVADOR	1984	136	-	-	1	-	3	10	22	34	30	34	2
FRENCH GUIANA	1984	4	-	-	-	-	-	-	2	-	2	-	-
GUADELOUPE	1981	21	-	-	-	-	-	1	1	5	9	5	-
GUATEMALA	1984	136	-	-	-	4	8	16	28	20	12	48	-
GUYANA	1984	65	-	-	-	2	2	6	9	22	15	8	1
HONDURAS	1981	53	-	-	-	2	2	3	9	8	18	11	-
JAMAICA	1984	277	-	1	-	4	2	9	23	61	93	82	2
MARTINIQUE	1985	22	-	-	-	-	-	-	2	4	7	9	-
MEXICO	1986	9923	8	11	15	65	211	506	1353	2558	2517	2635	44
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	-	-	1	-	-	1	2	-
PANAMA	1987	56	-	-	-	-	-	3	3	17	18	15	-
PARAGUAY (AREA OF INFORMATION)	1986	120	-	-	1	3	2	3	7	27	37	37	3
PERU	1983	246	-	-	-	2	5	7	31	61	74	65	1
PUERTO RICO	1987	487	-	-	1	2	2	8	42	101	147	183	1
SURINAME	1985	35	-	-	-	1	1	6	3	7	11	6	-
TRINIDAD AND TOBAGO	1986	362	-	-	-	-	2	11	56	100	120	73	-
UNITED STATES	1987	16237	-	5	14	60	363	734	1231	2922	4912	5995	1
URUGUAY	1987	260	-	-	-	-	2	11	21	46	83	97	-
VENEZUELA	1987	1050	3	2	2	12	27	65	133	260	314	230	2
Female													
ARGENTINA	1986	2546	2	2	6	11	23	45	143	436	760	1109	9
BAHAMAS	1987	44	-	-	-	-	2	1	4	10	15	12	-
BARBADOS	1988	116	-	-	-	-	-	-	4	11	37	64	-
BELIZE	1986	17	-	-	1	1	-	1	1	2	6	5	-
BRAZIL (AREA OF INFORMATION)	1986	8648	6	11	46	142	217	317	781	1917	2524	2653	34
CANADA	1988	2067	-	-	-	5	14	20	64	185	485	1294	-
CHILE	1987	684	-	-	1	2	6	9	30	131	262	243	-
COLOMBIA	1984	1352	-	4	4	21	27	58	137	278	417	396	10
COSTA RICA	1988	165	-	-	-	1	5	2	24	39	46	48	-
CUBA	1988	1404	-	-	-	10	14	32	99	241	437	571	-
DOMINICA	1985	9	-	-	-	-	-	-	-	1	3	5	-
DOMINICAN REPUBLIC	1985	317	1	-	1	15	9	11	34	65	71	110	-
ECUADOR	1987	495	-	-	-	4	4	10	53	109	142	171	2
EL SALVADOR	1984	158	-	-	2	1	1	7	23	37	51	35	1
FRENCH GUIANA	1984	4	-	-	-	-	-	-	-	2	2	-	-
GUADELOUPE	1981	54	-	-	-	1	1	3	3	7	14	25	-
GUATEMALA	1984	168	-	-	-	-	-	8	44	32	52	32	-
GUYANA	1984	98	1	-	-	2	-	7	20	28	25	15	-
HONDURAS	1981	44	-	2	1	2	-	3	4	9	9	14	-
JAMAICA	1984	432	-	-	-	1	3	4	31	83	151	158	1
MARTINIQUE	1985	35	-	-	-	-	-	-	1	3	8	22	1
MEXICO	1986	13209	4	8	28	79	154	380	1386	3207	3545	4357	61
NETHERLANDS ANTILLES (CURACAO)	1981	9	-	-	-	-	-	1	-	3	1	4	-
PANAMA	1987	96	-	-	-	1	3	1	10	19	39	32	-
PARAGUAY (AREA OF INFORMATION)	1986	161	1	-	1	-	-	6	11	30	52	56	4
PERU	1983	323	-	-	1	4	8	5	41	58	91	112	5
PUERTO RICO	1987	621	-	-	-	1	5	4	40	100	154	317	-
SURINAME	1985	51	-	-	1	1	2	2	8	13	8	16	-
TRINIDAD AND TOBAGO	1986	469	-	-	-	2	8	11	42	113	158	133	2
UNITED STATES	1987	22295	-	5	17	59	255	469	1027	2992	5877	11593	1
URUGUAY	1987	403	-	1	-	-	7	1	10	57	141	184	2
VENEZUELA	1987	1312	-	-	3	15	22	29	113	295	393	441	1

TABLE III-9b(15).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from diabetes mellitus (250), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	15.3	7.3	0.7	0.2	0.2	0.4	1.0	2.9	9.7	36.2	84.0	199.1
BAHAMAS	1987	27.3	20.4	-	-	-	-	7.2	3.7	51.1	88.4	263.5	429.9
BARBADOS	1988	67.7	...	-	-	-	-	-	-	27.2	104.0	375.0	846.8
BELIZE	1986	18.0	12.1	-	-	2.7	2.8	-	11.5	7.8	42.9	189.3	236.7
BRAZIL (AREA OF INFORMATION)	1986	10.5	9.2	0.2	0.2	0.2	1.0	2.1	5.3	15.4	46.6	100.2	209.7
CANADA	1988	14.6	5.4	-	-	-	0.2	0.9	1.7	5.6	18.1	59.8	203.1
CHILE	1987	9.6	6.4	-	-	0.0	0.2	0.5	1.8	5.9	33.7	98.5	153.9
COLOMBIA	1984	7.8	7.7	0.4	0.2	0.2	0.7	1.3	3.5	12.3	34.3	81.4	214.6
COSTA RICA	1988	9.2	9.0	-	-	-	0.5	1.9	2.4	22.4	43.8	89.3	222.2
CUBA	1988	21.3	11.2	-	0.2	0.1	0.8	2.5	4.6	19.0	54.2	122.2	295.5
DOMINICA	1985	18.4	10.5	-	-	-	5.4	-	-	22.7	25.5	129.0	315.8
DOMINICAN REPUBLIC	1985	8.9	10.2	4.4	0.1	0.2	1.8	2.3	6.2	14.7	44.3	105.9	262.0
ECUADOR	1987	8.4	8.5	-	-	0.0	0.4	0.8	2.7	16.0	44.3	96.1	223.6
EL SALVADOR	1984	6.2	6.7	-	-	0.2	0.1	0.6	4.2	16.3	36.4	75.3	128.5
FRENCH GUIANA	1984	10.0	9.1	-	-	-	-	-	-	35.2	51.0	178.6	-
GUADELOUPE	1981	22.9	12.3	-	-	-	1.4	2.3	12.5	14.5	55.0	143.8	300.0
GUATEMALA	1984	3.9	4.7	-	-	-	0.3	0.8	3.7	15.0	16.0	40.8	115.8
GUYANA	1984	17.4	17.4	6.6	-	-	1.9	1.3	15.6	49.2	115.7	150.4	215.0
HONDURAS	1981	2.5	3.3	-	0.3	0.1	0.5	0.4	1.9	5.7	11.6	35.2	92.9
JAMAICA	1984	30.8	21.4	-	0.4	-	0.9	1.5	8.1	39.5	117.1	272.3	467.8
MARTINIQUE	1985	17.4	6.6	-	-	-	-	-	-	10.1	27.3	79.4	238.5
MEXICO	1986	28.5	29.9	0.5	0.2	0.2	0.8	3.1	12.2	55.0	178.0	326.5	686.3
NETHERLANDS ANTILLES (CURACAO)	1981	7.9	5.3	-	-	-	-	-	11.8	-	33.3	33.3	150.0
PANAMA	1987	6.7	5.8	-	-	-	0.2	0.9	1.7	8.4	33.2	89.7	146.0
PARAGUAY (AREA OF INFORMATION)	1986	12.4	12.8	1.9	-	0.3	0.6	0.6	4.4	13.4	58.4	158.1	376.5
PERU	1983	3.0	3.1	-	-	0.0	0.2	0.4	0.7	5.5	14.1	34.3	92.3
PUERTO RICO	1987	31.2	15.4	-	-	0.1	0.4	1.9	2.8	26.1	82.0	183.3	454.1
SURINAME	1985	22.9	20.5	-	-	1.1	2.2	6.0	25.0	37.9	105.3	190.0	366.7
TRINIDAD AND TOBAGO	1986	69.0	52.2	-	-	-	0.8	5.0	16.7	114.8	332.8	621.9	962.6
UNITED STATES	1987	15.8	5.7	-	0.1	0.1	0.3	1.4	3.5	9.7	26.9	61.1	144.6
URUGUAY	1987	21.7	8.1	-	0.4	-	-	2.2	3.4	9.0	33.6	108.1	230.6
VENEZUELA	1987	12.9	13.5	0.8	0.1	0.1	0.7	1.7	5.0	20.8	69.5	167.6	336.5
Male													
ARGENTINA	1986	14.0	7.5	0.9	0.2	0.1	0.4	1.0	3.3	10.3	40.7	88.8	187.7
BAHAMAS	1987	19.5	16.8	-	-	-	-	4.8	-	63.4	31.7	205.7	443.0
BARBADOS	1988	47.6	...	-	-	-	-	-	-	12.2	98.6	333.3	750.0
BELIZE	1986	15.6	9.9	-	-	-	-	-	11.8	-	44.3	195.4	182.9
BRAZIL (AREA OF INFORMATION)	1986	8.6	7.8	0.2	0.2	0.1	0.9	2.2	6.3	15.5	40.3	80.0	146.9
CANADA	1988	13.5	5.9	-	-	-	0.1	1.2	2.2	6.3	21.2	68.6	209.4
CHILE	1987	8.3	6.4	-	-	-	0.2	0.5	2.4	6.4	35.9	96.4	143.0
COLOMBIA	1984	6.0	6.5	0.7	0.1	0.3	0.7	1.4	3.0	10.2	28.4	61.6	189.6
COSTA RICA	1988	6.8	7.2	-	-	-	0.6	1.7	3.5	19.8	29.2	59.5	195.8
CUBA	1988	14.7	8.1	-	0.3	0.1	0.7	3.0	4.1	17.2	40.1	71.7	195.7
DOMINICA	1985	13.0	9.1	-	-	-	10.4	-	-	52.4	-	71.4	140.8
DOMINICAN REPUBLIC	1985	7.9	9.2	6.9	0.3	0.4	1.4	2.7	8.5	12.3	36.8	98.8	203.6
ECUADOR	1987	6.8	7.4	-	-	0.1	0.5	1.0	3.2	15.2	36.3	80.9	177.7
EL SALVADOR	1984	5.7	6.8	-	-	0.2	-	0.9	4.9	16.1	36.1	62.9	153.8
FRENCH GUIANA	1984	10.0	9.6	-	-	-	-	-	-	70.9	-	188.7	-
GUADELOUPE	1981	13.2	7.8	-	-	-	-	-	6.3	7.8	45.9	128.6	125.0
GUATEMALA	1984	3.5	4.3	-	-	-	0.5	1.6	4.9	11.6	12.3	15.4	145.0
GUYANA	1984	13.8	13.9	-	-	-	1.9	2.5	14.9	31.6	101.9	117.2	163.3
HONDURAS	1981	2.8	3.7	-	-	-	0.5	0.9	1.9	7.9	11.0	48.3	88.7
JAMAICA	1984	24.3	19.0	-	0.8	-	1.4	1.2	12.0	35.9	106.8	225.2	377.9
MARTINIQUE	1985	13.8	6.6	-	-	-	-	-	-	14.5	33.9	77.8	180.0
MEXICO	1986	24.4	27.9	0.6	0.2	0.1	0.8	3.6	14.2	56.2	166.6	296.8	596.0
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	3.2	-	-	-	-	-	12.5	-	-	33.3	100.0
PANAMA	1987	4.8	4.3	-	-	-	-	-	2.5	3.8	30.8	50.7	96.2
PARAGUAY (AREA OF INFORMATION)	1986	10.6	11.7	-	-	0.3	1.3	1.2	3.0	10.7	57.4	142.3	352.4
PERU	1983	2.6	2.9	-	-	-	0.1	0.4	0.8	4.8	14.8	33.0	78.7
PUERTO RICO	1987	28.1	15.1	-	-	0.3	0.6	0.8	4.0	28.7	88.4	169.9	363.1
SURINAME	1985	18.9	18.6	-	-	-	2.2	4.2	40.0	21.4	70.0	220.0	900.0
TRINIDAD AND TOBAGO	1986	60.3	49.5	-	-	-	-	2.0	16.9	134.3	327.9	563.4	793.5
UNITED STATES	1987	13.7	6.0	-	0.1	0.1	0.3	1.7	4.3	10.9	28.2	62.8	139.6
URUGUAY	1987	17.3	7.6	-	-	-	-	1.0	6.4	12.5	31.5	88.9	203.3
VENEZUELA	1987	11.4	12.7	1.1	0.2	0.1	0.6	1.9	6.9	22.5	65.9	158.3	269.0
Female													
ARGENTINA	1986	16.4	7.0	0.6	0.1	0.2	0.5	1.0	2.5	9.2	32.0	79.5	205.3
BAHAMAS	1987	35.0	23.5	-	-	-	-	9.5	7.1	39.6	137.7	309.9	422.5
BARBADOS	1988	85.8	...	-	-	-	-	-	-	39.2	107.8	402.2	901.4
BELIZE	1986	20.3	14.3	-	-	5.5	5.6	-	11.2	15.3	41.8	183.5	287.4
BRAZIL (AREA OF INFORMATION)	1986	12.5	10.4	0.2	0.1	0.3	1.0	2.0	4.3	15.2	52.6	118.8	262.8
CANADA	1988	15.7	4.8	-	-	-	0.2	0.6	1.1	4.9	15.1	52.7	199.2
CHILE	1987	10.8	6.3	-	-	0.1	0.2	0.6	1.1	5.5	31.7	100.2	160.6
COLOMBIA	1984	9.7	8.7	-	0.3	0.1	0.7	1.2	4.1	14.4	39.7	98.0	232.4
COSTA RICA	1988	11.6	10.5	-	-	-	0.3	2.1	1.4	25.0	57.9	115.9	241.2
CUBA	1988	28.2	14.4	-	-	-	0.9	2.0	5.1	20.9	66.5	174.2	400.1
DOMINICA	1985	23.9	11.2	-	-	-	-	-	-	-	46.5	176.5	420.2
DOMINICAN REPUBLIC	1985	9.9	11.1	1.8	-	0.1	2.1	1.9	3.9	17.0	52.3	113.2	315.2
ECUADOR	1987	10.0	9.6	-	-	-	0.4	0.6	2.2	16.9	52.0	110.0	260.7
EL SALVADOR	1984	6.7	6.7	-	-	0.3	0.2	0.3	3.5	16.5	36.7	85.3	110.8
FRENCH GUIANA	1984	10.0	8.5	-	-	-	-	-	-	-	99.5	169.5	-
GUADELOUPE	1981	32.2	15.9	-	-	-	2.8	4.4	17.9	20.3	64.2	155.6	416.7
GUATEMALA	1984	4.4	5.1	-	-	-	-	-	2.5	18.5	19.6	65.2	88.8
GUYANA	1984	21.0	20.6	13.5	-	-	1.9	-	16.2	65.8	129.6	181.2	258.6
HONDURAS	1981	2.3	2.9	-	0.7	0.2	0.6	-	1.9	3.5	12.2	22.9	96.6
JAMAICA	1984	37.2	23.3	-	-	-	0.4	1.8	4.7	42.6	125.9	312.6	533.8
MARTINIQUE	1985	20.8	6.6	-	-	-	-	-	-	6.3	21.7	80.8	275.0
MEXICO	1986	32.6	31.5	0.3	0.2	0.3	0.9	2.7	10.4	54.0	188.3	351.5	755.5
NETHERLANDS ANTILLES (CURACAO)	1981	11.0	7.1	-	-	-	-	-	11.1	-	60.0	33.3	200.0
PANAMA	1987	8.6	7.4	-	-	-	0.4	1.8	0.9	13.1	35.7	89.8	192.8
PARAGUAY (AREA OF INFORMATION)	1986	14.2	13.3	3.9	-	0.3	-	-	5.8	16.0	59.3	171.6	394.4
PERU	1983	3.5	3.3	-	-	0.0	0.2	0.4	0.6	6.2	13.4	35.5	102.6
PUERTO RICO	1987	34.1	15.7	-	-	-	0.3	1.8	1.7	23.8	76.5	187.5	531.0
SURINAME	1985	26.8	22.3	-	-	2.3	2.2	7.7	11.8	53.3	144.4	190.0	400.0
TRINIDAD AND TOBAGO	1986	77.7	54.2	-	-	-	1.5	7.9	16.6	96.1	337.3	675.2	1090.2
UNITED STATES	1987	17.9	5.5	-	0.1	0.1	0.3	1.2	2.7	8.6	25.7	59.7	147.3
URUGUAY	1987	25.9	8.5	-	0.9	-	-	3.4	0.6	5.7	35.5	124.0	248.2
VENEZUELA	1987	14.5	14.1	-	-	0.1	0.8	1.6	3.1	19.1	73.0	175.7	387.2

TABLE III-9a(16).

Number of deaths from nutritional deficiencies (260–269), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	1071	454	159	24	13	15	14	17	40	98	224	13
BAHAMAS	1987	1	-	-	-	-	-	-	-	1	-	-	-
BARBADOS	1988	14	-	-	-	-	-	-	-	-	2	12	-
BELIZE	1986	18	7	2	2	-	1	-	1	1	2	2	-
BRAZIL (AREA OF INFORMATION)	1986	9551	5196	1138	148	78	110	226	301	404	621	1249	80
CANADA	1988	183	1	-	-	-	2	2	1	8	32	137	-
CHILE	1987	145	16	5	1	-	-	2	9	15	37	60	-
COLOMBIA	1984	1983	421	673	75	34	42	40	60	105	176	326	31
COSTA RICA	1988	50	19	2	-	-	1	-	-	1	5	22	-
CUBA	1988	24	1	1	-	-	-	-	-	3	2	17	-
DOMINICA	1985	1	-	-	-	-	-	-	-	-	-	1	-
DOMINICAN REPUBLIC	1985	653	170	221	33	12	19	10	15	9	23	141	-
ECUADOR	1987	1147	411	379	25	8	7	7	10	27	48	220	5
EL SALVADOR	1984	209	9	102	11	3	2	5	6	14	26	18	13
GUADELOUPE	1981	10	-	-	-	-	-	-	-	-	3	7	-
GUATEMALA	1984	3508	476	812	264	136	96	156	236	300	432	588	12
GUYANA	1984	249	153	42	3	1	2	3	9	5	8	7	16
HONDURAS	1981	125	29	53	23	3	1	1	-	6	4	5	-
JAMAICA	1984	319	112	72	7	6	2	-	7	9	37	64	3
MARTINIQUE	1985	1	-	-	-	-	-	-	-	-	-	1	-
MEXICO	1986	6689	1242	575	183	121	106	136	187	322	597	3170	50
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	-	-	-	-	1	-
PANAMA	1987	80	17	34	-	1	2	-	-	2	6	17	1
PARAGUAY (AREA OF INFORMATION)	1986	130	68	41	5	1	3	-	2	3	5	2	-
PERU	1983	2347	786	911	72	18	18	25	20	42	81	250	123
PUERTO RICO	1987	24	2	-	-	-	1	1	-	2	3	15	-
ST. VINCENT & THE GRENADINES	1986	6	2	1	-	-	-	1	-	-	1	1	-
SURINAME	1985	22	8	6	-	3	1	-	1	-	-	2	1
TRINIDAD AND TOBAGO	1986	31	-	1	-	-	-	1	-	2	8	18	1
UNITED STATES	1987	2889	25	8	6	9	21	25	39	108	346	2302	-
URUGUAY	1987	114	78	3	-	-	-	1	-	2	7	23	-
VENEZUELA	1987	569	166	122	18	7	10	11	18	21	41	151	4
Male													
ARGENTINA	1986	562	253	77	15	8	7	11	11	27	50	95	8
BAHAMAS	1987	-	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	7	-	-	-	-	-	-	-	-	1	6	-
BELIZE	1986	10	4	-	1	-	1	-	-	-	2	1	-
BRAZIL (AREA OF INFORMATION)	1986	5310	2965	585	77	46	70	147	195	269	364	541	51
CANADA	1988	80	1	-	-	-	1	2	1	6	18	51	-
CHILE	1987	76	7	3	-	-	-	1	6	10	23	26	-
COLOMBIA	1984	1055	245	325	44	18	26	22	30	66	102	156	21
COSTA RICA	1988	30	14	-	-	-	-	-	-	1	4	11	-
CUBA	1988	13	-	-	-	-	-	-	-	2	2	9	-
DOMINICA	1985	1	-	-	-	-	-	-	-	-	-	1	
DOMINICAN REPUBLIC	1985	341	86	117	12	9	10	7	6	7	12	75	
ECUADOR	1987	582	220	192	10	3	4	2	4	13	23	89	2
EL SALVADOR	1984	109	5	45	3	-	1	4	3	9	17	12	10
GUADELOUPE	1981	3	-	-	-	-	-	-	-	-	1	2	-
GUATEMALA	1984	1760	260	384	140	52	36	84	116	136	248	296	8
GUYANA	1984	154	90	27	2	1	1	1	6	4	6	5	11
HONDURAS	1981	65	16	24	14	2	-	1	-	4	2	2	-
JAMAICA	1984	182	71	38	6	4	2	-	4	6	26	23	2
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	3195	841	297	97	53	62	81	103	179	323	1331	28
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	39	10	14	-	1	1	-	-	2	2	9	-
PARAGUAY (AREA OF INFORMATION)	1986	63	38	19	1	-	1	-	-	2	1	1	-
PERU	1983	1157	412	448	38	10	10	9	11	23	43	89	64
PUERTO RICO	1987	6	-	-	-	-	1	1	-	1	1	2	-
ST. VINCENT & THE GRENADINES	1986	4	1	1	-	-	-	1	-	-	1	-	-
SURINAME	1985	10	4	1	-	3	1	-	1	-	-	-	-
TRINIDAD AND TOBAGO	1986	19	-	1	-	-	-	1	-	2	5	10	-
UNITED STATES	1987	1107	16	6	3	7	9	11	19	66	171	799	-
URUGUAY	1987	56	40	1	-	-	-	-	-	1	3	11	-
VENEZUELA	1987	286	91	57	4	5	3	7	9	15	20	71	4
Female													
ARGENTINA	1986	505	201	82	8	5	7	3	6	13	47	129	4
BAHAMAS	1987	1	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	7	-	-	-	-	-	-	-	1	-	-	-
BELIZE	1986	8	3	2	1	-	-	-	1	-	1	6	-
BRAZIL (AREA OF INFORMATION)	1986	4226	2222	552	71	32	40	79	106	135	255	707	27
CANADA	1988	103	-	-	-	-	1	-	-	2	14	86	-
CHILE	1987	69	9	2	1	-	-	1	3	5	14	34	-
COLOMBIA	1984	928	176	348	31	16	16	18	30	39	74	170	10
COSTA RICA	1988	20	5	2	-	-	1	-	-	-	1	11	-
CUBA	1988	11	1	1	-	-	-	-	-	1	-	8	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	312	84	104	21	3	9	3	9	2	11	66	-
ECUADOR	1987	585	191	187	15	5	3	5	6	14	25	131	3
EL SALVADOR	1984	100	4	57	8	3	1	1	3	5	9	6	3
GUADELOUPE	1981	7	-	-	-	-	-	-	-	-	2	5	-
GUATEMALA	1984	1748	216	428	124	84	60	72	120	164	184	292	4
GUYANA	1984	95	63	15	1	-	1	2	3	1	2	2	5
HONDURAS	1981	60	13	29	9	1	1	-	-	2	2	3	-
JAMAICA	1984	137	41	34	1	2	-	-	3	3	11	41	1
MARTINIQUE	1985	1	-	-	-	-	-	-	-	-	-	1	-
MEXICO	1986	3494	601	278	86	68	44	55	84	143	274	1839	22
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	-	-	-	-	1	-
PANAMA	1987	41	7	20	-	-	1	-	-	-	4	8	1
PARAGUAY (AREA OF INFORMATION)	1986	67	30	22	4	1	2	-	2	1	4	1	-
PERU	1983	1190	374	463	34	9	8	16	9	19	38	161	59
PUERTO RICO	1987	18	2	-	-	-	-	-	-	1	2	13	-
ST. VINCENT & THE GRENADINES	1986	2	1	-	-	-	-	-	-	-	-	1	-
SURINAME	1985	12	4	5	-	-	-	-	-	-	-	2	1
TRINIDAD AND TOBAGO	1986	12	-	-	-	-	-	-	-	-	3	8	1
UNITED STATES	1987	1782	9	2	3	2	12	14	20	42	175	1503	-
URUGUAY	1987	58	38	2	-	-	-	1	-	1	4	12	-
VENEZUELA	1987	283	75	65	14	2	7	4	9	6	21	80	-

TABLE III-9b(16).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from nutritional deficiencies (260–269), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	3.5	3.6	67.2	5.7	0.4	0.3	0.3	0.4	0.6	1.5	5.7	24.7
BAHAMAS	1987	0.4	0.3	-	-	-	-	-	-	-	7.4	-	-
BARBADOS	1988	5.4	...	-	-	-	-	-	-	-	-	13.2	108.1
BELIZE	1986	10.8	9.6	114.1	12.5	5.4	-	4.1	-	7.8	10.7	31.5	59.2
BRAZIL (AREA OF INFORMATION)	1986	6.9	6.1	97.4	7.5	0.5	0.3	0.5	1.6	2.9	5.6	15.2	66.9
CANADA	1988	0.7	0.2	0.3	-	-	-	0.0	0.1	0.0	0.3	1.9	13.0
CHILE	1987	1.2	0.9	6.0	0.5	0.0	-	-	0.1	0.8	1.9	8.0	24.5
COLOMBIA	1984	7.1	7.7	51.0	23.8	1.1	0.5	0.9	1.4	3.2	7.9	22.5	112.0
COSTA RICA	1988	1.7	1.8	23.3	0.6	-	-	0.2	-	-	0.8	6.7	64.3
CUBA	1988	0.2	0.1	0.5	0.2	-	-	-	-	-	0.4	0.4	5.8
DOMINICA	1985	1.3	0.6	-	-	-	-	-	-	-	-	-	52.6
DOMINICAN REPUBLIC	1985	10.2	13.0	150.2	29.7	2.0	0.8	2.0	1.8	3.8	3.5	18.0	211.1
ECUADOR	1987	11.6	13.8	201.0	30.7	1.0	0.4	0.5	0.8	1.6	6.6	19.5	185.7
EL SALVADOR	1984	4.4	4.1	6.2	15.8	0.8	0.3	0.3	1.2	2.2	7.2	24.2	33.5
GUADELOUPE	1981	3.1	1.3	-	-	-	-	-	-	-	-	18.8	70.0
GUATEMALA	1984	45.5	47.1	152.5	74.1	12.2	9.1	9.5	24.1	49.2	92.1	274.3	850.9
GUYANA	1984	26.6	41.3	1006.5	42.3	1.3	0.5	1.3	3.6	15.3	11.6	30.1	65.4
HONDURAS	1981	3.3	2.9	18.0	9.1	2.1	0.4	0.2	0.3	-	4.1	5.2	18.6
JAMAICA	1984	13.9	14.1	208.4	29.6	1.3	1.1	0.6	-	5.1	7.3	41.3	124.8
MARTINIQUE	1985	0.3	0.1	-	-	-	-	-	-	-	-	-	7.7
MEXICO	1986	8.2	8.1	48.4	5.9	0.8	0.7	0.9	1.9	3.8	9.9	32.2	311.2
NETHERLANDS ANTILLES (CURACAO)	1981	0.6	0.3	-	-	-	-	-	-	-	-	-	25.0
PANAMA	1987	3.5	3.8	29.5	14.5	-	0.2	0.6	-	-	1.8	8.7	52.8
PARAGUAY (AREA OF INFORMATION)	1988	5.7	6.8	126.7	14.3	0.9	0.2	0.9	-	1.5	3.1	8.9	8.1
PERU	1983	12.5	11.7	114.1	40.2	1.5	0.5	0.7	1.4	1.5	5.0	16.9	130.3
PUERTO RICO	1987	0.7	0.4	3.1	-	-	-	0.2	0.2	-	0.8	1.6	13.6
ST. VINCENT & THE GRENADINES	1986	5.7	6.1	73.9	7.7	-	-	-	15.4	-	-	27.9	48.5
SURINAME	1985	5.9	5.6	68.4	15.0	-	3.3	2.0	-	3.4	-	-	33.3
TRINIDAD AND TOBAGO	1986	2.6	1.7	-	0.9	-	-	-	0.8	-	3.1	17.9	84.1
UNITED STATES	1987	1.2	0.4	0.7	0.1	0.0	0.0	0.0	0.1	0.2	0.6	2.0	18.9
URUGUAY	1987	3.7	5.1	145.9	1.3	-	-	-	0.3	-	0.7	3.4	18.9
VENEZUELA	1987	3.1	3.3	32.1	5.6	0.4	0.2	0.4	0.6	1.5	2.6	9.7	75.7
Male													
ARGENTINA	1986	3.7	3.9	73.5	5.4	0.5	0.3	0.3	0.6	0.7	2.2	6.5	26.0
BAHAMAS	1987	-	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	5.7	...	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	12.0	9.8	127.8	-	5.3	-	8.3	-	-	22.2	65.1	61.0
BRAZIL (AREA OF INFORMATION)	1986	7.7	6.8	111.1	7.7	0.5	0.3	0.6	2.1	3.8	7.7	18.5	63.0
CANADA	1988	0.6	0.3	0.5	-	-	-	0.0	0.1	0.1	0.5	2.4	12.7
CHILE	1987	1.2	1.1	5.1	0.6	-	-	-	0.1	1.2	2.8	11.4	27.7
COLOMBIA	1984	7.5	8.3	58.2	22.6	1.3	0.6	1.1	1.5	3.2	10.4	28.5	129.1
COSTA RICA	1988	2.1	2.3	33.4	-	-	-	-	-	-	1.5	11.3	76.9
CUBA	1988	0.3	0.1	-	-	-	-	-	-	-	0.8	0.8	6.0
DOMINICA	1985	2.6	1.7	-	-	-	-	-	-	-	-	-	140.8
DOMINICAN REPUBLIC	1985	10.6	13.4	148.3	31.0	1.4	1.3	2.1	2.5	3.1	5.4	18.5	235.1
ECUADOR	1987	11.3	13.8	211.8	30.6	0.8	0.3	0.6	0.4	1.3	6.5	19.6	168.2
EL SALVADOR	1984	4.6	4.4	6.6	13.7	0.5	-	0.3	2.0	2.2	9.6	35.6	54.3
GUADELOUPE	1981	1.9	0.9	-	-	-	-	-	-	-	-	14.3	50.0
GUATEMALA	1984	45.0	47.4	164.0	68.8	12.7	6.9	7.1	25.9	48.1	83.8	318.8	894.3
GUYANA	1984	32.8	49.0	1155.5	53.9	1.8	0.9	1.3	2.5	21.1	18.5	46.9	102.0
HONDURAS	1981	3.4	3.0	19.4	8.2	2.6	0.5	-	0.6	-	5.5	5.4	16.1
JAMAICA	1984	16.0	16.7	259.0	30.9	2.2	1.4	1.2	-	6.3	10.5	63.0	106.0
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	7.9	8.3	48.9	6.0	0.9	0.6	1.1	2.3	4.3	11.7	38.1	301.1
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	3.4	3.7	33.9	11.7	-	0.4	0.6	-	-	3.6	5.6	57.7
PARAGUAY (AREA OF INFORMATION)	1988	5.5	6.5	135.6	13.0	0.3	-	0.6	-	-	4.3	3.8	9.5
PERU	1983	12.3	11.4	117.4	38.9	1.6	0.5	0.7	1.0	1.7	5.6	19.2	107.7
PUERTO RICO	1987	0.3	0.2	-	-	-	-	0.4	0.5	-	0.9	1.2	4.0
ST. VINCENT & THE GRENADINES	1986	7.8	9.0	72.4	15.1	-	-	-	32.8	-	-	82.9	-
SURINAME	1985	5.4	5.2	69.2	5.0	-	6.7	4.2	-	7.1	-	-	-
TRINIDAD AND TOBAGO	1986	3.2	2.5	-	1.7	-	-	-	1.5	-	6.6	23.5	108.7
UNITED STATES	1987	0.9	0.4	0.8	0.1	0.0	0.0	0.0	0.1	0.2	0.6	2.2	18.6
URUGUAY	1987	3.7	5.1	146.8	0.9	-	-	-	-	-	0.7	3.2	23.1
VENEZUELA	1987	3.1	3.4	34.5	5.2	0.2	0.3	0.2	0.7	1.5	3.8	10.1	83.0
Female													
ARGENTINA	1986	3.3	3.3	60.7	5.9	0.3	0.2	0.3	0.2	0.4	1.0	4.9	23.9
BAHAMAS	1987	0.8	0.6	-	-	-	-	-	-	-	13.8	-	-
BARBADOS	1988	5.2	...	-	-	-	-	-	-	-	-	10.9	84.5
BELIZE	1986	9.6	9.6	99.8	25.4	5.5	-	-	-	15.3	-	-	57.5
BRAZIL (AREA OF INFORMATION)	1986	6.1	5.3	83.3	7.4	0.4	0.2	0.4	1.1	2.1	3.7	12.0	70.0
CANADA	1988	0.8	0.2	-	-	-	-	0.0	-	-	0.2	1.5	13.2
CHILE	1987	1.1	0.8	6.9	0.4	0.1	-	-	0.1	0.5	1.2	5.4	22.5
COLOMBIA	1984	6.6	7.1	43.5	24.9	0.9	0.5	0.7	1.3	3.1	5.6	17.4	89.8
COSTA RICA	1988	1.4	1.3	12.7	1.3	-	-	0.4	-	-	-	2.5	55.3
CUBA	1988	0.2	0.2	1.1	0.3	-	-	-	-	-	0.3	-	5.6
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	9.8	12.5	152.1	28.4	2.5	0.4	1.9	1.1	4.5	1.6	17.5	189.1
ECUADOR	1987	11.9	13.7	189.8	30.7	1.2	0.5	0.4	1.1	1.9	6.7	19.4	199.7
EL SALVADOR	1984	4.2	4.0	5.7	18.0	1.3	0.6	0.3	0.5	2.2	5.0	15.1	19.0
GUADELOUPE	1981	4.2	1.5	-	-	-	-	-	-	-	-	22.2	83.3
GUATEMALA	1984	45.7	46.8	140.6	79.6	11.7	11.4	12.0	22.2	50.4	100.4	230.9	811.1
GUYANA	1984	20.4	33.4	853.4	30.5	0.9	-	1.3	4.6	9.9	4.6	14.5	34.5
HONDURAS	1981	3.1	2.8	16.5	10.0	1.7	0.3	0.4	-	-	2.7	5.1	20.7
JAMAICA	1984	11.8	11.4	155.7	28.3	0.4	0.7	-	-	4.1	4.6	22.8	138.5
MARTINIQUE	1985	0.6	0.1	-	-	-	-	-	-	-	-	-	12.5
MEXICO	1986	8.6	7.9	47.8	5.9	0.8	0.8	0.8	1.5	3.3	8.4	27.2	318.9
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	0.6	-	-	-	-	-	-	-	-	-	50.0
PANAMA	1987	3.7	3.9	24.9	17.6	-	-	0.6	-	-	-	12.0	48.2
PARAGUAY (AREA OF INFORMATION)	1986	5.9	7.0	117.0	15.6	1.4	0.4	1.2	-	2.9	2.0	13.2	7.0
PERU	1983	12.8	11.9	110.7	41.6	1.5	0.5	0.6	1.8	1.4	4.4	14.8	147.4
PUERTO RICO	1987	1.0	0.5	6.3	-	-	-	-	-	-	0.8	2.0	21.8
ST. VINCENT & THE GRENADINES	1986	3.7	3.3	75.4	-	-	-	-	-	-	-	-	78.7
SURINAME	1985	6.3	5.9	67.6	25.0	-	-	-	-	-	-	-	50.0
TRINIDAD AND TOBAGO	1986	2.0	1.1	-	-	-	-	-	-	-	-	12.8	65.6
UNITED STATES	1987	1.4	0.3	0.5	0.0	0.0	0.0	0.1	0.1	0.2	0.4	1.8	19.1
URUGUAY	1987	3.7	5.2	145.1	1.8	-	-	-	0.6	-	0.6	3.5	16.2
VENEZUELA	1987	3.1	3.2	29.6	6.1	0.6	0.1	0.5	0.4	1.5	1.5	9.4	70.2

TABLE III-9a(17).

Number of deaths from diseases of the heart (390–429), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	76856	604	321	216	385	769	2055	5235	11597	18603	36501	570
BAHAMAS	1987	250	1	2	1	3	3	11	33	44	75	77	-
BARBADOS	1988	507	-	-	1	2	7	9	29	39	112	307	1
BELIZE	1986	98	2	1	1	1	3	3	3	14	19	50	2
BRAZIL (AREA OF INFORMATION)	1986	132404	582	348	557	1569	3545	8002	15042	25566	32968	43560	665
CANADA	1988	58457	25	18	14	51	173	828	2378	6992	14438	33533	6
CHILE	1987	11378	13	14	14	62	103	243	627	1419	2906	5970	7
COLOMBIA	1984	28216	141	179	137	387	606	1196	2551	4620	7190	10844	385
COSTA RICA	1988	2232	6	9	6	22	46	62	113	247	534	1176	11
CUBA	1988	19979	17	16	17	86	172	536	1232	2501	4641	10753	8
DOMINICA	1985	107	-	-	-	-	2	1	4	14	29	55	2
DOMINICAN REPUBLIC	1985	4535	133	70	66	101	120	192	436	644	844	1929	-
ECUADOR	1987	5343	51	47	62	115	158	225	388	643	1012	2585	57
EL SALVADOR	1984	2098	9	29	30	87	105	110	198	350	476	661	43
GUADELOUPE	1981	419	2	1	1	2	4	9	24	59	111	206	-
GUATEMALA	1984	3204	-	-	20	152	128	156	308	480	736	1216	8
GUYANA	1984	875	4	4	13	13	24	51	118	188	201	227	32
HONDURAS	1981	1447	83	66	44	57	74	82	145	210	284	402	-
JAMAICA	1984	2761	8	8	23	40	34	50	137	346	713	1381	21
MARTINIQUE	1985	361	-	-	1	5	4	10	16	54	78	195	2
MEXICO	1986	50739	1070	437	371	796	1268	2055	3738	6525	9480	24698	303
NETHERLANDS ANTILLES (CURACAO)	1981	172	2	1	-	-	1	4	14	32	39	79	-
PANAMA	1987	1562	10	9	4	19	29	50	91	185	402	746	17
PARAGUAY (AREA OF INFORMATION)	1986	2152	10	8	9	18	31	82	132	304	503	999	56
PERU	1983	6695	138	107	71	173	220	270	466	737	1205	3108	200
PUERTO RICO	1987	7125	17	9	9	22	67	175	415	950	1756	3675	30
ST. KITTS AND NEVIS	1985	93	-	-	-	1	-	2	1	26	...	...	-
SAINT LUCIA	1988	212	3	1	1	2	4	8	9	43	43	96	2
ST. VINCENT & THE GRENADINES	1986	166	-	-	1	1	5	5	16	16	52	65	5
SURINAME	1985	408	2	3	2	4	12	20	47	88	89	138	3
TRINIDAD AND TOBAGO	1986	1993	1	1	2	12	20	70	187	363	565	762	4
UNITED STATES	1987	768492	952	323	325	1077	3699	12378	33047	90882	179997	445704	108
URUGUAY	1987	7294	18	3	4	15	27	146	357	977	1809	3890	48
VENEZUELA	1987	14002	69	48	58	123	279	615	1282	2591	3443	5461	33
Male													
ARGENTINA	1986	41957	321	180	112	210	423	1384	3832	8245	11282	15658	310
BAHAMAS	1987	129	-	1	1	2	2	5	24	23	43	28	-
BARBADOS	1988	239	-	-	1	2	4	4	20	26	58	125	1
BELIZE	1986	50	1	-	-	-	2	2	2	11	8	23	1
BRAZIL (AREA OF INFORMATION)	1986	72696	300	182	276	832	2088	5048	9892	15985	18479	19438	376
CANADA	1988	32227	17	8	4	30	127	684	1890	5273	9364	14885	5
CHILE	1987	5757	8	5	8	36	66	149	424	895	1664	2496	6
COLOMBIA	1984	14846	83	96	67	219	351	644	1443	2617	3958	5153	215
COSTA RICA	1988	1225	4	2	4	12	30	42	79	171	306	567	8
CUBA	1988	11241	11	8	5	44	104	354	776	1555	2721	5658	5
DOMINICA	1985	44	-	-	-	-	1	1	2	6	17	15	2
DOMINICAN REPUBLIC	1985	2385	65	39	28	40	56	102	250	399	480	926	-
ECUADOR	1987	2705	24	25	33	59	88	124	208	361	574	1184	25
EL SALVADOR	1984	1152	6	10	20	48	54	67	114	216	267	326	24
GUADELOUPE	1981	200	1	1	-	1	1	4	13	38	57	82	-
GUATEMALA	1984	1720	-	-	8	72	76	68	172	280	404	636	4
GUYANA	1984	520	2	3	7	8	15	31	72	124	124	119	15
HONDURAS	1981	760	38	35	24	29	33	48	80	118	158	197	-
JAMAICA	1984	1336	5	4	11	19	15	26	71	185	384	605	11
MARTINIQUE	1985	160	-	-	1	2	3	4	7	33	37	72	1
MEXICO	1986	25144	630	231	188	397	669	1175	2185	3812	4988	10717	152
NETHERLANDS ANTILLES (CURACAO)	1981	86	2	-	-	-	1	4	6	19	21	33	-
PANAMA	1987	842	3	7	2	10	11	29	68	106	238	355	13
PARAGUAY (AREA OF INFORMATION)	1986	1117	7	1	5	9	15	46	79	197	296	441	21
PERU	1983	3239	74	54	46	78	101	129	253	427	650	1335	92
PUERTO RICO	1987	3889	9	6	4	15	39	129	282	605	1023	1749	28
ST. KITTS AND NEVIS	1985	51	-	-	-	1	-	1	1	17	...	...	-
SAINT LUCIA	1988	113	2	1	1	-	3	6	5	23	24	47	1
ST. VINCENT & THE GRENADINES	1986	72	-	-	-	1	1	1	9	7	23	28	2
SURINAME	1985	230	2	3	-	1	8	15	33	58	42	66	2
TRINIDAD AND TOBAGO	1986	1098	-	1	1	3	9	50	115	239	333	345	2
UNITED STATES	1987	388747	546	167	179	680	2492	9408	24497	62576	109591	178545	66
URUGUAY	1987	3925	10	3	3	6	20	94	269	693	1151	1647	29
VENEZUELA	1987	7631	35	21	30	66	177	392	852	1658	1986	2391	23
Female													
ARGENTINA	1986	34491	278	138	86	168	343	655	1379	3308	7256	20703	177
BAHAMAS	1987	121	1	1	-	1	1	6	9	21	32	49	-
BARBADOS	1988	268	-	-	1	1	3	5	9	13	54	182	-
BELIZE	1986	48	1	1	1	1	-	1	1	3	11	27	1
BRAZIL (AREA OF INFORMATION)	1986	59596	281	165	281	736	1457	2947	5336	9562	14468	24088	275
CANADA	1988	26230	8	10	10	21	46	164	488	1719	5075	18688	1
CHILE	1987	5621	5	9	6	26	37	94	203	524	1242	3474	1
COLOMBIA	1984	13370	58	83	70	168	255	552	1088	2003	3232	5691	170
COSTA RICA	1988	1007	2	7	2	10	16	20	34	76	228	609	3
CUBA	1988	8738	6	8	12	42	68	182	456	946	1920	5095	3
DOMINICA	1985	63	-	-	-	-	1	-	2	8	12	40	-
DOMINICAN REPUBLIC	1985	2150	68	31	38	61	64	90	186	245	364	1003	-
ECUADOR	1987	2638	27	22	29	56	70	101	180	282	438	1401	32
EL SALVADOR	1984	946	3	19	10	39	51	43	84	134	209	335	19
GUADELOUPE	1981	219	1	-	1	1	3	3	11	21	54	124	-
GUATEMALA	1984	1484	-	-	12	80	52	88	136	200	332	580	4
GUYANA	1984	355	2	1	6	5	9	20	46	64	77	108	17
HONDURAS	1981	687	45	31	20	28	41	34	65	92	126	205	-
JAMAICA	1984	1425	3	4	12	21	19	24	66	161	329	776	10
MARTINIQUE	1985	201	-	-	-	3	1	6	9	21	41	119	1
MEXICO	1986	25595	440	206	183	399	599	880	1553	2713	4492	13979	151
NETHERLANDS ANTILLES (CURACAO)	1981	86	-	1	-	-	-	-	8	13	18	46	-
PANAMA	1987	720	7	2	2	9	18	21	23	79	164	391	4
PARAGUAY (AREA OF INFORMATION)	1986	1035	3	7	4	9	16	36	53	107	207	558	35
PERU	1983	3456	64	53	25	95	119	141	213	310	555	1773	108
PUERTO RICO	1987	3236	8	3	5	7	28	46	133	345	733	1926	2
ST. KITTS AND NEVIS	1985	42	-	-	-	-	-	1	-	9	...	...	-
SAINT LUCIA	1988	99	1	-	-	2	1	2	4	20	19	49	1
ST. VINCENT & THE GRENADINES	1986	94	-	-	1	-	4	4	7	9	29	37	3
SURINAME	1985	178	-	-	2	3	4	5	14	30	47	72	1
TRINIDAD AND TOBAGO	1986	895	1	-	1	9	11	26	72	124	232	417	2
UNITED STATES	1987	379745	406	156	146	397	1207	2970	8550	28306	70406	267159	42
URUGUAY	1987	3369	8	-	1	9	7	52	88	284	658	2243	19
VENEZUELA	1987	6371	34	27	28	57	102	223	430	933	1457	3070	10

TABLE III-9b(17).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from diseases of the heart (390–429), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	250.0	120.5	89.4	11.5	3.6	8.0	17.3	55.8	171.2	445.2	1081.2	4032.7
BAHAMAS	1987	100.4	76.4	23.1	8.7	1.9	5.8	7.2	40.4	168.7	324.2	859.1	1742.1
BARBADOS	1988	197.3	...	-	-	2.0	3.8	15.6	34.1	157.6	225.4	736.8	2765.8
BELIZE	1986	58.7	38.9	32.6	6.3	2.7	2.8	8.2	17.2	23.4	150.2	299.7	1479.3
BRAZIL (AREA OF INFORMATION)	1986	95.6	83.5	10.9	2.3	1.7	5.6	16.1	55.3	147.1	356.9	805.9	2331.9
CANADA	1988	224.0	81.3	6.7	1.2	0.4	1.2	3.7	22.2	81.2	295.2	864.7	3191.2
CHILE	1987	90.8	59.1	4.9	1.3	0.6	2.4	4.9	15.8	58.9	183.2	526.6	2436.7
COLOMBIA	1984	100.4	100.0	17.1	6.3	2.1	6.2	13.5	42.0	132.9	345.5	918.5	3723.9
COSTA RICA	1988	77.9	74.8	7.4	2.8	0.9	3.6	9.6	21.6	58.9	186.6	712.0	3438.6
CUBA	1988	196.8	97.7	9.0	2.5	0.9	3.8	11.8	41.7	128.7	354.2	912.1	3677.5
DOMINICA	1985	140.7	83.1	-	-	-	-	18.2	17.3	90.7	357.1	935.5	2894.7
DOMINICAN REPUBLIC	1985	70.7	81.5	117.5	9.4	3.9	7.1	12.4	33.9	110.2	252.7	662.0	2887.7
ECUADOR	1987	53.8	53.9	24.9	3.8	2.4	5.7	11.1	24.3	62.2	156.6	410.4	2181.4
EL SALVADOR	1984	44.3	46.4	6.2	4.5	2.5	9.2	16.2	27.3	71.8	179.7	442.8	1230.9
GUADELOUPE	1981	128.1	65.8	30.8	5.1	1.3	2.8	9.2	27.6	87.0	270.6	693.8	2060.0
GUATEMALA	1984	41.4	49.4	-	-	0.9	10.1	12.7	24.1	64.3	147.4	467.3	1759.8
GUYANA	1984	93.5	89.8	26.4	4.0	5.8	8.2	15.2	41.1	200.3	435.2	755.6	2121.5
HONDURAS	1981	37.9	47.9	51.5	11.4	4.0	7.8	15.8	25.7	63.7	143.8	370.8	1494.4
JAMAICA	1984	120.0	78.3	14.9	3.3	4.2	7.1	10.1	31.1	100.1	281.3	795.8	2692.0
MARTINIQUE	1985	110.1	46.3	-	-	1.9	6.6	8.1	28.1	54.1	210.9	412.7	1489.2
MEXICO	1986	62.5	62.8	41.7	4.5	1.7	4.7	10.9	28.4	75.1	201.5	510.6	2424.0
NETHERLANDS ANTILLES (CURACAO)	1981	104.8	68.8	50.0	6.3	-	-	4.5	23.5	116.7	355.6	650.0	1975.0
PANAMA	1987	68.7	58.2	17.3	3.8	0.7	4.0	8.5	21.5	58.6	170.7	583.5	2316.8
PARAGUAY (AREA OF INFORMATION)	1986	94.7	97.3	18.6	2.8	1.5	3.9	8.9	40.4	98.5	311.5	893.4	4044.5
PERU	1983	55.8	56.6	20.0	4.7	1.5	4.6	8.1	14.9	35.6	87.2	250.8	1620.4
PUERTO RICO	1987	200.5	97.1	26.4	3.1	1.3	3.2	12.9	40.5	132.1	387.6	952.8	3337.9
ST. KITTS AND NEVIS	1985	201.9	...	-	-	-	9.1	-	65.6	43.3	1019.6	...	...
SAINT LUCIA	1988	159.4	119.7	83.6	6.4	3.2	6.7	20.6	89.0	121.1	655.5	905.3	3735.4
ST. VINCENT & THE GRENADINES	1986	158.0	125.3	-	-	3.5	4.0	36.5	76.9	299.1	389.3	1448.5	3155.3
SURINAME	1985	108.8	93.7	17.1	7.5	2.2	4.4	24.0	62.5	162.1	463.2	890.0	2300.0
TRINIDAD AND TOBAGO	1986	165.5	122.1	3.1	0.9	0.8	4.6	9.9	57.8	219.0	567.2	1284.0	3560.7
UNITED STATES	1987	315.7	102.9	24.9	2.2	1.0	2.8	8.5	36.1	142.0	412.7	1018.8	3663.2
URUGUAY	1987	238.5	87.3	33.7	1.3	0.7	3.0	6.5	41.7	104.0	318.6	873.4	3192.7
VENEZUELA	1987	76.6	80.5	13.4	2.2	1.3	3.3	9.9	32.8	108.4	324.4	816.0	2738.7
Male													
ARGENTINA	1986	275.1	151.4	93.2	12.7	3.7	8.6	18.8	74.6	253.7	662.8	1476.2	4289.9
BAHAMAS	1987	104.7	90.7	-	8.7	3.6	7.6	9.6	38.0	253.4	364.5	1105.4	1772.2
BARBADOS	1988	196.2	...	-	-	-	3.8	17.9	32.8	243.9	346.2	968.7	3125.0
BELIZE	1986	59.9	41.9	32.0	-	-	-	16.5	23.5	32.0	243.9	360.6	1402.4
BRAZIL (AREA OF INFORMATION)	1986	105.3	95.6	11.2	2.4	1.7	5.9	19.0	70.4	190.9	454.7	940.2	2264.2
CANADA	1988	249.2	109.4	8.9	1.0	0.2	1.3	5.4	35.3	144.3	460.8	1249.9	3700.1
CHILE	1987	82.8	71.7	5.9	0.9	0.6	2.8	6.3	19.8	82.3	247.4	822.9	2663.8
COLOMBIA	1984	105.9	115.8	19.7	6.7	2.0	7.0	15.4	44.4	151.8	411.2	1107.8	4265.7
COSTA RICA	1988	84.6	91.0	9.5	1.2	1.2	3.8	12.4	29.1	82.4	262.7	866.9	3965.0
CUBA	1988	217.4	110.1	11.4	2.5	0.5	3.8	14.1	54.3	160.8	439.3	1055.1	3779.6
DOMINICA	1985	114.8	82.2	-	-	-	-	17.2	34.2	104.7	339.0	1214.3	2112.7
DOMINICAN REPUBLIC	1985	73.9	86.9	112.1	10.3	3.3	5.6	11.6	36.1	128.0	305.7	740.7	2902.8
ECUADOR	1987	54.2	58.3	23.1	4.0	2.5	5.8	12.3	26.8	67.1	179.5	488.5	2238.2
EL SALVADOR	1984	48.4	56.0	7.9	3.0	3.0	10.1	16.5	33.1	83.5	229.5	559.7	1475.1
GUADELOUPE	1981	125.4	73.9	30.7	10.1	-	2.7	4.8	38.0	101.6	348.6	814.3	2050.0
GUATEMALA	1984	43.9	54.0	-	-	0.7	9.5	15.0	20.9	71.4	172.5	519.3	1921.5
GUYANA	1984	110.7	111.4	25.7	6.0	6.1	7.5	18.8	76.9	252.6	574.1	988.8	2428.6
HONDURAS	1981	39.7	51.8	46.2	12.0	4.4	7.9	14.0	30.1	70.2	162.8	423.6	1588.7
JAMAICA	1984	117.3	85.5	18.2	3.2	4.0	6.7	9.0	34.7	110.9	324.0	929.8	2788.0
MARTINIQUE	1985	100.3	49.3	-	-	3.9	5.3	12.1	23.8	50.7	279.7	411.1	1440.0
MEXICO	1986	61.8	68.7	48.1	4.7	1.7	4.6	11.5	33.0	90.8	248.2	588.1	2424.1
NETHERLANDS ANTILLES (CURACAO)	1981	104.9	74.6	100.0	-	-	-	9.1	50.0	100.0	475.0	700.0	1650.0
PANAMA	1987	72.7	62.8	10.2	5.8	0.7	4.1	6.3	24.4	85.8	192.0	670.4	2275.6
PARAGUAY (AREA OF INFORMATION)	1986	98.4	111.9	25.0	0.7	1.7	3.9	8.6	46.0	120.8	419.1	1138.5	4200.0
PERU	1983	34.4	38.3	21.1	4.7	1.9	4.1	7.4	14.1	38.8	103.8	290.0	1616.2
PUERTO RICO	1987	224.8	118.1	27.4	4.0	1.1	4.3	15.9	64.0	192.8	529.3	1182.7	3470.2
ST. KITTS AND NEVIS	1985	227.1	...	-	-	-	17.6	-	75.8	98.0	1504.4	...	...
SAINT LUCIA	1988	175.4	153.4	113.1	12.5	6.4	-	33.3	109.5	150.2	824.4	1126.8	4700.0
ST. VINCENT & THE GRENADINES	1986	141.1	128.9	-	-	-	8.0	16.2	32.8	400.0	372.3	1448.5	3544.3
SURINAME	1985	124.3	120.9	34.6	15.0	-	2.2	33.3	100.0	235.7	580.0	840.0	3300.0
TRINIDAD AND TOBAGO	1986	182.8	146.9	-	1.7	0.8	2.3	8.9	76.7	275.8	783.6	1563.4	3750.0
UNITED STATES	1987	328.0	134.6	27.8	2.3	1.0	3.5	11.5	55.6	216.6	603.7	1400.7	4157.0
URUGUAY	1987	261.0	112.6	36.7	2.6	1.1	2.4	9.7	54.5	159.6	474.0	1232.2	3451.4
VENEZUELA	1987	82.7	93.7	13.3	1.9	1.3	3.5	12.4	41.3	144.2	420.2	1001.5	2796.5
Female													
ARGENTINA	1986	222.7	92.2	84.0	10.0	2.9	7.1	15.6	35.9	89.1	243.1	758.7	3833.0
BAHAMAS	1987	96.2	63.9	46.0	8.7	-	4.0	4.8	42.6	89.2	289.3	661.2	1725.4
BARBADOS	1988	198.2	...	-	-	4.1	3.8	13.4	35.2	88.2	127.5	587.0	2563.4
BELIZE	1986	57.5	36.3	33.3	12.7	5.5	5.6	-	11.2	15.3	62.4	336.4	1551.7
BRAZIL (AREA OF INFORMATION)	1986	85.8	71.6	10.5	2.2	1.6	5.2	13.2	40.4	103.7	262.2	680.7	2386.1
CANADA	1988	199.3	57.6	4.3	1.3	0.6	1.0	2.0	8.8	37.6	140.4	551.3	2876.8
CHILE	1987	88.8	49.1	3.9	1.7	0.5	2.1	3.5	11.9	36.9	126.9	474.8	2296.1
COLOMBIA	1984	95.5	86.8	14.3	5.9	2.1	5.5	11.4	39.5	114.0	285.8	759.6	3339.8
COSTA RICA	1988	71.0	60.9	5.1	4.5	0.6	3.3	6.8	14.1	35.5	112.9	574.3	3060.3
CUBA	1988	175.3	85.0	6.6	2.6	1.3	3.8	9.6	28.7	98.1	268.8	765.2	3570.4
DOMINICA	1985	167.1	81.6	-	-	-	-	19.4	-	80.0	372.1	705.9	3361.5
DOMINICAN REPUBLIC	1985	67.5	76.0	123.1	8.5	4.6	8.6	13.3	31.7	92.8	197.1	580.5	2873.9
ECUADOR	1987	53.5	49.9	26.8	3.6	2.3	5.6	9.9	21.9	57.3	134.6	329.3	2135.7
EL SALVADOR	1984	40.1	38.4	4.3	6.0	1.6	8.4	15.9	21.4	60.3	133.1	348.5	1080.1
GUADELOUPE	1981	130.7	58.4	31.0	-	2.6	2.8	13.2	17.9	74.3	192.7	600.0	2066.7
GUATEMALA	1984	38.8	45.0	-	-	1.1	10.8	10.4	27.2	57.1	122.5	416.6	1611.1
GUYANA	1984	76.1	69.5	27.1	2.0	5.5	4.8	11.5	46.3	151.3	296.3	558.0	1862.1
HONDURAS	1981	36.0	44.2	57.2	10.7	3.7	7.7	17.7	21.3	57.1	125.2	320.6	1413.8
JAMAICA	1984	122.8	72.3	11.4	3.3	4.5	7.6	11.2	28.0	90.7	244.3	681.2	2621.6
MARTINIQUE	1985	119.4	43.6	-	-	-	8.0	4.0	31.9	57.0	152.2	414.1	1487.5
MEXICO	1986	63.1	57.5	35.0	4.3	1.7	4.7	10.3	24.0	60.5	159.3	445.4	2424.0
NETHERLANDS ANTILLES (CURACAO)	1981	104.9	64.3	-	12.5	-	-	-	-	133.3	260.0	600.0	2300.0
PANAMA	1987	64.6	53.4	24.9	1.8	0.7	3.8	10.8	18.5	30.2	148.5	491.0	2355.4
PARAGUAY (AREA OF INFORMATION)	1986	91.0	84.4	11.7	5.0	1.4	3.9	9.2	35.0	77.3	211.5	683.2	3929.6
PERU	1983	37.2	35.0	18.9	4.8	1.1	5.1	8.9	15.6	32.5	71.4	216.5	1623.6
PUERTO RICO	1987	177.4	78.6	25.4	2.1	1.5	2.0	10.2	20.0	79.2	263.8	749.5	3226.1
ST. KITTS AND NEVIS	1985	177.9	...	-	-	-	-	-	57.8	-	633.8	...	...
SAINT LUCIA	1988	144.3	94.2	55.0	-	-	13.3	9.6	32.7	97.6	530.5	725.2	3121.0
ST. VINCENT & THE GRENADINES	1986	174.0	124.3	-	-	7.1	-	53.3	115.9	225.8	403.6	1450.0	2913.4
SURINAME	1985	93.7	72.8	-	-	4.5	6.7	15.4	29.4	93.3	333.3	940.0	1800.0
TRINIDAD AND TOBAGO	1986	148.3	99.6	6.3	-	0.8	0.9	10.9	39.3	164.8	370.1	991.5	3416.0
UNITED STATES	1987	304.1	77.0	21.7	2.2	0.9	2.1	5.6	17.1	71.4	242.9	715.2	3393.8
URUGUAY	1987	216.7	66.1	30.5	-	0.4	3.7	3.4	29.3	50.4	177.0	578.7	3026.2
VENEZUELA	1987	70.5	67.9	13.4	2.6	1.3	3.1	7.3	24.0	72.7	230.9	651.6	2695.3

TABLE III-9a(18).

Number of deaths from hypertensive disease (401–405), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	3465	-	-	-	7	16	91	269	623	909	1518	32
BAHAMAS	1987	79	-	1	-	1	2	3	7	12	21	32	-
BARBADOS	1988	69	-	-	-	-	-	3	4	3	10	49	-
BELIZE	1986	15	-	-	-	1	-	-	-	3	4	6	1
BRAZIL (AREA OF INFORMATION)	1986	14629	1	1	13	134	489	1123	1998	3118	3527	4159	66
CANADA	1988	1271	-	-	-	-	2	10	16	92	280	871	-
CHILE	1987	1107	-	-	-	5	3	23	50	132	298	595	1
COLOMBIA	1984	3607	2	4	7	23	68	153	277	534	941	1557	41
COSTA RICA	1988	201	-	-	-	2	1	3	7	21	61	104	2
CUBA	1988	835	-	-	-	2	14	47	105	137	204	328	-
DOMINICA	1985	55	-	-	-	-	1	1	3	9	14	26	1
DOMINICAN REPUBLIC	1985	612	2	-	2	3	10	24	65	83	147	276	-
ECUADOR	1987	590	-	-	-	6	10	19	58	72	114	306	5
EL SALVADOR	1984	45	-	-	1	1	-	3	11	6	11	12	-
GUADELOUPE	1981	161	-	-	-	1	1	3	11	24	44	77	-
GUATEMALA	1984	112	-	-	4	4	8	-	16	16	24	40	-
GUYANA	1984	176	-	-	1	-	2	7	18	41	43	54	10
HONDURAS	1981	76	1	-	-	3	4	5	9	8	18	27	-
JAMAICA	1984	743	-	-	1	3	1	9	46	78	197	402	6
MARTINIQUE	1985	57	-	-	-	-	1	-	2	10	15	29	-
MEXICO	1986	5682	18	4	16	65	103	182	417	741	1138	2967	31
NETHERLANDS ANTILLES (CURACAO)	1981	10	-	-	-	-	-	2	1	1	2	4	-
PANAMA	1987	139	-	-	-	5	4	4	6	23	41	54	2
PARAGUAY (AREA OF INFORMATION)	1986	172	-	-	-	-	3	3	12	33	44	70	7
PERU	1983	654	-	-	1	12	19	20	47	92	117	333	13
PUERTO RICO	1987	851	-	1	-	2	6	29	74	126	225	388	-
ST. VINCENT & THE GRENADINES	1986	89	-	-	-	-	1	2	4	10	33	36	3
SURINAME	1985	39	-	-	-	-	-	1	3	8	13	14	-
TRINIDAD AND TOBAGO	1986	338	-	-	-	-	2	11	37	51	79	157	1
UNITED STATES	1987	31338	3	1	3	31	176	752	1788	4218	7444	16919	3
URUGUAY	1987	412	-	-	-	-	1	8	24	57	110	209	3
VENEZUELA	1987	1948	2	-	3	17	32	92	167	319	482	832	2
Male													
ARGENTINA	1986	1722	-	-	-	3	10	49	172	398	497	580	13
BAHAMAS	1987	35	-	-	-	-	1	1	5	6	12	10	-
BARBADOS	1988	23	-	-	-	-	-	1	3	1	2	16	-
BELIZE	1986	4	-	-	-	-	-	-	-	1	1	2	-
BRAZIL (AREA OF INFORMATION)	1986	7192	-	1	12	63	257	586	1069	1725	1751	1695	33
CANADA	1988	515	-	-	-	-	1	8	9	61	150	286	-
CHILE	1987	492	-	-	-	1	1	11	29	65	155	229	1
COLOMBIA	1984	1638	1	3	2	14	36	67	132	262	432	689	20
COSTA RICA	1988	82	-	-	-	1	-	1	2	12	25	40	1
CUBA	1988	432	-	-	-	2	8	26	59	77	106	154	-
DOMINICA	1985	22	-	-	-	-	1	1	1	3	7	8	1
DOMINICAN REPUBLIC	1985	283	1	-	1	2	1	11	31	47	70	119	-
ECUADOR	1987	268	-	-	-	2	7	6	36	35	63	116	4
EL SALVADOR	1984	24	-	-	-	-	-	2	6	3	7	6	-
GUADELOUPE	1981	56	-	-	-	-	-	-	1	4	10	16	25	-
GUATEMALA	1984	32	-	-	-	-	8	-	4	4	4	12	-
GUYANA	1984	87	-	-	-	-	1	6	5	23	25	23	4
HONDURAS	1981	28	1	-	-	1	2	1	2	3	7	11	-
JAMAICA	1984	302	-	-	1	2	-	5	22	27	90	153	2
MARTINIQUE	1985	20	-	-	-	-	1	-	1	6	3	9	-
MEXICO	1986	2143	15	1	9	32	49	75	180	328	450	995	9
NETHERLANDS ANTILLES (CURACAO)	1981	3	-	-	-	-	-	2	-	1	-	-	-
PANAMA	1987	66	-	-	-	3	3	3	4	8	22	21	2
PARAGUAY (AREA OF INFORMATION)	1986	81	-	-	-	-	2	-	6	16	24	29	4
PERU	1983	258	-	-	1	5	10	7	21	44	45	121	4
PUERTO RICO	1987	449	-	-	-	2	2	20	39	72	132	182	-
ST. VINCENT & THE GRENADINES	1986	38	-	-	-	-	-	1	2	3	16	15	1
SURINAME	1985	20	-	-	-	-	-	-	2	4	7	7	-
TRINIDAD AND TOBAGO	1986	168	-	-	-	-	-	5	20	32	44	67	-
UNITED STATES	1987	13382	1	-	1	19	113	518	1133	2535	3726	5335	1
URUGUAY	1987	181	-	-	-	-	-	3	12	34	55	75	2
VENEZUELA	1987	919	1	-	2	8	16	46	93	180	260	312	1
Female													
ARGENTINA	1986	1730	-	-	-	4	6	41	97	224	412	931	15
BAHAMAS	1987	44	-	1	-	1	1	2	2	6	9	22	-
BARBADOS	1988	46	-	-	-	-	-	2	1	2	8	33	-
BELIZE	1986	11	-	-	-	1	-	-	-	2	3	4	1
BRAZIL (AREA OF INFORMATION)	1986	7427	1	-	1	71	232	536	925	1391	1775	2463	32
CANADA	1988	756	-	-	-	-	1	2	7	31	130	585	-
CHILE	1987	615	-	-	-	4	2	12	21	67	143	366	-
COLOMBIA	1984	1969	1	1	5	9	32	86	145	272	509	888	21
COSTA RICA	1988	119	-	-	-	1	1	2	5	9	36	64	1
CUBA	1988	403	-	-	-	-	6	21	46	60	98	172	-
DOMINICA	1985	33	-	-	-	-	-	-	2	6	7	18	-
DOMINICAN REPUBLIC	1985	329	1	-	1	1	9	13	34	36	77	157	-
ECUADOR	1987	321	-	-	-	4	3	13	22	37	51	190	1
EL SALVADOR	1984	21	-	-	1	1	-	1	5	3	4	6	-
GUADELOUPE	1981	105	-	-	-	1	1	2	7	14	28	52	-
GUATEMALA	1984	80	-	-	4	4	-	-	12	12	20	28	-
GUYANA	1984	89	-	-	1	-	1	1	13	18	18	31	6
HONDURAS	1981	48	-	-	-	2	2	4	7	6	11	16	-
JAMAICA	1984	441	-	-	-	1	1	4	24	51	107	249	4
MARTINIQUE	1985	37	-	-	-	-	-	-	1	4	12	20	-
MEXICO	1986	3539	3	3	7	33	54	107	237	413	688	1972	22
NETHERLANDS ANTILLES (CURACAO)	1981	7	-	-	-	-	-	-	1	-	2	4	-
PANAMA	1987	73	-	-	-	2	1	1	2	15	19	33	-
PARAGUAY (AREA OF INFORMATION)	1986	91	-	-	-	-	1	3	6	17	20	41	3
PERU	1983	396	-	-	-	7	9	13	26	48	72	212	9
PUERTO RICO	1987	402	-	1	-	-	4	9	35	54	93	206	-
ST. VINCENT & THE GRENADINES	1986	51	-	-	-	-	1	1	2	7	17	21	2
SURINAME	1985	19	-	-	-	-	-	1	1	4	6	7	-
TRINIDAD AND TOBAGO	1986	170	-	-	-	-	2	6	17	19	35	90	1
UNITED STATES	1987	17956	2	1	2	12	63	234	655	1683	3718	11584	2
URUGUAY	1987	231	-	-	-	-	1	5	12	23	55	134	1
VENEZUELA	1987	1029	1	-	1	9	16	46	74	139	222	520	1

TABLE III-9b(18).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from hypertensive disease (401–405), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	11.3	5.3	-	-	-	0.1	0.4	2.5	8.8	23.9	52.8	167.7
BAHAMAS	1987	31.7	23.5	-	4.4	-	1.9	4.8	11.0	35.8	88.4	240.5	724.0
BARBADOS	1988	26.8	...	-	-	-	-	-	11.4	21.7	17.3	65.8	441.4
BELIZE	1986	9.0	5.6	-	-	-	2.8	-	-	-	32.2	63.1	177.5
BRAZIL (AREA OF INFORMATION)	1986	10.6	9.3	0.0	0.0	0.0	0.5	2.2	7.8	19.5	43.5	86.2	222.6
CANADA	1988	4.9	1.6	-	-	-	-	0.0	0.3	0.6	3.9	16.8	82.9
CHILE	1987	8.8	5.7	-	-	-	0.2	0.1	1.5	4.7	17.0	64.3	242.9
COLOMBIA	1984	12.8	12.9	0.2	0.1	0.1	0.4	1.5	5.4	14.5	39.9	120.2	534.7
COSTA RICA	1988	7.0	6.6	-	-	-	0.3	0.2	1.0	3.6	15.9	81.3	304.1
CUBA	1988	8.2	4.5	-	-	-	0.1	1.0	3.7	11.0	19.4	40.1	111.5
DOMINICA	1985	72.3	45.2	-	-	-	-	9.1	17.3	68.0	229.6	451.6	1368.4
DOMINICAN REPUBLIC	1985	9.5	10.9	1.8	-	0.1	0.2	1.0	4.2	16.4	32.6	115.3	413.2
ECUADOR	1987	5.9	6.0	-	-	-	0.3	0.7	2.1	9.3	17.5	46.2	258.2
EL SALVADOR	1984	0.9	1.1	-	-	0.1	0.1	-	0.7	4.0	3.1	10.2	22.3
GUADELOUPE	1981	49.2	25.0	-	-	-	1.4	2.3	9.2	39.9	110.1	275.0	770.0
GUATEMALA	1984	1.4	1.7	-	-	0.2	0.3	0.8	-	3.3	4.9	15.2	57.9
GUYANA	1984	18.8	17.5	-	-	0.4	-	1.3	8.4	30.6	94.9	161.7	504.7
HONDURAS	1981	2.0	2.7	0.6	-	-	0.4	0.9	1.6	4.0	6.2	23.5	100.4
JAMAICA	1984	32.3	20.5	-	-	0.2	0.5	0.3	5.6	33.6	63.4	219.9	783.6
MARTINIQUE	1985	17.4	7.0	-	-	-	-	2.0	-	6.8	39.1	79.4	229.1
MEXICO	1986	7.0	7.0	0.7	0.0	0.1	0.4	0.9	2.5	8.4	22.9	61.3	291.2
NETHERLANDS ANTILLES (CURACAO)	1981	6.1	4.3	-	-	-	-	-	11.8	8.3	11.1	33.3	100.0
PANAMA	1987	6.1	5.1	-	-	-	1.0	1.2	1.7	3.9	21.2	59.5	167.7
PARAGUAY (AREA OF INFORMATION)	1986	7.6	7.6	-	-	-	-	0.9	1.5	9.0	33.8	78.2	283.4
PERU	1983	3.5	3.6	-	-	0.0	0.3	0.7	1.1	3.6	10.9	24.3	173.6
PUERTO RICO	1987	23.9	12.0	-	0.3	-	0.3	1.2	8.7	23.6	51.4	122.1	352.4
ST. VINCENT & THE GRENADINES	1986	84.7	62.7	-	-	-	-	7.3	30.8	74.8	243.3	919.2	1747.6
SURINAME	1985	10.4	8.8	-	-	-	-	-	3.1	10.3	42.1	130.0	233.3
TRINIDAD AND TOBAGO	1986	28.1	20.6	-	-	-	-	1.0	8.4	43.3	79.7	178.7	733.6
UNITED STATES	1987	12.9	4.4	0.1	0.0	0.0	0.1	0.4	2.2	7.7	19.2	42.1	139.1
URUGUAY	1987	13.5	4.9	-	-	-	-	0.2	2.3	7.0	18.6	53.1	171.5
VENEZUELA	1987	10.7	11.2	0.4	-	0.1	0.5	1.1	4.9	14.1	39.9	114.2	417.3
Male													
ARGENTINA	1986	11.3	6.0	-	-	-	0.1	0.4	2.6	11.4	32.0	65.0	158.9
BAHAMAS	1987	28.4	24.3	-	-	-	-	4.8	7.6	52.8	95.1	308.5	632.9
BARBADOS	1988	18.9	...	-	-	-	-	-	8.2	36.6	14.1	33.3	400.0
BELIZE	1986	4.8	3.2	-	-	-	-	-	-	-	22.2	39.6	122.0
BRAZIL (AREA OF INFORMATION)	1986	10.4	9.5	-	0.0	0.1	0.4	2.3	8.2	21.1	49.1	89.1	197.4
CANADA	1988	4.0	1.6	-	-	-	-	0.0	0.4	0.7	5.3	20.0	71.3
CHILE	1987	7.9	6.1	-	-	-	0.1	0.1	1.5	5.6	18.0	76.7	244.4
COLOMBIA	1984	11.6	13.1	0.2	0.2	0.1	0.4	1.6	4.6	13.9	41.2	120.9	553.8
COSTA RICA	1988	5.7	6.7	-	-	-	0.3	-	0.7	2.1	18.4	70.8	279.7
CUBA	1988	8.4	4.7	-	-	-	0.2	1.1	4.0	12.2	21.8	41.1	102.9
DOMINICA	1985	57.4	42.4	-	-	-	-	17.2	34.2	52.4	169.5	500.0	1126.8
DOMINICAN REPUBLIC	1985	8.8	10.3	1.7	-	0.1	0.3	0.2	3.9	15.9	36.0	108.0	373.0
ECUADOR	1987	5.4	5.8	-	-	-	0.2	1.0	1.3	11.6	17.4	53.6	219.3
EL SALVADOR	1984	1.0	1.2	-	-	-	-	-	1.0	4.4	3.2	14.7	27.1
GUADELOUPE	1981	35.1	19.8	-	-	-	-	-	6.3	31.3	91.7	228.6	625.0
GUATEMALA	1984	0.8	1.0	-	-	-	-	1.6	-	1.7	2.5	5.1	36.3
GUYANA	1984	18.5	18.0	-	-	-	-	1.3	14.9	17.5	106.5	195.3	489.4
HONDURAS	1981	1.5	2.1	1.2	-	-	0.3	0.9	0.6	1.8	4.1	18.8	88.7
JAMAICA	1984	26.5	19.0	-	-	0.4	0.7	-	6.7	34.4	47.3	217.9	705.1
MARTINIQUE	1985	12.5	8.3	-	-	-	-	4.0	-	7.2	50.8	33.3	180.0
MEXICO	1986	5.9	5.9	1.1	0.0	0.1	0.4	0.8	2.1	7.5	21.4	53.1	225.1
NETHERLANDS ANTILLES (CURACAO)	1981	3.7	3.8	-	-	-	-	-	25.0	-	25.0	-	-
PANAMA	1987	5.7	4.8	-	-	-	1.2	1.7	2.5	5.0	14.5	62.0	134.6
PARAGUAY (AREA OF INFORMATION)	1986	7.1	7.8	-	-	-	-	1.2	-	9.2	34.0	92.3	276.2
PERU	1983	2.7	3.2	-	-	0.0	0.3	0.7	0.8	3.2	10.7	20.1	146.5
PUERTO RICO	1987	25.9	13.9	-	-	-	0.8	0.8	9.9	26.7	63.0	152.6	361.1
ST. VINCENT & THE GRENADINES	1986	74.5	62.8	-	-	-	-	-	32.8	88.9	159.6	1006.3	1898.7
SURINAME	1985	10.8	10.2	-	-	-	-	-	-	14.3	40.0	140.0	359.0
TRINIDAD AND TOBAGO	1986	28.0	22.5	-	-	-	-	-	7.7	48.0	104.9	206.6	728.3
UNITED STATES	1987	11.3	4.8	0.1	-	0.0	0.1	0.5	3.1	10.0	24.5	47.6	124.2
URUGUAY	1987	12.0	5.0	-	-	-	-	-	1.7	7.1	23.3	58.9	157.2
VENEZUELA	1987	10.0	11.3	0.4	-	0.1	0.4	1.1	4.8	15.7	45.6	131.1	364.9
Female													
ARGENTINA	1986	11.2	4.6	-	-	-	0.2	0.3	2.2	6.3	16.5	43.1	172.4
BAHAMAS	1987	35.0	22.7	-	8.7	-	4.0	4.8	14.2	19.8	82.6	186.0	774.6
BARBADOS	1988	34.0	...	-	-	-	-	-	14.1	9.8	19.6	87.0	484.8
BELIZE	1986	13.2	7.8	-	-	-	5.6	-	-	-	41.6	91.7	229.9
BRAZIL (AREA OF INFORMATION)	1986	10.7	9.0	0.0	-	0.0	0.5	2.1	7.3	18.0	38.1	83.5	244.0
CANADA	1988	5.7	1.5	-	-	-	-	0.0	0.1	0.5	2.5	14.1	90.1
CHILE	1987	9.7	5.4	-	-	-	0.3	0.2	1.5	3.8	16.2	54.7	241.9
COLOMBIA	1984	14.1	12.8	0.2	0.1	0.2	0.3	1.4	6.1	15.2	38.8	119.6	521.1
COSTA RICA	1988	8.4	7.1	-	-	-	0.3	0.4	1.4	5.2	13.4	90.7	321.6
CUBA	1988	8.1	4.3	-	-	-	-	0.8	3.3	9.7	17.0	39.1	120.5
DOMINICA	1985	87.5	46.1	-	-	-	-	-	-	80.0	279.1	411.8	1512.6
DOMINICAN REPUBLIC	1985	10.3	11.6	1.8	-	0.1	0.1	1.9	4.6	17.0	29.0	122.8	449.9
ECUADOR	1987	6.5	6.1	-	-	-	0.4	0.4	2.8	7.0	17.7	39.5	289.6
EL SALVADOR	1984	0.9	0.9	-	-	0.2	0.2	-	0.5	3.6	3.0	6.7	19.0
GUADELOUPE	1981	62.7	29.2	-	-	-	2.8	4.4	11.9	47.3	128.4	311.1	866.7
GUATEMALA	1984	2.1	2.4	-	-	0.4	0.5	-	-	5.0	7.3	25.1	77.8
GUYANA	1984	19.1	17.0	-	-	0.9	-	1.3	2.3	42.8	83.3	130.4	534.5
HONDURAS	1981	2.5	3.3	-	-	-	0.6	0.9	2.5	6.1	8.2	28.0	110.3
JAMAICA	1984	38.0	21.7	-	-	-	0.4	0.6	4.7	33.0	77.4	221.5	841.2
MARTINIQUE	1985	22.0	7.5	-	-	-	-	-	-	6.3	29.0	121.2	250.0
MEXICO	1986	8.7	7.9	0.2	0.1	0.1	0.4	0.9	2.9	9.2	24.2	68.2	341.9
NETHERLANDS ANTILLES (CURACAO)	1981	8.5	5.1	-	-	-	-	-	-	16.7	-	66.7	200.0
PANAMA	1987	6.5	5.5	-	-	-	0.8	0.6	0.9	2.6	28.2	56.9	198.8
PARAGUAY (AREA OF INFORMATION)	1986	8.0	7.5	-	-	-	-	0.6	2.9	8.7	33.6	66.0	286.7
PERU	1983	4.3	4.1	-	-	-	0.4	0.7	1.4	4.0	11.1	28.1	194.1
PUERTO RICO	1987	22.0	10.4	-	0.7	-	-	1.5	3.9	20.8	41.3	95.1	345.1
ST. VINCENT & THE GRENADINES	1986	94.4	63.2	-	-	-	-	13.3	29.0	64.5	313.9	850.0	1655.5
SURINAME	1985	10.0	8.0	-	-	-	-	-	5.9	6.7	44.4	120.0	175.0
TRINIDAD AND TOBAGO	1986	28.2	18.8	-	-	-	-	2.0	9.1	38.9	56.7	149.6	737.7
UNITED STATES	1987	14.4	3.9	0.1	0.0	0.0	0.1	0.3	1.3	5.5	14.4	37.8	147.2
URUGUAY	1987	14.9	4.8	-	-	-	-	0.5	2.8	6.9	14.3	48.4	180.8
VENEZUELA	1987	11.4	10.9	0.4	-	0.0	0.5	1.1	5.0	12.5	34.4	99.3	456.5

TABLE III-9a(19).

Number of deaths from ischemic heart disease (410–414), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	23840	7	10	6	45	115	633	1962	4342	6409	10128	183
BAHAMAS	1987	134	-	-	-	-	1	5	18	29	51	30	-
BARBADOS	1988	230	-	-	-	1	2	4	15	19	64	125	-
BELIZE	1986	30	-	-	-	-	2	-	-	4	6	18	-
BRAZIL (AREA OF INFORMATION)	1986	62543	5	-	10	228	1113	3633	7710	13368	16279	19953	244
CANADA	1988	46556	2	1	-	11	104	628	1975	5906	11987	25936	6
CHILE	1987	7108	-	1	1	2	16	76	330	885	1929	3864	4
COLOMBIA	1984	13648	-	-	10	108	239	584	1453	2605	3666	4794	189
COSTA RICA	1988	1592	-	1	-	2	19	38	89	188	401	847	7
CUBA	1988	16990	-	-	-	20	82	370	958	2116	4062	9375	7
DOMINICA	1985	18	-	-	-	-	-	-	1	3	5	9	-
DOMINICAN REPUBLIC	1985	1735	8	1	4	17	49	97	222	333	353	651	-
ECUADOR	1987	1655	-	3	5	25	53	79	153	253	363	711	10
EL SALVADOR	1984	854	-	-	6	32	44	48	83	148	216	262	15
GUADELOUPE	1981	57	-	-	-	-	-	3	2	14	20	18	-
GUATEMALA	1984	1152	-	-	-	36	40	88	136	164	296	392	-
GUYANA	1984	259	-	-	1	1	6	20	47	67	62	47	8
HONDURAS	1981	134	2	-	-	1	9	4	16	26	46	30	-
JAMAICA	1984	800	-	-	1	2	10	13	40	125	234	370	5
MARTINIQUE	1985	54	-	-	-	-	2	2	5	12	16	17	-
MEXICO	1986	19683	32	19	37	144	373	814	1778	3251	4506	8625	104
NETHERLANDS ANTILLES (CURACAO)	1981	62	-	-	-	-	1	-	3	15	13	30	-
PANAMA	1987	1069	-	-	-	4	5	23	65	121	295	541	15
PARAGUAY (AREA OF INFORMATION)	1986	830	-	-	-	1	7	33	65	147	193	377	7
PERU	1983	2332	-	5	15	36	63	72	173	314	503	1097	54
PUERTO RICO	1987	4154	1	-	-	6	11	86	251	609	1081	2083	26
ST. VINCENT & THE GRENADINES	1986	37	-	-	-	-	-	1	9	5	7	15	-
SURINAME	1985	203	-	-	-	1	4	14	33	55	37	58	1
TRINIDAD AND TOBAGO	1986	1309	-	-	-	-	5	49	129	272	403	449	2
UNITED STATES	1987	512138	26	11	15	130	1212	7124	21406	61349	123611	297197	57
URUGUAY	1987	3959	-	-	1	3	2	68	195	571	1045	2053	21
VENEZUELA	1987	8128	4	2	1	23	109	366	835	1718	2122	2927	21
Male													
ARGENTINA	1986	14480	3	8	3	27	80	498	1604	3370	4188	4593	106
BAHAMAS	1987	78	-	-	-	-	1	4	14	16	28	15	-
BARBADOS	1988	117	-	-	-	-	1	2	11	11	35	57	-
BELIZE	1986	15	-	-	-	-	2	-	-	3	2	8	-
BRAZIL (AREA OF INFORMATION)	1986	37027	3	-	8	145	774	2600	5493	9055	9664	9137	148
CANADA	1988	26606	1	-	-	6	87	539	1632	4551	7938	11847	5
CHILE	1987	3709	-	-	1	1	11	61	238	596	1135	1663	3
COLOMBIA	1984	7707	-	-	4	67	167	360	900	1580	2135	2389	105
COSTA RICA	1988	854	-	-	-	2	15	30	70	140	247	444	6
CUBA	1988	9693	-	-	-	13	58	271	650	1342	2409	4945	5
DOMINICA	1985	7	-	-	-	-	-	-	1	1	3	2	-
DOMINICAN REPUBLIC	1985	1002	7	1	1	7	24	55	134	220	221	332	-
ECUADOR	1987	932	-	1	2	13	31	54	97	150	219	361	4
EL SALVADOR	1984	502	-	-	4	17	26	33	47	100	132	134	9
GUADELOUPE	1981	37	-	-	-	-	-	2	2	11	12	10	-
GUATEMALA	1984	700	-	-	-	32	24	48	76	120	180	220	-
GUYANA	1984	193	-	-	-	1	5	15	38	53	46	30	5
HONDURAS	1981	80	1	-	-	1	4	2	12	15	32	13	-
JAMAICA	1984	411	-	-	1	2	8	6	18	71	132	172	1
MARTINIQUE	1985	32	-	-	-	-	1	1	-	9	11	10	-
MEXICO	1986	11340	18	10	20	81	254	588	1271	2222	2670	4147	59
NETHERLANDS ANTILLES (CURACAO)	1981	37	-	-	-	-	1	-	2	11	7	16	-
PANAMA	1987	601	-	-	-	4	3	15	51	76	181	260	11
PARAGUAY (AREA OF INFORMATION)	1986	471	-	-	-	1	4	23	40	103	121	175	4
PERU	1983	1317	-	3	12	16	32	44	121	220	314	528	27
PUERTO RICO	1987	2376	-	-	-	5	7	70	185	404	647	1034	24
ST. VINCENT & THE GRENADINES	1986	17	-	-	-	-	-	-	4	3	3	7	-
SURINAME	1985	123	-	-	-	-	4	11	23	39	20	26	-
TRINIDAD AND TOBAGO	1986	754	-	-	-	-	4	34	84	181	241	208	2
UNITED STATES	1987	267757	13	9	3	93	941	5801	16668	43712	77350	123135	32
URUGUAY	1987	2272	-	-	-	-	2	53	158	425	712	909	13
VENEZUELA	1987	4753	2	1	-	16	83	267	595	1161	1257	1356	15
Female													
ARGENTINA	1986	9243	4	2	2	18	34	131	346	955	2193	5499	59
BAHAMAS	1987	56	-	-	-	-	-	1	4	13	23	15	-
BARBADOS	1988	113	-	-	-	1	1	2	4	8	29	68	-
BELIZE	1986	15	-	-	-	-	-	-	-	1	4	10	-
BRAZIL (AREA OF INFORMATION)	1986	25466	2	-	2	83	339	1030	2212	4304	6604	10798	92
CANADA	1988	19950	1	1	-	5	17	89	343	1355	4049	14089	1
CHILE	1987	3399	-	1	-	1	5	15	92	289	794	2201	1
COLOMBIA	1984	5941	-	-	6	41	72	224	553	1025	1531	2405	84
COSTA RICA	1988	738	-	1	-	-	4	8	19	48	154	403	1
CUBA	1988	7297	-	-	-	7	24	99	308	774	1653	4430	2
DOMINICA	1985	11	-	-	-	-	-	-	-	2	2	7	-
DOMINICAN REPUBLIC	1985	733	1	-	3	10	25	42	88	113	132	319	-
ECUADOR	1987	723	-	2	3	12	22	25	56	103	144	350	6
EL SALVADOR	1984	352	-	-	2	15	18	15	36	48	84	128	6
GUADELOUPE	1981	20	-	-	-	-	-	1	-	3	6	8	-
GUATEMALA	1984	452	-	-	-	4	16	40	60	44	116	172	-
GUYANA	1984	66	-	-	1	-	1	5	9	14	16	17	3
HONDURAS	1981	54	1	-	-	-	5	2	4	11	14	17	-
JAMAICA	1984	389	-	-	-	-	2	7	22	54	102	198	4
MARTINIQUE	1985	22	-	-	-	-	1	1	5	3	5	7	-
MEXICO	1986	8343	14	9	17	63	119	226	507	1029	1836	4478	45
NETHERLANDS ANTILLES (CURACAO)	1981	25	-	-	-	-	-	-	1	4	6	14	-
PANAMA	1987	468	-	-	-	-	2	8	14	45	114	281	4
PARAGUAY (AREA OF INFORMATION)	1986	359	-	-	-	-	3	10	25	44	72	202	3
PERU	1983	1015	-	2	3	20	31	28	52	94	189	569	27
PUERTO RICO	1987	1778	1	-	-	1	4	16	68	205	434	1049	2
ST. VINCENT & THE GRENADINES	1986	20	-	-	-	-	-	1	5	2	4	8	-
SURINAME	1985	80	-	-	-	1	-	3	10	16	17	32	1
TRINIDAD AND TOBAGO	1986	555	-	-	-	-	1	15	45	91	162	241	-
UNITED STATES	1987	244381	13	2	12	37	271	1323	4738	17637	46261	174062	25
URUGUAY	1987	1687	-	-	1	3	-	15	37	146	333	1144	8
VENEZUELA	1987	3375	2	1	1	7	26	99	240	557	865	1571	6

TABLE III-9b(19).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from ischemic heart disease (410–414), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	77.6	36.6	1.0	0.4	0.1	0.9	2.6	17.2	64.1	166.7	372.5	1119.0
BAHAMAS	1987	53.8	40.4	-	-	-	-	2.4	18.4	92.0	213.7	584.2	678.7
BARBADOS	1988	89.5	...	-	-	-	1.9	4.5	15.2	81.5	109.8	421.1	1126.1
BELIZE	1986	18.0	11.6	-	-	-	-	8.2	-	-	42.9	94.6	532.5
BRAZIL (AREA OF INFORMATION)	1986	45.2	39.4	0.1	-	0.0	0.8	5.1	25.1	75.4	186.6	397.9	1068.1
CANADA	1988	178.4	64.8	0.5	0.1	-	0.3	2.2	16.8	75.8	249.3	717.9	2468.2
CHILE	1987	56.7	36.3	-	0.1	0.0	0.1	0.8	4.9	31.0	114.3	415.9	1577.1
COLOMBIA	1984	48.6	48.0	-	-	0.2	1.7	5.3	20.5	76.3	194.8	468.3	1646.3
COSTA RICA	1988	55.5	53.4	-	0.3	-	0.3	4.0	13.3	46.4	142.0	534.7	2476.6
CUBA	1988	167.3	81.3	-	-	-	0.9	5.6	28.8	100.1	299.7	798.3	3206.2
DOMINICA	1985	23.7	14.5	-	-	-	-	-	-	22.7	76.5	161.3	473.7
DOMINICAN REPUBLIC	1985	27.0	31.0	7.1	0.1	0.2	1.2	5.1	17.1	56.1	130.7	276.9	974.6
ECUADOR	1987	16.7	16.8	-	0.2	0.2	1.2	3.7	8.5	24.5	61.8	147.2	600.0
EL SALVADOR	1984	18.0	19.0	-	-	0.5	3.4	6.8	11.9	33.1	76.0	200.9	487.9
GUADELOUPE	1981	17.4	9.5	-	-	-	-	-	9.2	7.2	64.2	125.0	180.0
GUATEMALA	1984	14.9	17.8	-	-	-	2.4	4.0	13.6	28.4	50.4	187.9	567.3
GUYANA	1984	27.7	26.9	-	-	0.4	0.5	3.8	24.0	79.8	155.1	233.1	439.3
HONDURAS	1981	3.5	4.5	1.2	-	-	0.1	1.9	1.3	7.0	17.8	60.1	111.5
JAMAICA	1984	34.8	22.7	-	-	0.2	0.4	3.0	8.1	29.2	101.6	261.2	721.2
MARTINIQUE	1985	16.5	8.1	-	-	-	-	4.0	5.6	16.9	46.9	84.7	130.8
MEXICO	1986	24.2	24.7	1.2	0.2	0.2	0.8	3.2	11.3	35.7	100.4	242.7	846.6
NETHERLANDS ANTILLES (CURACAO)	1981	37.8	24.0	-	-	-	-	4.5	-	25.0	166.7	216.7	750.0
PANAMA	1987	47.0	39.2	-	-	-	0.8	1.5	9.9	41.8	111.6	428.2	1680.1
PARAGUAY (AREA OF INFORMATION)	1986	36.5	38.4	-	-	-	0.2	2.0	16.3	48.5	150.6	342.8	1526.3
PERU	1983	12.5	12.8	-	0.2	0.3	1.0	2.3	4.0	13.2	37.2	104.7	571.9
PUERTO RICO	1987	116.9	55.8	1.6	-	-	0.9	2.1	19.9	79.9	248.5	586.5	1891.9
ST. VINCENT & THE GRENADINES	1986	35.2	32.7	-	-	-	-	-	15.4	168.2	121.7	195.0	728.2
SURINAME	1985	54.1	47.8	-	-	-	1.1	8.0	43.8	113.8	289.5	370.0	966.7
TRINIDAD AND TOBAGO	1986	108.7	80.6	-	-	-	-	2.5	37.3	151.1	425.0	901.6	2098.1
UNITED STATES	1987	210.4	67.2	0.7	0.1	0.0	0.3	2.8	20.8	92.0	278.6	699.6	2442.6
URUGUAY	1987	129.5	46.5	-	-	0.2	0.6	0.5	19.4	56.8	186.2	504.5	1685.0
VENEZUELA	1987	44.5	46.8	0.8	0.1	0.0	0.6	3.9	19.5	70.6	215.1	502.9	1467.9
Male													
ARGENTINA	1986	95.0	51.5	0.9	0.6	0.1	1.1	3.6	26.9	106.2	270.9	548.0	1258.4
BAHAMAS	1987	63.3	54.3	-	-	-	-	4.8	30.4	147.8	253.6	719.8	949.4
BARBADOS	1988	96.1	...	-	-	-	-	4.5	16.4	134.1	154.9	583.3	1425.0
BELIZE	1986	18.0	12.6	-	-	-	-	16.5	-	-	66.5	85.1	487.8
BRAZIL (AREA OF INFORMATION)	1986	53.6	48.7	0.1	-	0.0	1.0	7.0	36.3	108.2	257.6	491.7	1084.3
CANADA	1988	205.8	90.3	0.5	-	-	0.3	3.7	28.7	124.6	397.7	1059.5	2952.9
CHILE	1987	58.8	45.9	-	-	0.1	0.1	1.0	8.1	46.2	164.8	561.3	1774.8
COLOMBIA	1984	54.6	59.5	-	-	0.1	2.1	7.3	24.8	94.7	248.2	597.5	1977.6
COSTA RICA	1988	65.9	71.1	-	-	-	0.6	6.2	20.8	73.0	215.1	699.7	3104.9
CUBA	1988	187.5	93.5	-	-	-	1.1	7.8	41.6	134.7	379.1	934.1	3303.3
DOMINICA	1985	18.3	14.7	-	-	-	-	-	-	52.4	56.5	214.3	281.7
DOMINICAN REPUBLIC	1985	31.0	36.3	12.1	0.3	0.1	1.0	5.0	19.5	88.6	168.6	341.0	1040.8
ECUADOR	1987	18.7	20.2	-	0.2	0.2	1.3	4.3	11.7	31.3	74.6	186.4	682.4
EL SALVADOR	1984	21.1	24.6	-	-	0.6	3.6	8.0	16.3	34.4	106.3	276.7	606.3
GUADELOUPE	1981	23.2	14.1	-	-	-	-	-	12.7	15.6	100.9	179.4	250.0
GUATEMALA	1984	17.9	21.9	-	-	-	4.2	4.7	14.8	31.5	73.9	231.4	664.7
GUYANA	1984	41.1	41.7	-	-	-	0.9	6.3	37.2	133.3	245.4	359.4	612.2
HONDURAS	1981	4.2	5.4	1.2	-	-	0.3	1.7	1.3	10.5	20.7	85.8	104.8
JAMAICA	1984	36.1	26.2	-	-	0.4	0.7	4.8	8.0	28.1	124.3	319.6	792.6
MARTINIQUE	1985	20.1	9.8	-	-	-	-	4.0	6.0	-	76.3	122.2	200.0
MEXICO	1986	27.9	31.5	1.4	0.2	0.2	0.9	4.4	16.5	52.8	144.7	314.8	938.0
NETHERLANDS ANTILLES (CURACAO)	1981	45.1	31.3	-	-	-	-	9.1	-	33.3	275.0	233.3	800.0
PANAMA	1987	51.9	44.3	-	-	-	1.6	1.7	12.6	64.3	137.7	509.9	1666.7
PARAGUAY (AREA OF INFORMATION)	1986	41.5	47.8	-	-	0.4	2.3	2.3	23.0	61.2	219.1	485.4	1666.7
PERU	1983	14.0	15.7	-	0.3	0.5	0.8	2.3	4.8	18.5	53.8	140.1	639.2
PUERTO RICO	1987	137.3	71.4	-	-	-	1.4	2.9	34.7	126.5	353.5	748.0	2051.6
ST. VINCENT & THE GRENADINES	1986	33.3	35.3	-	-	-	-	-	-	177.8	159.6	188.7	886.1
SURINAME	1985	66.5	64.7	-	-	-	-	16.7	73.3	164.3	390.0	400.0	1300.0
TRINIDAD AND TOBAGO	1988	125.6	101.1	-	-	-	-	4.0	52.1	201.4	593.4	1131.5	2260.9
UNITED STATES	1987	225.9	91.2	0.7	0.1	0.0	0.5	4.3	34.3	147.4	421.7	988.6	2866.9
URUGUAY	1987	151.1	65.7	-	-	-	-	1.0	30.7	93.7	290.7	762.2	1904.9
VENEZUELA	1987	51.5	58.3	0.8	0.1	-	0.8	5.8	28.1	100.7	294.2	633.9	1586.0
Female													
ARGENTINA	1986	59.7	23.3	1.2	0.1	0.1	0.8	1.5	7.2	22.4	70.2	229.3	1018.1
BAHAMAS	1987	44.5	29.1	-	-	-	-	-	7.1	39.6	179.1	475.2	528.2
BARBADOS	1988	83.6	...	-	-	-	3.8	4.5	14.1	39.2	78.4	315.2	957.7
BELIZE	1986	18.0	10.5	-	-	-	-	-	-	-	20.8	122.3	574.7
BRAZIL (AREA OF INFORMATION)	1986	36.7	30.4	0.1	-	0.0	0.6	3.1	14.1	43.0	118.0	310.7	1089.6
CANADA	1988	151.6	43.3	0.5	0.1	-	0.2	0.7	4.8	26.4	110.7	439.8	2168.9
CHILE	1987	53.7	28.9	-	0.2	-	0.1	0.5	1.9	16.7	70.0	303.5	1454.7
COLOMBIA	1984	42.4	38.3	-	-	0.2	1.3	3.2	16.0	58.0	146.3	359.8	1411.4
COSTA RICA	1988	45.0	38.4	-	0.6	-	-	1.7	5.6	19.8	71.3	387.9	2025.1
CUBA	1988	146.4	66.8	-	-	-	0.6	3.4	15.6	64.9	219.9	658.8	3104.4
DOMINICA	1985	29.2	13.9	-	-	-	-	-	-	-	93.0	117.6	588.2
DOMINICAN REPUBLIC	1985	23.0	25.7	1.8	-	0.4	1.4	5.2	14.8	43.9	90.9	210.5	914.0
ECUADOR	1987	14.7	13.7	-	0.3	0.2	1.2	3.1	5.4	17.8	49.2	111.5	539.5
EL SALVADOR	1984	14.9	14.3	-	-	0.3	3.2	5.6	7.5	25.9	47.7	140.5	405.1
GUADELOUPE	1981	11.9	5.5	-	-	-	-	-	6.0	-	27.5	88.9	133.3
GUATEMALA	1984	11.8	13.9	-	-	-	0.5	3.2	12.4	25.2	26.9	145.5	477.8
GUYANA	1984	14.2	12.9	-	-	0.9	-	1.3	11.6	29.6	64.8	115.9	293.1
HONDURAS	1981	2.8	3.6	1.3	-	-	-	2.2	1.3	3.5	15.0	35.6	117.2
JAMAICA	1984	33.5	19.8	-	-	-	-	1.2	6.2	30.2	81.9	211.2	668.9
MARTINIQUE	1985	13.1	6.6	-	-	-	-	4.0	5.3	31.6	21.7	50.5	87.5
MEXICO	1986	20.6	18.7	1.1	0.2	0.2	0.7	2.1	6.2	19.7	60.4	182.1	776.5
NETHERLANDS ANTILLES (CURACAO)	1981	30.5	17.8	-	-	-	-	-	-	16.7	80.0	200.0	700.0
PANAMA	1987	42.0	33.9	-	-	-	-	1.2	7.0	18.4	84.6	341.3	1692.8
PARAGUAY (AREA OF INFORMATION)	1986	31.6	30.1	-	-	-	-	1.7	9.7	36.4	87.0	237.6	1422.5
PERU	1983	10.9	10.3	-	0.2	0.1	1.1	2.3	3.1	7.9	21.7	73.7	521.1
PUERTO RICO	1987	97.5	42.1	3.2	-	-	0.3	1.5	6.9	39.3	156.7	443.8	1757.1
ST. VINCENT & THE GRENADINES	1986	37.0	31.1	-	-	-	-	-	29.0	161.3	89.7	200.0	629.9
SURINAME	1985	42.1	32.7	-	-	-	2.2	-	17.6	66.7	177.8	340.0	800.0
TRINIDAD AND TOBAGO	1986	92.0	61.9	-	-	-	-	1.0	22.7	103.0	271.6	692.3	1975.4
UNITED STATES	1987	195.7	47.8	0.7	0.0	0.1	0.2	1.3	7.6	39.6	151.3	469.9	2211.2
URUGUAY	1987	108.5	31.9	-	-	0.4	1.2	-	8.4	21.2	91.0	292.9	1543.4
VENEZUELA	1987	37.3	36.0	0.8	0.1	0.0	0.4	1.9	10.7	40.6	137.8	386.8	1379.3

TABLE III-9a(20).

Number of deaths from cerebrovascular disease (430–438), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	24383	44	38	57	115	273	865	1957	3827	5882	11142	183
BAHAMAS	1987	115	-	1	1	2	2	4	8	19	26	51	1
BARBADOS	1988	274	3	1	-	-	3	1	8	22	54	181	1
BELIZE	1986	63	-	-	-	1	2	4	6	11	14	23	2
BRAZIL (AREA OF INFORMATION)	1986	73887	39	59	161	659	1979	4679	8988	13435	18470	24968	450
CANADA	1988	14078	1	4	3	17	92	207	373	1002	2514	9863	2
CHILE	1987	6526	3	3	5	37	60	154	461	946	1704	3153	-
COLOMBIA	1984	10776	38	25	49	146	267	484	1099	1796	2708	4028	136
COSTA RICA	1988	806	-	2	3	6	11	19	44	104	148	468	1
CUBA	1988	6513	1	1	5	33	64	205	517	893	1461	3329	4
DOMINICA	1985	32	-	-	-	-	1	-	2	3	9	16	1
DOMINICAN REPUBLIC	1985	1726	5	4	3	15	36	81	228	272	414	667	-
ECUADOR	1987	2414	5	6	15	62	68	111	223	345	477	1079	23
EL SALVADOR	1984	869	11	7	24	27	35	44	75	148	184	302	12
GUADELOUPE	1981	202	2	-	1	2	2	6	10	28	52	99	-
GUATEMALA	1984	1008	-	-	4	24	60	48	80	168	240	380	4
GUYANA	1984	597	3	1	5	11	7	22	81	162	157	135	13
HONDURAS	1981	498	11	15	16	26	32	32	36	61	101	168	-
JAMAICA	1984	1953	1	-	2	6	15	39	91	241	526	1013	19
MARTINIQUE	1985	362	1	-	1	-	4	3	22	45	82	202	2
MEXICO	1986	17720	100	50	115	266	380	642	1346	2265	3513	8953	90
NETHERLANDS ANTILLES (CURACAO)	1981	93	-	-	-	2	-	-	8	13	22	48	-
PANAMA	1987	874	2	1	2	-	7	19	45	110	236	444	8
PARAGUAY (AREA OF INFORMATION)	1986	1330	1	-	1	10	17	43	104	198	340	593	23
PERU	1983	2459	13	12	30	70	66	115	194	336	549	1021	53
PUERTO RICO	1987	1358	7	-	2	3	12	32	57	124	284	834	3
ST. VINCENT & THE GRENADINES	1986	62	-	-	-	1	-	1	1	5	13	39	2
SURINAME	1985	154	-	-	-	3	1	2	18	27	44	59	-
TRINIDAD AND TOBAGO	1986	930	-	1	-	6	6	17	66	137	277	417	3
UNITED STATES	1987	149835	127	54	73	244	967	2410	4672	11488	27767	102017	16
URUGUAY	1987	3689	3	2	5	8	21	61	154	342	750	2327	16
VENEZUELA	1987	5182	7	1	24	54	137	233	454	829	1246	2190	7
Male													
ARGENTINA	1986	12444	31	18	30	56	143	489	1211	2457	3298	4622	89
BAHAMAS	1987	51	-	-	-	2	-	2	5	9	11	21	1
BARBADOS	1988	122	1	-	-	-	2	1	5	10	33	69	1
BELIZE	1986	35	-	-	-	1	2	3	3	5	9	12	-
BRAZIL (AREA OF INFORMATION)	1986	38736	25	32	84	343	972	2590	5264	7981	10202	11007	236
CANADA	1988	5868	1	1	1	13	46	89	189	566	1368	3591	1
CHILE	1987	3057	1	1	4	22	26	68	232	536	901	1266	-
COLOMBIA	1984	4925	25	16	27	74	110	202	446	892	1290	1768	75
COSTA RICA	1988	398	-	2	2	1	2	9	23	50	84	224	1
CUBA	1988	3292	-	-	3	21	33	98	265	475	767	1626	4
DOMINICA	1985	16	-	-	-	-	1	-	1	-	6	8	-
DOMINICAN REPUBLIC	1985	883	3	3	2	5	18	29	112	162	239	310	-
ECUADOR	1987	1198	3	3	7	33	31	58	114	204	261	473	11
EL SALVADOR	1984	419	6	3	11	13	17	18	34	76	89	148	4
GUADELOUPE	1981	93	2	-	1	2	-	5	7	13	28	35	-
GUATEMALA	1984	456	-	-	-	12	32	8	40	84	100	176	4
GUYANA	1984	336	1	1	3	6	6	18	42	104	91	57	7
HONDURAS	1981	244	4	11	11	9	14	11	18	29	53	84	-
JAMAICA	1984	851	1	-	1	4	11	28	47	107	280	368	4
MARTINIQUE	1985	191	1	-	1	-	1	2	12	27	43	102	2
MEXICO	1986	8134	61	28	62	118	171	307	656	1162	1786	3753	30
NETHERLANDS ANTILLES (CURACAO)	1981	36	-	-	-	1	-	-	3	4	10	18	-
PANAMA	1987	446	1	1	1	-	3	10	24	63	126	213	4
PARAGUAY (AREA OF INFORMATION)	1986	688	-	-	-	5	7	26	55	124	179	283	9
PERU	1983	1231	9	6	16	31	33	54	100	183	308	467	24
PUERTO RICO	1987	673	4	-	2	1	5	18	37	81	165	358	2
ST. VINCENT & THE GRENADINES	1986	28	-	-	-	-	-	1	-	2	7	17	1
SURINAME	1985	76	-	-	-	1	1	-	8	17	23	26	-
TRINIDAD AND TOBAGO	1986	455	-	1	-	5	4	11	38	72	146	176	2
UNITED STATES	1987	59061	75	33	42	120	489	1273	2460	6184	13931	34446	8
URUGUAY	1987	1548	3	1	2	6	9	31	85	206	380	812	13
VENEZUELA	1987	2470	6	-	13	36	58	108	225	456	643	922	3
Female													
ARGENTINA	1986	11820	13	18	24	57	128	373	740	1356	2559	6480	72
BAHAMAS	1987	64	-	1	1	-	2	2	3	10	15	30	-
BARBADOS	1988	152	2	1	-	-	1	-	3	12	21	112	-
BELIZE	1986	28	-	-	-	-	-	1	3	6	5	11	2
BRAZIL (AREA OF INFORMATION)	1986	35080	14	27	77	315	1005	2084	3710	5440	8256	13942	210
CANADA	1988	8212	-	3	2	4	46	118	184	436	1146	6272	1
CHILE	1987	3469	2	2	1	15	34	86	229	410	803	1887	-
COLOMBIA	1984	5851	13	9	22	72	157	282	653	904	1418	2260	61
COSTA RICA	1988	408	-	-	1	5	9	10	21	54	64	244	-
CUBA	1988	3221	1	1	2	12	31	107	252	418	694	1703	-
DOMINICA	1985	16	-	-	-	-	-	-	-	1	3	8	1
DOMINICAN REPUBLIC	1985	843	2	1	1	10	18	52	117	110	175	357	-
ECUADOR	1987	1216	2	3	8	29	37	53	109	141	216	608	12
EL SALVADOR	1984	450	5	4	13	14	18	26	41	72	95	154	8
GUADELOUPE	1981	109	-	-	-	-	2	1	3	15	24	64	-
GUATEMALA	1984	552	-	-	4	12	28	40	40	84	140	204	-
GUYANA	1984	261	2	-	2	5	1	4	39	58	66	78	6
HONDURAS	1981	254	7	4	5	17	18	21	18	32	48	84	-
JAMAICA	1984	1102	-	-	1	2	4	11	44	134	246	645	15
MARTINIQUE	1985	171	-	-	-	-	3	1	10	18	39	100	-
MEXICO	1986	9586	39	22	53	148	209	395	690	1103	1727	5200	60
NETHERLANDS ANTILLES (CURACAO)	1981	57	-	-	-	1	-	-	5	9	12	30	-
PANAMA	1987	428	1	-	1	-	4	9	21	47	110	231	4
PARAGUAY (AREA OF INFORMATION)	1986	642	1	-	1	5	10	17	49	74	161	310	14
PERU	1983	1228	4	6	14	39	33	61	94	153	241	554	29
PUERTO RICO	1987	685	3	-	-	2	7	14	20	43	119	478	1
ST. VINCENT & THE GRENADINES	1986	34	-	-	-	1	-	-	1	3	6	22	1
SURINAME	1985	78	-	-	-	2	-	2	10	10	21	33	-
TRINIDAD AND TOBAGO	1986	475	-	-	-	1	2	6	28	65	131	241	1
UNITED STATES	1987	90774	52	21	31	124	478	1137	2212	5304	13836	67571	8
URUGUAY	1987	2141	-	1	3	2	12	30	69	136	370	1515	3
VENEZUELA	1987	2712	1	1	11	18	79	125	229	373	603	1268	4

TABLE III-9b(20).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from cerebrovascular disease (430–438), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	79.3	38.2	6.5	1.4	0.9	2.4	6.1	23.5	64.0	146.9	341.9	1231.0
BAHAMAS	1987	46.2	33.9	-	4.4	1.9	3.9	4.8	14.7	40.9	140.0	297.8	1153.8
BARBADOS	1988	106.6	...	...	5.5	-	-	6.7	3.8	43.5	127.2	355.3	1630.6
BELIZE	1986	37.7	26.1	-	-	-	2.8	8.2	23.0	46.9	118.0	220.8	680.5
BRAZIL (AREA OF INFORMATION)	1986	53.3	46.5	0.7	0.4	0.5	2.3	9.0	32.3	87.9	187.6	451.5	1336.6
CANADA	1988	54.0	18.5	0.3	0.3	0.1	0.4	2.0	5.5	14.3	42.3	150.6	938.6
CHILE	1987	52.1	34.3	1.1	0.3	0.2	1.4	2.9	10.0	43.3	122.1	367.4	1286.9
COLOMBIA	1984	38.3	38.2	4.6	0.9	0.7	2.4	5.9	17.0	57.7	134.3	345.9	1383.2
COSTA RICA	1988	28.1	27.3	-	0.6	0.5	1.0	2.3	6.6	22.0	78.5	197.3	1368.4
CUBA	1988	64.1	32.5	0.5	0.2	0.3	1.4	4.4	16.0	54.0	126.5	287.1	1138.5
DOMINICA	1985	42.1	24.7	-	-	-	-	9.1	-	45.4	76.5	290.3	842.1
DOMINICAN REPUBLIC	1985	26.9	30.9	4.4	0.5	0.2	1.1	3.7	14.3	57.9	106.8	324.7	998.5
ECUADOR	1987	24.3	24.5	2.4	0.5	0.6	3.1	4.8	12.0	35.7	84.0	193.4	910.5
EL SALVADOR	1984	16.3	19.4	7.6	1.1	1.9	2.9	5.4	10.9	27.2	76.0	171.2	562.4
GUADELOUPE	1981	61.8	32.1	30.8	-	1.3	2.8	4.6	18.4	36.2	128.4	325.0	990.0
GUATEMALA	1984	13.0	15.5	-	-	0.2	1.6	5.9	7.4	16.7	51.6	152.4	549.9
GUYANA	1984	63.8	61.7	19.8	1.0	2.2	5.3	4.4	26.3	137.5	375.0	590.2	1261.7
HONDURAS	1981	13.0	17.1	6.8	2.6	1.5	3.6	6.9	10.0	15.8	41.8	131.9	624.5
JAMAICA	1984	84.9	54.2	1.9	-	0.4	1.1	4.5	24.3	66.5	195.9	587.1	1974.7
MARTINIQUE	1985	110.4	44.9	17.5	-	1.9	-	8.1	8.4	74.3	175.8	433.9	1553.8
MEXICO	1986	21.8	21.9	3.9	0.5	0.5	1.6	3.3	8.9	27.0	69.9	189.2	878.8
NETHERLANDS ANTILLES (CURACAO)	1981	56.7	35.3	-	-	-	6.1	-	-	66.7	144.4	366.7	1200.0
PANAMA	1987	38.4	32.3	3.5	0.4	0.4	-	2.0	8.2	29.0	101.5	342.5	1378.9
PARAGUAY (AREA OF INFORMATION)	1986	58.5	60.6	1.9	-	0.2	2.2	4.9	21.2	77.6	202.9	603.9	2400.8
PERU	1983	13.1	13.4	1.9	0.5	0.6	1.8	2.4	6.3	14.8	39.8	114.3	532.3
PUERTO RICO	1987	38.2	17.7	10.9	-	0.3	0.4	2.3	7.4	18.1	50.6	154.1	757.5
ST. VINCENT & THE GRENADINES	1986	59.0	39.9	-	-	-	4.0	-	15.4	18.7	121.7	362.1	1893.2
SURINAME	1985	41.1	34.4	-	-	-	3.3	2.0	6.3	62.1	142.1	440.0	983.3
TRINIDAD AND TOBAGO	1986	77.2	55.1	-	-	-	2.3	3.0	12.9	77.3	214.1	619.7	1948.6
UNITED STATES	1987	61.6	18.7	3.3	0.4	0.2	0.6	2.2	7.0	20.1	52.2	157.2	838.5
URUGUAY	1987	120.6	42.6	5.6	0.9	0.9	1.6	5.1	17.4	44.9	111.5	362.1	1909.9
VENEZUELA	1987	28.4	29.7	1.4	0.0	0.5	1.4	4.8	12.4	38.4	103.8	295.3	1098.3
Male													
ARGENTINA	1986	81.6	44.7	9.0	1.3	1.0	2.3	6.4	26.4	80.2	197.5	431.5	1266.3
BAHAMAS	1987	41.4	35.6	-	-	-	7.6	-	15.2	52.8	142.6	282.8	1329.1
BARBADOS	1988	100.2	...	...	-	-	-	8.9	8.2	61.0	140.8	550.0	1725.0
BELIZE	1986	41.9	31.0	-	-	-	5.5	16.5	35.3	48.0	110.9	293.2	731.7
BRAZIL (AREA OF INFORMATION)	1986	56.1	50.9	0.9	0.4	0.5	2.4	8.8	36.1	103.7	227.0	519.1	1282.1
CANADA	1988	45.4	19.0	0.5	0.1	0.1	0.6	2.0	4.7	14.4	49.5	182.6	895.1
CHILE	1987	49.3	38.1	0.7	0.2	0.3	1.7	2.5	9.0	45.1	148.2	445.6	1351.1
COLOMBIA	1984	34.9	38.6	5.9	1.1	0.8	2.4	4.8	13.9	46.9	140.1	361.0	1463.6
COSTA RICA	1988	27.5	30.3	-	1.2	0.6	0.3	0.8	6.2	24.0	76.8	238.0	1566.4
CUBA	1988	63.7	32.5	-	-	0.3	1.8	4.5	15.0	54.9	134.2	297.4	1088.2
DOMINICA	1985	41.8	29.3	-	-	-	-	17.2	-	52.4	-	348.6	1126.8
DOMINICAN REPUBLIC	1985	27.3	31.9	5.2	0.8	0.2	0.7	3.7	10.3	57.3	124.1	388.8	971.8
ECUADOR	1987	24.0	25.8	2.9	0.5	0.5	3.2	4.3	12.5	36.8	101.4	222.1	894.1
EL SALVADOR	1984	17.6	20.7	7.9	0.9	1.7	2.7	5.2	8.9	24.9	80.8	186.8	669.7
GUADELOUPE	1981	58.3	36.0	61.3	-	2.6	5.4	-	31.6	54.7	119.3	400.0	875.0
GUATEMALA	1984	11.7	14.3	-	-	-	1.6	6.3	2.5	16.6	51.8	128.5	531.7
GUYANA	1984	71.6	71.4	12.8	2.0	2.6	5.7	7.5	44.7	147.4	481.5	710.9	1163.3
HONDURAS	1981	12.7	17.4	4.9	3.8	2.0	2.4	8.0	6.9	15.8	40.0	142.1	677.4
JAMAICA	1984	74.7	54.9	3.6	-	0.4	1.4	6.6	37.4	73.4	187.4	678.0	1695.9
MARTINIQUE	1985	119.7	56.0	37.2	-	3.9	-	4.0	11.9	87.0	228.8	477.8	2040.0
MEXICO	1986	20.0	22.2	4.7	0.6	0.5	1.4	2.9	8.6	27.2	75.7	210.6	848.9
NETHERLANDS ANTILLES (CURACAO)	1981	43.9	27.7	-	-	-	5.9	-	-	50.0	100.0	333.3	900.0
PANAMA	1987	38.5	33.1	3.4	0.8	0.3	-	1.7	8.4	30.3	114.1	354.9	1365.4
PARAGUAY (AREA OF INFORMATION)	1986	60.6	69.6	-	-	-	2.2	4.0	26.0	84.1	263.8	688.5	2695.2
PERU	1983	13.1	14.6	2.6	0.5	0.7	1.6	2.4	5.9	15.3	44.5	137.4	565.4
PUERTO RICO	1987	38.9	19.7	12.2	-	0.6	0.3	2.0	8.9	25.3	70.9	190.8	710.3
ST. VINCENT & THE GRENADINES	1986	54.9	43.7	-	-	-	-	-	32.8	-	106.4	440.3	2151.9
SURINAME	1985	41.1	39.0	-	-	-	2.2	4.2	-	57.1	170.0	460.0	1300.0
TRINIDAD AND TOBAGO	1986	75.8	59.2	-	1.7	-	3.9	4.0	16.9	91.1	236.1	685.4	1913.0
UNITED STATES	1987	49.8	19.3	3.8	0.4	0.2	0.6	2.3	7.5	21.8	59.7	178.1	802.0
URUGUAY	1987	103.0	43.2	11.0	0.9	0.7	2.4	4.3	18.0	50.4	140.9	406.8	1701.6
VENEZUELA	1987	26.8	30.6	2.3	-	0.8	1.9	4.1	11.4	38.1	115.6	324.2	1078.4
Female													
ARGENTINA	1986	76.3	32.3	3.9	1.3	0.8	2.4	5.8	20.4	47.8	99.7	267.6	1199.7
BAHAMAS	1987	50.9	33.0	-	8.7	3.8	-	9.5	14.2	29.7	137.7	309.9	1056.3
BARBADOS	1988	112.4	...	...	11.0	-	-	4.5	-	29.4	117.6	228.3	1577.5
BELIZE	1986	33.5	21.3	-	-	-	-	-	11.2	45.8	124.7	152.9	632.2
BRAZIL (AREA OF INFORMATION)	1986	50.5	42.2	0.5	0.4	0.5	2.2	9.1	28.5	72.1	149.2	388.4	1381.1
CANADA	1988	62.4	17.9	-	0.4	0.1	0.2	2.0	6.3	14.2	35.6	124.5	965.5
CHILE	1987	54.8	31.3	1.5	0.4	0.1	1.2	3.3	10.9	41.7	99.3	307.0	1247.2
COLOMBIA	1984	41.8	38.1	3.2	0.6	0.7	2.3	7.0	20.2	68.4	129.0	333.3	1326.3
COSTA RICA	1988	28.8	25.1	-	-	0.3	1.7	3.8	7.0	21.9	80.2	161.2	1226.1
CUBA	1988	64.6	32.5	1.1	0.3	0.2	1.1	4.4	16.9	53.1	118.8	276.6	1193.4
DOMINICA	1985	42.4	21.4	-	-	-	-	-	-	40.0	139.5	176.5	672.3
DOMINICAN REPUBLIC	1985	26.5	29.7	3.6	0.3	0.1	1.4	3.7	18.3	58.4	88.5	279.1	1022.9
ECUADOR	1987	24.7	23.1	2.0	0.5	0.6	2.9	5.2	11.5	34.7	67.3	167.3	923.8
EL SALVADOR	1984	19.1	18.5	7.2	1.3	2.0	3.0	5.6	13.0	29.5	71.5	158.9	487.3
GUADELOUPE	1981	65.1	28.4	-	-	-	-	8.8	6.0	20.3	137.6	266.7	1066.7
GUATEMALA	1984	14.4	16.8	-	-	0.4	1.6	5.6	12.4	16.8	51.4	175.7	566.7
GUYANA	1984	56.0	52.1	27.1	-	1.8	4.8	1.3	9.3	128.3	266.5	476.3	1344.8
HONDURAS	1981	13.3	16.8	8.9	1.4	0.9	4.7	7.8	13.2	15.8	43.5	122.1	579.3
JAMAICA	1984	94.8	53.1	-	-	0.4	0.7	2.4	12.8	60.4	203.3	509.3	2179.1
MARTINIQUE	1985	101.5	36.7	-	-	-	-	12.1	5.3	63.3	130.4	393.9	1250.0
MEXICO	1986	23.6	21.6	3.1	0.5	0.5	1.8	3.6	9.1	26.9	64.8	171.2	901.7
NETHERLANDS ANTILLES (CURACAO)	1981	69.5	42.5	-	-	-	6.3	-	-	83.3	180.0	400.0	1500.0
PANAMA	1987	38.4	31.4	3.6	-	0.4	-	2.4	7.9	27.6	88.3	329.3	1391.6
PARAGUAY (AREA OF INFORMATION)	1986	56.4	53.0	3.9	-	0.3	2.2	5.8	16.5	71.4	146.2	531.4	2183.1
PERU	1983	13.2	12.5	1.2	0.5	0.6	2.1	2.5	6.8	14.3	35.3	94.0	507.3
PUERTO RICO	1987	37.6	16.0	9.5	-	-	0.6	2.5	6.1	11.9	32.9	121.7	797.3
ST. VINCENT & THE GRENADINES	1986	62.9	37.4	-	-	-	8.1	-	-	32.3	134.5	300.0	1732.3
SURINAME	1985	41.1	31.5	-	-	-	4.4	-	11.8	66.7	111.1	420.0	825.0
TRINIDAD AND TOBAGO	1986	78.7	51.2	-	-	-	0.8	2.0	9.1	64.1	194.0	559.8	1975.4
UNITED STATES	1987	72.7	18.1	2.8	0.3	0.2	0.7	2.2	6.5	18.5	45.5	140.6	858.4
URUGUAY	1987	137.7	41.4	-	0.9	1.1	0.8	5.8	16.9	39.5	84.8	325.4	2044.0
VENEZUELA	1987	30.0	29.0	0.4	0.1	0.5	1.0	5.7	13.5	38.7	92.3	269.7	1113.3

TABLE III-9a(21).

Number of deaths from influenza and pneumonia (480–487), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	5051	811	212	74	61	76	113	202	344	745	2375	38
BAHAMAS	1987	56	10	2	1	2	2	3	7	6	6	17	-
BARBADOS	1988	55	1	-	-	-	-	3	-	4	13	34	-
BELIZE	1986	80	26	6	-	-	2	5	2	5	6	27	1
BRAZIL (AREA OF INFORMATION)	1986	35587	12214	3311	853	897	1127	1496	1706	2371	3491	7814	307
CANADA	1988	6697	31	17	7	28	37	57	112	310	895	5201	2
CHILE	1987	5210	839	144	60	57	87	101	159	362	778	2639	4
COLOMBIA	1984	4946	1238	1286	184	109	105	109	146	242	442	1047	38
COSTA RICA	1988	364	118	26	5	2	1	7	6	10	21	166	2
CUBA	1988	3267	183	35	10	29	25	38	89	202	498	2151	7
DOMINICA	1985	18	2	-	-	-	-	2	-	3	5	5	1
DOMINICAN REPUBLIC	1985	1176	425	274	61	23	19	14	25	35	77	223	-
ECUADOR	1987	2945	902	448	142	84	59	83	97	127	224	757	22
EL SALVADOR	1984	710	203	85	20	24	16	16	34	49	96	164	3
FRENCH GUIANA	1984	2	1	1	-	-	-	-	-	-	-	-	-
GUADELOUPE	1981	6	-	-	-	-	-	-	-	1	-	5	-
GUATEMALA	1984	9576	3144	2440	708	320	336	260	312	488	624	932	12
GUYANA	1984	173	41	18	8	3	3	5	7	13	18	45	12
HONDURAS	1981	557	222	152	25	12	6	16	10	21	25	68	-
JAMAICA	1984	412	55	51	19	6	7	9	5	18	48	189	5
MARTINIQUE	1985	41	-	-	1	1	-	1	3	4	9	22	-
MEXICO	1986	21294	8949	2157	509	340	380	462	568	886	1471	5391	181
NETHERLANDS ANTILLES (CURACAO)	1981	24	-	-	1	-	-	-	-	-	8	15	-
PANAMA	1987	343	58	40	5	8	9	11	11	22	47	127	5
PARAGUAY (AREA OF INFORMATION)	1986	634	249	119	26	7	17	12	15	23	36	119	11
PERU	1983	15125	4610	2736	645	324	280	319	455	652	1060	3291	753
PUERTO RICO	1987	1297	60	13	4	13	37	56	43	87	201	781	2
SURINAME	1985	89	14	8	3	2	4	1	7	5	12	33	-
TRINIDAD AND TOBAGO	1986	253	29	12	8	7	7	19	15	19	43	94	-
UNITED STATES	1987	69225	674	199	94	268	759	1177	1626	3879	10026	50516	7
URUGUAY	1987	681	53	14	3	7	13	11	17	36	90	429	8
VENEZUELA	1987	3378	794	390	101	107	122	110	156	186	303	1106	3
Male													
ARGENTINA	1986	2709	454	118	31	29	43	74	139	245	468	1085	23
BAHAMAS	1987	33	6	2	1	2	1	1	5	5	2	8	-
BARBADOS	1988	29	1	-	-	-	-	1	-	4	8	15	-
BELIZE	1986	42	15	1	-	-	-	4	2	3	4	13	-
BRAZIL (AREA OF INFORMATION)	1986	19880	6870	1719	459	523	717	1054	1139	1507	2126	3603	163
CANADA	1988	3364	14	10	3	21	21	27	71	199	559	2438	1
CHILE	1987	2689	483	89	31	29	45	70	105	253	451	1129	4
COLOMBIA	1984	2561	694	650	94	61	54	64	76	129	219	503	17
COSTA RICA	1988	190	66	12	2	1	1	5	4	7	11	80	1
CUBA	1988	1836	113	22	4	17	11	26	58	118	263	1198	6
DOMINICA	1985	9	-	-	-	-	-	1	-	2	4	2	-
DOMINICAN REPUBLIC	1985	589	205	126	30	14	10	7	17	23	50	107	-
ECUADOR	1987	1540	520	218	66	42	32	54	55	83	133	330	7
EL SALVADOR	1984	370	111	38	9	11	10	9	17	26	51	87	1
FRENCH GUIANA	1984	1	-	1	-	-	-	-	-	-	-	-	-
GUADELOUPE	1981	2	-	-	-	-	-	-	-	1	-	1	-
GUATEMALA	1984	4984	1692	1140	332	188	184	116	188	264	364	512	4
GUYANA	1984	92	21	10	3	2	1	3	6	8	11	21	6
HONDURAS	1981	287	115	80	11	7	-	5	7	10	16	36	-
JAMAICA	1984	208	31	19	8	4	5	6	5	11	36	80	3
MARTINIQUE	1985	25	-	1	1	-	-	1	2	3	5	12	-
MEXICO	1986	11336	4924	1110	275	204	217	309	328	505	819	2548	97
NETHERLANDS ANTILLES (CURACAO)	1981	10	-	-	1	-	-	-	-	-	5	4	-
PANAMA	1987	193	28	24	4	2	8	6	6	15	28	68	4
PARAGUAY (AREA OF INFORMATION)	1986	315	124	54	17	5	9	8	9	16	22	47	4
PERU	1983	7672	2454	1382	334	174	128	171	277	367	560	1435	390
PUERTO RICO	1987	747	37	8	-	6	24	36	36	64	118	417	1
SURINAME	1985	52	9	2	1	2	3	1	5	3	6	20	-
TRINIDAD AND TOBAGO	1986	137	15	6	5	5	4	11	9	14	31	37	-
UNITED STATES	1987	33562	381	109	45	149	499	799	1056	2458	6206	21855	5
URUGUAY	1987	323	24	7	1	6	6	10	10	21	56	176	4
VENEZUELA	1987	1803	459	193	45	66	75	72	97	117	170	506	3
Female													
ARGENTINA	1986	2314	355	93	42	31	33	38	62	98	273	1279	10
BAHAMAS	1987	23	4	-	-	-	1	2	2	1	4	9	-
BARBADOS	1988	26	-	-	-	-	-	2	-	-	5	19	-
BELIZE	1986	38	11	5	-	-	2	1	-	2	2	14	1
BRAZIL (AREA OF INFORMATION)	1986	15652	5319	1589	393	372	408	442	567	863	1363	4201	135
CANADA	1988	3333	17	7	4	7	16	30	41	111	336	2763	1
CHILE	1987	2521	356	55	29	28	22	31	54	109	327	1510	-
COLOMBIA	1984	2385	544	636	90	48	51	45	70	113	223	544	21
COSTA RICA	1988	174	52	14	3	1	-	2	2	3	10	86	1
CUBA	1988	1431	70	13	6	12	14	12	31	84	235	953	1
DOMINICA	1985	9	2	-	-	-	-	1	-	1	1	3	1
DOMINICAN REPUBLIC	1985	587	220	148	31	9	9	7	8	12	27	116	-
ECUADOR	1987	1405	382	230	76	42	27	29	42	44	91	427	15
EL SALVADOR	1984	340	92	47	11	13	6	7	17	23	45	77	2
FRENCH GUIANA	1984	1	1	-	-	-	-	-	-	-	-	-	-
GUADELOUPE	1981	4	-	-	-	-	-	-	-	-	-	4	-
GUATEMALA	1984	4592	1452	1300	376	132	152	144	124	224	260	420	8
GUYANA	1984	81	20	8	5	1	2	2	1	5	7	24	6
HONDURAS	1981	270	107	72	14	5	6	11	3	11	9	32	-
JAMAICA	1984	204	24	32	11	2	2	3	-	7	12	109	2
MARTINIQUE	1985	16	-	-	-	-	-	-	1	1	4	10	-
MEXICO	1986	9958	4025	1047	234	138	163	153	240	381	652	2843	84
NETHERLANDS ANTILLES (CURACAO)	1981	14	-	-	-	-	-	-	-	-	3	11	-
PANAMA	1987	150	30	16	1	6	1	5	5	7	19	59	1
PARAGUAY (AREA OF INFORMATION)	1986	319	125	65	9	2	8	4	6	7	14	72	7
PERU	1983	7453	2156	1354	311	150	152	148	178	285	500	1856	363
PUERTO RICO	1987	550	23	5	4	7	13	20	7	23	83	364	1
SURINAME	1985	37	5	6	2	-	1	-	2	2	6	13	-
TRINIDAD AND TOBAGO	1986	116	14	6	3	2	3	8	6	5	12	57	-
UNITED STATES	1987	35663	293	90	49	119	260	378	570	1421	3820	28661	2
URUGUAY	1987	358	29	7	2	1	5	1	7	15	34	253	4
VENEZUELA	1987	1575	335	197	56	41	47	38	59	69	133	600	-

TABLE III-9b(21).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from influenza and pneumonia (480–487), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	16.4	11.0	120.1	7.6	1.2	1.3	1.7	3.1	6.6	13.2	43.3	262.4
BAHAMAS	1987	22.5	22.2	230.9	8.7	1.9	3.9	4.8	11.0	35.8	44.2	68.7	384.6
BARBADOS	1988	21.4	...	...	-	-	-	-	11.4	-	23.1	85.5	306.3
BELIZE	1986	47.9	37.4	423.7	37.6	-	-	8.2	28.7	15.6	53.6	94.6	798.8
BRAZIL (AREA OF INFORMATION)	1986	25.7	22.7	229.0	22.0	2.7	3.2	5.1	10.3	16.7	33.1	85.3	418.2
CANADA	1988	25.7	8.8	8.3	1.1	0.2	0.6	0.8	1.5	4.3	13.1	53.6	495.0
CHILE	1987	41.6	33.6	315.7	13.6	2.4	2.2	3.2	6.5	14.9	46.7	167.7	1077.1
COLOMBIA	1984	17.6	19.2	149.9	45.4	2.8	1.8	2.3	3.8	7.7	18.1	56.5	359.5
COSTA RICA	1988	12.7	13.1	145.0	8.1	0.8	0.3	0.2	2.4	3.1	7.6	28.0	485.4
CUBA	1988	32.2	17.6	97.4	5.5	0.5	1.3	1.7	3.0	9.3	28.6	97.9	735.6
DOMINICA	1985	23.7	17.7	117.4	-	-	-	-	34.5	-	76.5	161.3	263.2
DOMINICAN REPUBLIC	1985	18.3	24.7	375.4	36.9	3.6	1.6	2.0	2.5	6.3	13.7	60.4	333.8
ECUADOR	1987	29.7	34.4	441.1	36.2	5.5	4.2	4.1	9.0	15.5	30.9	90.8	638.8
EL SALVADOR	1984	15.0	15.4	139.8	13.1	1.5	2.5	2.5	4.0	12.3	25.2	89.3	305.4
FRENCH GUIANA	1984	2.5	2.8	43.2	11.5	-	-	-	-	-	-	-	-
GUADELOUPE	1981	1.8	0.8	-	-	-	-	-	-	-	4.6	-	50.0
GUATEMALA	1984	123.7	117.9	1007.4	222.7	32.8	21.4	33.3	40.1	65.1	149.9	396.2	1348.8
GUYANA	1984	18.5	21.7	270.3	18.1	3.6	1.4	1.9	6.0	11.9	30.1	67.7	420.6
HONDURAS	1981	14.6	14.0	137.9	26.2	2.3	1.6	1.3	5.0	4.4	14.4	32.8	252.8
JAMAICA	1984	17.9	14.4	102.3	21.0	3.5	1.1	2.1	5.6	3.7	14.6	53.8	368.4
MARTINIQUE	1985	12.5	5.6	-	-	1.9	1.3	-	2.8	10.1	15.6	47.6	169.2
MEXICO	1986	26.2	26.1	348.5	22.3	2.3	2.0	3.3	6.4	11.4	27.4	79.2	529.2
NETHERLANDS ANTILLES (CURACAO)	1981	14.6	8.1	-	-	2.4	-	-	-	-	-	133.3	375.0
PANAMA	1987	15.1	14.4	100.6	17.1	0.9	1.7	2.6	4.7	7.1	20.3	68.2	394.4
PARAGUAY (AREA OF INFORMATION)	1986	27.9	31.6	464.1	41.4	4.4	1.5	4.9	5.9	11.2	23.6	63.9	481.8
PERU	1983	80.9	76.2	669.1	120.9	13.7	8.6	10.3	17.6	34.8	77.1	220.6	1715.8
PUERTO RICO	1987	36.5	19.8	93.2	4.5	0.6	1.9	7.1	13.0	13.7	35.5	109.1	709.4
SURINAME	1985	23.7	21.2	119.6	20.0	3.4	2.2	8.0	3.1	24.1	26.3	120.0	550.0
TRINIDAD AND TOBAGO	1986	21.0	17.6	90.9	10.5	3.2	2.7	3.5	14.5	17.6	29.7	98.2	439.3
UNITED STATES	1987	28.4	9.1	17.6	1.4	0.3	0.7	1.8	3.4	7.0	17.6	56.7	415.2
URUGUAY	1987	22.3	11.1	99.2	6.3	0.6	1.4	3.1	3.1	5.0	11.7	43.5	362.1
VENEZUELA	1987	18.5	19.7	153.6	18.1	2.2	2.9	4.3	5.9	13.2	23.3	71.8	554.7
Male													
ARGENTINA	1986	17.8	12.9	131.8	8.3	1.0	1.2	1.9	4.0	9.2	19.7	61.2	297.3
BAHAMAS	1987	26.8	29.5	277.9	17.5	3.6	7.8	4.8	7.6	52.8	79.2	51.4	506.3
BARBADOS	1988	23.8	...	...	-	-	-	-	8.2	-	56.3	133.3	375.0
BELIZE	1986	50.3	39.4	479.4	12.4	-	-	-	47.1	32.0	66.5	130.3	792.7
BRAZIL (AREA OF INFORMATION)	1986	28.8	25.9	257.5	22.7	2.9	3.7	6.5	14.7	22.4	42.8	108.2	419.7
CANADA	1988	26.0	10.9	7.3	1.3	0.2	0.9	0.9	1.4	5.4	17.4	74.6	607.7
CHILE	1987	43.3	39.9	354.6	16.5	2.5	2.2	4.3	9.3	20.4	69.9	223.0	1204.9
COLOMBIA	1984	18.2	20.6	164.8	45.3	2.8	2.0	2.4	4.4	8.0	20.3	61.3	416.4
COSTA RICA	1988	13.1	14.6	157.2	7.3	0.6	0.3	0.4	3.5	4.2	10.8	31.2	559.4
CUBA	1988	35.5	19.7	117.1	6.8	0.4	1.5	1.5	4.0	12.0	33.3	102.0	800.3
DOMINICA	1985	23.5	18.7	-	-	-	-	-	34.2	-	113.0	285.7	281.7
DOMINICAN REPUBLIC	1985	18.2	24.4	353.6	33.4	3.5	2.0	2.1	2.5	8.7	17.8	77.2	335.4
ECUADOR	1987	30.8	37.2	500.7	34.8	5.0	4.1	4.5	11.7	17.7	41.3	113.2	623.8
EL SALVADOR	1984	15.6	17.0	146.9	11.5	1.4	2.3	3.1	4.4	12.4	27.6	106.9	393.7
FRENCH GUIANA	1984	2.5	2.9	-	22.7	-	-	-	-	-	-	-	-
GUADELOUPE	1981	1.3	0.7	-	-	-	-	-	-	-	9.2	-	25.0
GUATEMALA	1984	127.3	122.9	1067.5	204.3	30.2	24.8	36.3	35.7	78.0	162.7	467.9	1546.8
GUYANA	1984	19.6	23.3	269.6	20.0	2.6	1.9	1.3	7.4	21.1	37.0	85.9	428.6
HONDURAS	1981	15.0	14.6	139.7	27.5	2.0	1.9	-	3.1	6.1	13.8	42.9	290.3
JAMAICA	1984	18.3	15.6	113.1	15.4	2.9	1.4	3.0	8.0	7.8	19.3	87.2	368.7
MARTINIQUE	1985	15.7	8.5	-	-	3.9	2.7	-	6.0	14.5	25.4	55.6	240.0
MEXICO	1986	27.9	28.7	376.0	22.5	2.4	2.4	3.7	8.7	13.6	32.9	96.6	576.3
NETHERLANDS ANTILLES (CURACAO)	1981	12.2	7.4	-	-	4.8	-	-	-	-	-	166.7	200.0
PANAMA	1987	16.7	15.9	94.8	20.0	1.4	0.8	4.6	5.0	7.6	27.2	78.9	435.9
PARAGUAY (AREA OF INFORMATION)	1986	27.7	31.9	442.6	37.0	5.7	2.2	5.2	8.0	13.8	34.0	84.6	447.6
PERU	1983	81.4	79.2	699.1	120.0	13.9	9.1	9.3	18.7	42.5	89.3	249.9	1737.3
PUERTO RICO	1987	43.2	25.0	112.5	5.4	-	1.7	9.8	17.8	24.8	58.0	138.4	827.4
SURINAME	1985	28.1	28.5	155.7	10.0	2.2	4.4	12.5	6.7	35.7	30.0	120.0	1000.0
TRINIDAD AND TOBAGO	1986	22.8	20.1	93.0	10.3	3.8	3.9	4.0	16.9	21.6	45.9	145.5	402.2
UNITED STATES	1987	26.3	11.4	19.4	1.5	0.3	0.8	2.3	4.7	9.3	23.7	79.3	508.8
URUGUAY	1987	21.5	12.1	88.1	6.2	0.4	2.4	3.9	5.8	5.9	14.4	60.0	368.8
VENEZUELA	1987	19.5	21.9	174.2	17.5	2.0	3.5	5.2	7.6	16.4	29.6	85.7	591.8
Female													
ARGENTINA	1986	14.9	9.3	107.3	6.7	1.4	1.3	1.5	2.1	4.0	7.2	28.5	236.8
BAHAMAS	1987	18.3	15.7	184.2	-	-	-	4.8	14.2	19.8	13.8	82.6	316.9
BARBADOS	1988	19.2	...	-	-	-	-	-	14.1	-	-	54.5	267.6
BELIZE	1986	45.5	35.8	365.8	63.5	-	-	16.4	11.2	-	41.6	61.2	804.6
BRAZIL (AREA OF INFORMATION)	1986	22.5	19.5	199.5	21.2	2.5	2.6	3.7	6.1	11.0	23.7	64.1	418.1
CANADA	1988	25.3	7.3	9.2	0.9	0.2	0.3	0.7	1.6	3.2	9.1	36.5	425.3
CHILE	1987	39.8	28.3	274.8	10.6	2.4	2.2	2.1	3.9	9.8	26.4	125.0	998.0
COLOMBIA	1984	17.0	17.9	134.4	45.5	2.7	1.6	2.3	3.2	7.3	16.1	52.4	319.2
COSTA RICA	1988	12.3	11.7	132.0	8.9	0.9	0.3	-	1.4	2.1	4.5	25.2	432.2
CUBA	1988	28.7	15.4	76.6	4.2	0.7	1.1	2.0	1.9	6.5	23.9	93.7	667.8
DOMINICA	1985	23.9	17.7	240.7	-	-	-	-	34.8	-	46.5	58.8	252.1
DOMINICAN REPUBLIC	1985	18.4	25.0	398.4	40.4	3.7	1.3	1.9	2.5	4.0	9.7	43.1	332.4
ECUADOR	1987	28.5	31.5	379.7	37.8	6.0	4.2	3.8	6.3	13.4	21.0	70.5	650.9
EL SALVADOR	1984	14.4	14.2	132.1	14.8	1.7	2.8	1.9	3.5	12.2	22.8	75.3	243.7
FRENCH GUIANA	1984	2.5	2.7	86.8	-	-	-	-	-	-	-	-	-
GUADELOUPE	1981	2.4	0.8	-	-	-	-	-	-	-	-	-	66.7
GUATEMALA	1984	120.0	113.1	945.3	241.9	35.4	17.9	30.3	44.5	52.1	137.2	326.2	1166.7
GUYANA	1984	17.4	20.1	270.9	16.3	4.5	1.0	2.5	4.6	3.3	23.1	50.7	413.8
HONDURAS	1981	14.2	13.5	136.0	24.9	2.8	1.4	2.6	6.9	2.6	15.0	22.9	220.7
JAMAICA	1984	17.6	13.4	91.1	26.6	4.2	0.7	1.2	3.5	-	10.6	24.8	368.2
MARTINIQUE	1985	9.5	3.2	-	-	-	-	-	-	6.3	7.2	40.4	125.0
MEXICO	1986	24.6	23.6	319.9	22.1	2.1	1.6	2.8	4.2	9.3	22.4	64.7	493.0
NETHERLANDS ANTILLES (CURACAO)	1981	17.1	8.8	-	-	-	-	-	-	-	-	100.0	550.0
PANAMA	1987	13.5	12.8	106.7	14.1	0.4	2.5	0.6	4.4	6.6	13.2	56.9	355.4
PARAGUAY (AREA OF INFORMATION)	1986	28.0	31.5	487.6	46.0	3.1	0.9	4.6	3.9	8.7	13.8	46.2	507.0
PERU	1983	80.3	73.2	637.9	121.8	13.4	8.0	11.4	16.4	27.1	65.7	195.0	1689.8
PUERTO RICO	1987	30.2	15.2	73.0	3.5	1.2	2.0	4.7	8.7	4.2	17.6	84.9	909.7
SURINAME	1985	19.5	16.7	84.4	30.0	4.5	-	3.6	-	13.5	22.2	120.0	833.0
TRINIDAD AND TOBAGO	1986	19.2	15.1	88.8	10.7	2.4	1.5	3.0	12.1	13.7	14.9	51.3	467.2
UNITED STATES	1987	28.6	7.3	15.7	1.3	0.3	0.6	1.2	2.2	4.8	12.2	38.8	364.1
URUGUAY	1987	23.0	10.4	110.7	6.4	0.7	0.4	2.4	0.6	4.0	9.4	29.9	341.3
VENEZUELA	1987	17.4	17.6	132.3	18.6	2.5	2.2	3.4	4.1	10.0	17.1	59.5	526.8

TABLE III-9a(22).

Number of deaths from chronic liver disease and cirrhosis (571), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	3137	-	2	7	9	69	318	728	954	627	401	22
BAHAMAS	1987	44	-	-	-	-	5	7	14	11	3	4	-
BARBADOS	1988	27	-	-	-	-	-	2	3	8	8	6	-
BELIZE	1986	15	-	-	-	-	-	2	3	7	2	1	-
BRAZIL (AREA OF INFORMATION)	1986	12407	35	35	55	218	1289	2768	3176	2532	1429	712	156
CANADA	1988	2067	1	2	-	3	28	150	324	628	604	326	1
CHILE	1987	2371	1	1	1	10	49	237	546	711	572	243	-
COLOMBIA	1984	849	1	5	8	24	27	72	200	205	193	103	11
COSTA RICA	1988	221	-	2	4	1	15	36	46	51	33	31	2
CUBA	1988	771	4	2	3	14	17	45	116	163	221	186	-
DOMINICA	1985	6	-	1	-	-	-	-	-	1	-	4	-
DOMINICAN REPUBLIC	1985	816	2	6	9	25	42	62	145	169	178	178	-
ECUADOR	1987	701	-	2	2	7	38	92	136	182	149	88	4
EL SALVADOR	1984	286	1	-	3	5	30	54	58	56	48	25	6
FRENCH GUIANA	1984	25	-	-	-	-	2	2	5	7	5	4	-
GUADELOUPE	1981	83	-	-	-	-	4	7	16	13	16	7	-
GUATEMALA	1984	708	4	16	12	12	96	132	132	152	108	44	-
GUYANA	1984	119	7	7	1	1	7	25	26	23	13	7	2
HONDURAS	1981	162	2	-	2	3	11	23	32	35	25	29	-
JAMAICA	1984	93	-	-	-	2	3	6	17	20	25	19	1
MARTINIQUE	1985	40	-	-	-	-	1	-	6	14	10	9	-
MEXICO	1986	16018	38	20	37	143	1217	2814	3858	3634	2391	1765	103
NETHERLANDS ANTILLES (CURACAO)	1981	5	-	-	-	2	1	1	-	1	-	-	-
PANAMA	1987	118	-	2	-	-	3	17	22	33	28	12	1
PARAGUAY (AREA OF INFORMATION)	1986	85	-	1	-	1	2	8	20	21	14	16	-
PERU	1983	1210	-	9	10	24	31	117	256	321	230	182	30
PUERTO RICO	1987	765	1	-	1	-	28	120	170	182	157	102	4
SURINAME	1985	43	-	-	1	1	2	7	10	12	4	6	-
TRINIDAD AND TOBAGO	1986	97	-	1	-	2	5	12	24	19	26	8	-
UNITED STATES	1987	26201	16	4	10	71	1140	3422	4618	7078	6202	3632	8
URUGUAY	1987	301	1	-	-	-	2	16	57	94	81	48	2
VENEZUELA	1987	1292	5	6	10	18	53	155	269	333	267	173	3
Male													
ARGENTINA	1986	2340	-	1	4	6	52	237	576	736	440	272	16
BAHAMAS	1987	28	-	-	-	-	2	6	10	7	1	2	-
BARBADOS	1988	22	-	-	-	-	-	2	2	5	8	5	-
BELIZE	1986	8	-	-	-	-	-	2	2	2	2	-	-
BRAZIL (AREA OF INFORMATION)	1986	9922	15	20	29	147	1062	2337	2663	2032	1046	451	120
CANADA	1988	1392	1	1	-	2	19	110	247	448	398	166	-
CHILE	1987	1688	-	1	-	3	35	183	426	509	386	145	-
COLOMBIA	1984	578	-	3	2	13	17	57	139	150	129	61	7
COSTA RICA	1988	149	-	2	4	-	10	26	37	38	21	11	-
CUBA	1988	428	4	1	1	5	9	31	77	106	107	85	-
DOMINICA	1985	3	-	-	-	-	-	-	-	-	-	3	-
DOMINICAN REPUBLIC	1985	504	-	4	5	18	27	41	88	104	112	105	-
ECUADOR	1987	516	-	1	1	8	30	77	109	127	105	56	4
EL SALVADOR	1984	233	1	-	-	4	25	49	50	46	37	15	6
FRENCH GUIANA	1984	16	-	-	-	-	-	2	3	5	5	1	-
GUADELOUPE	1981	41	-	-	-	-	4	6	9	11	8	3	-
GUATEMALA	1984	508	4	8	4	8	76	108	104	100	64	32	-
GUYANA	1984	80	3	3	-	-	6	21	23	19	10	3	2
HONDURAS	1981	121	2	-	-	2	10	19	27	28	17	16	-
JAMAICA	1984	64	-	-	-	1	2	6	12	15	12	15	1
MARTINIQUE	1985	30	-	-	-	-	1	-	4	12	7	6	-
MEXICO	1986	12318	22	10	18	96	1042	2361	3130	2712	1672	1172	83
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	1	1	1	-	1	-	-	-
PANAMA	1987	80	-	-	-	-	1	14	14	22	19	9	1
PARAGUAY (AREA OF INFORMATION)	1986	65	-	-	-	1	2	6	17	17	11	11	-
PERU	1983	840	-	5	7	14	25	83	188	221	158	118	21
PUERTO RICO	1987	604	-	-	1	-	23	106	146	140	116	68	4
SURINAME	1985	26	-	-	-	1	1	6	6	8	2	2	-
TRINIDAD AND TOBAGO	1986	71	-	-	-	1	3	9	16	16	22	4	-
UNITED STATES	1987	17051	8	3	6	42	759	2468	3288	4812	3798	1860	7
URUGUAY	1987	236	-	-	-	-	1	15	48	77	65	29	1
VENEZUELA	1987	961	3	1	4	10	38	122	228	256	187	110	2
Female													
ARGENTINA	1986	781	-	1	3	3	17	79	150	213	184	127	4
BAHAMAS	1987	16	-	-	-	-	3	1	4	4	2	2	-
BARBADOS	1988	5	-	-	-	-	-	-	1	3	-	1	-
BELIZE	1986	7	-	-	-	-	-	-	1	5	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	2471	20	15	26	71	225	429	510	499	381	260	35
CANADA	1988	675	-	1	-	1	9	40	77	180	206	160	1
CHILE	1987	683	1	-	1	7	14	54	120	202	186	98	-
COLOMBIA	1984	271	1	2	6	11	10	15	51	55	64	42	4
COSTA RICA	1988	72	-	-	-	1	5	10	9	13	12	20	2
CUBA	1988	345	-	1	2	9	8	14	39	57	114	101	-
DOMINICA	1985	3	-	1	-	-	-	-	-	1	-	1	-
DOMINICAN REPUBLIC	1985	312	2	2	4	7	15	23	57	65	66	73	-
ECUADOR	1987	185	-	1	1	1	9	15	27	55	44	32	-
EL SALVADOR	1984	53	-	-	3	1	5	5	8	10	11	10	-
FRENCH GUIANA	1984	9	-	-	-	-	2	-	2	2	-	3	-
GUADELOUPE	1981	22	-	-	-	-	-	1	7	2	8	4	-
GUATEMALA	1984	200	-	8	8	4	20	24	28	52	44	12	-
GUYANA	1984	29	4	4	1	1	1	4	3	4	3	4	-
HONDURAS	1981	41	-	-	2	1	1	4	5	7	8	13	-
JAMAICA	1984	29	-	-	-	1	1	-	5	5	13	4	-
MARTINIQUE	1985	10	-	-	-	-	-	-	2	2	3	3	-
MEXICO	1986	3700	16	10	19	47	175	453	726	922	719	593	20
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	1	-	-	-	-	-	-	-
PANAMA	1987	38	-	2	-	-	2	3	8	11	9	3	-
PARAGUAY (AREA OF INFORMATION)	1986	18	-	1	-	-	-	2	3	4	3	5	-
PERU	1983	370	-	4	3	10	6	34	68	100	72	64	9
PUERTO RICO	1987	161	1	-	-	-	5	14	24	42	41	34	-
SURINAME	1985	17	-	-	1	-	1	1	4	4	2	4	-
TRINIDAD AND TOBAGO	1986	26	-	1	-	1	2	3	8	3	4	4	-
UNITED STATES	1987	9150	8	1	4	29	381	954	1330	2266	2404	1772	1
URUGUAY	1987	65	1	-	-	-	1	1	9	17	16	19	1
VENEZUELA	1987	331	2	5	6	8	15	33	41	77	80	63	1

TABLE III-9b(22).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from chronic liver disease and cirrhosis (571), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	10.2	6.0	-	0.1	0.1	0.2	1.6	8.6	23.8	36.6	36.4	44.3
BAHAMAS	1987	17.7	15.2	-	-	-	-	11.9	25.7	71.6	81.1	34.4	90.5
BARBADOS	1988	10.5	...	-	-	-	-	-	7.6	16.3	46.2	52.6	54.1
BELIZE	1986	9.0	7.5	-	-	-	-	-	11.5	23.4	75.1	31.5	29.6
BRAZIL (AREA OF INFORMATION)	1986	9.0	8.2	0.7	0.2	0.2	0.8	5.9	19.1	31.1	35.3	34.9	38.1
CANADA	1988	7.9	3.9	0.3	0.1	-	0.1	0.6	4.0	12.4	26.5	36.2	31.0
CHILE	1987	18.9	14.1	0.4	0.1	0.0	0.4	2.3	15.4	51.3	91.8	123.9	99.2
COLOMBIA	1984	5.0	2.9	0.1	0.2	0.1	0.4	0.6	2.5	10.5	15.3	24.7	35.4
COSTA RICA	1988	7.7	7.7	-	0.6	0.6	0.2	3.1	12.6	24.0	38.5	44.0	90.6
CUBA	1988	7.6	4.5	2.1	0.3	0.2	0.6	1.2	3.5	12.1	23.1	43.4	63.6
DOMINICA	1985	7.9	5.3	-	13.3	-	-	-	-	-	25.5	-	210.5
DOMINICAN REPUBLIC	1985	12.7	14.5	1.8	0.8	0.5	1.8	4.3	10.9	36.6	66.3	139.6	266.5
ECUADOR	1987	7.1	7.5	-	0.2	0.1	0.3	2.7	10.0	21.8	44.3	60.4	74.3
EL SALVADOR	1984	8.0	6.7	0.7	-	0.2	0.5	4.6	13.4	21.0	28.7	44.7	46.6
FRENCH GUIANA	1984	31.3	29.5	-	-	-	-	16.0	24.4	88.0	178.6	223.2	404.0
GUADELOUPE	1981	19.3	13.7	-	-	-	-	9.2	21.5	58.0	59.6	100.0	70.0
GUATEMALA	1984	9.1	10.5	1.3	1.5	0.6	0.8	9.5	20.4	27.5	46.7	68.8	63.7
GUYANA	1984	12.7	13.9	46.1	7.1	0.4	0.5	4.4	29.9	44.1	53.2	48.9	65.4
HONDURAS	1981	4.2	5.4	1.2	-	0.2	0.4	2.4	7.2	14.0	24.0	32.6	107.8
JAMAICA	1984	4.0	3.3	-	-	-	0.4	0.9	3.7	12.4	16.3	37.0	37.0
MARTINIQUE	1985	12.2	6.4	-	-	-	-	2.0	-	20.3	54.7	52.9	89.2
MEXICO	1986	19.7	21.7	1.5	0.2	0.2	0.8	10.5	38.9	77.5	112.2	128.8	173.2
NETHERLANDS ANTILLES (CURACAO)	1981	3.0	2.9	-	-	-	6.1	4.5	5.9	-	11.1	-	-
PANAMA	1987	5.2	4.8	-	0.9	-	-	0.9	7.3	14.2	30.4	40.6	37.3
PARAGUAY (AREA OF INFORMATION)	1988	3.7	4.0	-	0.3	-	0.2	0.6	3.9	14.9	21.5	24.9	64.8
PERU	1983	6.5	6.5	-	0.4	0.2	0.6	1.1	6.4	19.6	38.0	47.9	94.9
PUERTO RICO	1987	21.5	14.2	1.6	-	0.1	-	5.4	27.8	54.1	74.3	85.2	92.6
SURINAME	1985	11.5	10.9	-	-	1.1	1.1	4.0	21.9	34.5	63.2	40.0	100.0
TRINIDAD AND TOBAGO	1986	8.1	6.8	-	0.9	-	0.8	2.5	9.1	28.1	29.7	58.2	37.4
UNITED STATES	1987	10.8	5.6	0.4	0.0	0.0	0.2	2.6	10.0	19.8	32.1	35.1	29.9
URUGUAY	1987	9.8	4.6	1.9	-	-	-	0.5	4.6	16.6	30.7	39.1	39.4
VENEZUELA	1987	7.1	7.4	1.0	0.3	0.2	0.5	1.9	8.3	22.7	41.7	63.3	86.8
Male													
ARGENTINA	1986	15.3	9.5	-	0.1	0.1	0.2	2.3	12.8	38.1	59.2	57.6	74.5
BAHAMAS	1987	22.7	21.1	-	-	-	-	9.6	45.6	105.6	110.9	25.7	126.6
BARBADOS	1988	18.1	...	-	-	-	-	-	16.4	24.4	70.4	133.3	125.0
BELIZE	1986	9.6	8.4	-	-	-	-	-	23.5	32.0	44.3	65.1	-
BRAZIL (AREA OF INFORMATION)	1986	14.4	13.4	0.6	0.3	0.2	1.0	9.7	32.6	52.5	57.8	53.2	52.5
CANADA	1988	10.8	5.7	0.5	0.1	-	0.1	0.8	5.9	18.9	39.2	53.1	41.4
CHILE	1987	27.2	21.9	-	0.2	-	0.2	3.3	24.3	82.7	140.7	190.9	154.7
COLOMBIA	1984	4.1	4.2	-	0.2	0.1	0.4	0.7	3.9	14.6	23.6	36.1	55.5
COSTA RICA	1988	10.3	10.8	-	1.2	1.2	-	4.1	18.0	38.6	58.4	59.5	76.9
CUBA	1988	8.2	5.1	4.1	0.3	0.1	0.4	1.2	4.8	16.0	29.9	41.5	56.8
DOMINICA	1985	7.8	5.0	-	-	-	-	-	-	-	-	-	422.5
DOMINICAN REPUBLIC	1985	15.6	17.9	-	1.1	0.6	2.5	5.6	14.5	45.1	79.7	172.8	329.2
ECUADOR	1987	10.5	11.3	-	0.2	0.1	0.6	4.2	16.6	35.2	63.2	89.4	105.9
EL SALVADOR	1984	9.8	11.3	1.3	-	-	0.8	7.6	24.2	36.6	48.9	77.6	67.9
FRENCH GUIANA	1984	40.0	38.6	-	-	-	-	-	48.6	106.4	261.8	471.7	222.2
GUADELOUPE	1981	25.7	20.0	-	-	-	-	19.2	38.0	70.3	100.9	114.3	75.0
GUATEMALA	1984	13.0	15.2	2.5	1.4	0.4	1.1	15.0	33.3	43.2	61.6	82.3	96.7
GUYANA	1984	19.2	21.0	38.5	6.0	-	-	7.5	52.1	80.7	88.0	78.1	61.2
HONDURAS	1981	6.3	8.1	2.4	-	-	0.5	4.3	11.9	23.7	38.6	45.6	129.0
JAMAICA	1984	5.6	5.2	-	-	-	0.4	1.2	8.0	18.8	26.3	29.1	89.1
MARTINIQUE	1985	18.8	10.6	-	-	-	-	4.0	-	29.0	101.7	77.8	120.0
MEXICO	1986	30.3	35.2	1.7	0.2	0.2	1.1	17.9	66.2	130.0	176.6	197.1	265.1
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	4.8	-	-	-	5.9	9.1	12.5	-	25.0	-	-
PANAMA	1987	6.9	6.4	-	-	-	-	0.6	11.8	17.7	39.9	53.5	57.7
PARAGUAY (AREA OF INFORMATION)	1986	5.7	6.7	-	-	-	0.4	1.2	6.0	26.0	36.2	42.3	104.8
PERU	1983	8.9	9.4	-	0.4	0.3	0.7	1.8	9.1	28.8	53.7	70.5	142.9
PUERTO RICO	1987	34.9	24.6	-	-	0.3	-	9.4	52.6	99.8	122.5	134.1	134.9
SURINAME	1985	14.1	14.1	-	-	-	2.2	4.2	40.0	42.9	80.0	40.0	100.0
TRINIDAD AND TOBAGO	1986	11.8	10.2	-	-	-	0.8	3.0	13.8	38.4	52.5	103.3	43.5
UNITED STATES	1987	14.4	8.0	0.4	0.0	0.0	0.2	3.5	14.6	29.1	46.4	48.5	43.3
URUGUAY	1987	15.7	7.9	-	-	-	-	0.5	8.7	28.5	52.7	69.6	60.8
VENEZUELA	1987	10.4	11.5	1.1	0.1	0.2	0.5	2.7	12.9	38.6	64.9	94.3	128.7
Female													
ARGENTINA	1986	5.0	2.8	-	0.1	0.1	0.1	0.8	4.3	9.7	15.7	19.2	23.5
BAHAMAS	1987	12.7	10.0	-	-	-	-	14.3	7.1	39.6	55.1	41.3	70.4
BARBADOS	1988	3.7	...	-	-	-	-	-	-	9.8	29.4	-	14.1
BELIZE	1986	8.4	6.7	-	-	-	-	-	-	15.3	104.0	-	57.5
BRAZIL (AREA OF INFORMATION)	1986	3.6	3.2	0.8	0.2	0.2	0.5	2.0	5.9	9.9	13.7	17.9	25.8
CANADA	1988	5.1	2.2	-	0.1	-	0.0	0.4	2.2	5.9	14.7	22.4	24.6
CHILE	1987	10.8	7.3	0.8	-	0.1	0.6	1.3	6.8	21.8	48.9	71.1	64.8
COLOMBIA	1984	1.9	1.8	0.2	0.1	0.2	0.4	0.4	1.1	6.4	7.8	15.0	24.6
COSTA RICA	1988	5.1	4.5	-	-	-	0.3	2.1	7.0	9.4	19.3	30.2	100.5
CUBA	1988	6.9	3.9	-	0.3	0.2	0.8	1.1	2.2	8.2	16.2	45.4	70.8
DOMINICA	1985	8.0	6.7	-	27.7	-	-	-	-	-	46.5	-	84.0
DOMINICAN REPUBLIC	1985	9.8	11.1	3.6	0.5	0.5	1.0	3.1	7.4	28.4	52.3	105.3	209.2
ECUADOR	1987	3.8	3.8	-	0.2	0.1	0.1	1.3	3.3	8.6	26.3	34.1	48.8
EL SALVADOR	1984	2.2	2.3	-	-	0.5	0.2	1.6	2.5	5.7	9.9	18.4	31.6
FRENCH GUIANA	1984	22.5	20.8	-	-	-	-	32.1	-	69.9	99.5	-	555.6
GUADELOUPE	1981	13.1	7.8	-	-	-	-	-	6.0	47.3	18.3	88.9	66.7
GUATEMALA	1984	5.2	5.8	-	1.5	0.8	0.5	4.0	7.4	11.8	31.8	55.2	33.3
GUYANA	1984	6.2	7.2	54.2	8.1	0.9	1.0	1.3	9.3	9.9	18.5	21.7	69.0
HONDURAS	1981	2.2	2.8	-	-	0.4	0.3	0.4	2.5	4.4	9.5	20.4	89.7
JAMAICA	1984	2.5	1.8	-	-	-	0.4	0.6	-	6.9	7.6	26.9	13.5
MARTINIQUE	1985	5.9	2.8	-	-	-	-	-	-	12.7	14.5	30.3	37.5
MEXICO	1986	9.1	9.4	1.3	0.2	0.2	0.6	3.0	12.3	28.3	54.1	71.3	102.8
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	1.2	-	-	-	6.3	-	-	-	-	-	-
PANAMA	1987	3.4	3.2	-	1.8	-	-	1.2	2.6	10.5	20.7	26.9	18.1
PARAGUAY (AREA OF INFORMATION)	1986	1.6	1.6	-	0.7	-	-	-	1.9	4.4	7.9	9.9	35.2
PERU	1983	4.0	3.8	-	0.4	0.1	0.5	0.4	3.8	10.4	23.0	28.1	58.6
PUERTO RICO	1987	8.8	5.2	3.2	-	-	-	1.8	6.1	14.3	32.1	41.9	57.0
SURINAME	1985	8.9	7.9	-	-	2.3	-	3.8	5.9	28.7	44.4	40.0	100.0
TRINIDAD AND TOBAGO	1986	4.3	3.7	-	1.8	-	0.8	2.0	4.5	18.3	9.0	17.1	32.8
UNITED STATES	1987	7.3	3.4	0.4	0.0	0.0	0.2	1.8	5.5	11.1	19.4	24.4	22.5
URUGUAY	1987	4.2	1.8	3.8	-	-	-	0.5	0.6	5.2	10.6	14.1	25.6
VENEZUELA	1987	3.7	3.6	0.8	0.5	0.3	0.4	1.1	3.6	6.9	19.1	35.8	55.3

TABLE III-9a(23).

Number of deaths from complications of pregnancy, childbirth, and the puerperium (630–676), by age and country, latest data available.

Country	Year	Age in years											
		All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
		Female											
ARGENTINA	1986	369	-	-	2	96	157	97	8	-	-	-	9
BAHAMAS	1987	3	-	-	-	1	2	-	-	-	-	-	-
BARBADOS	1988	1	-	-	-	1	-	-	-	-	-	-	-
BELIZE	1986	4	-	-	-	1	2	1	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1814	-	-	7	607	741	413	31	-	-	-	15
CANADA	1988	18	-	-	-	2	13	2	1	-	-	-	-
CHILE	1987	135	-	-	1	45	68	20	1	-	-	-	-
COLOMBIA	1984	642	-	-	-	218	267	140	10	-	-	-	7
COSTA RICA	1988	15	-	-	-	5	8	1	-	-	-	-	1
CUBA	1988	73	-	-	1	33	33	6	-	-	-	-	-
DOMINICA	1985	2	-	-	-	1	-	1	-	-	-	-	-
DOMINICAN REPUBLIC	1985	106	-	-	-	46	41	14	-	1	-	-	4
ECUADOR	1987	355	-	-	2	133	117	90	7	-	-	-	6
EL SALVADOR	1984	99	-	-	-	42	25	31	1	-	-	-	-
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	3	-	-	-	1	2	-	-	-	-	-	-
GUATEMALA	1984	236	-	-	-	56	104	60	4	-	-	-	12
GUYANA	1984	17	-	-	-	4	9	3	-	-	-	-	1
HONDURAS	1981	28	-	-	-	11	6	9	1	-	-	1	-
JAMAICA	1984	14	-	-	1	7	4	2	-	-	-	-	-
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	1681	-	-	9	525	665	436	40	-	-	-	6
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	1	-	-	-	-	-
PANAMA	1987	22	-	-	-	8	9	5	-	-	-	-	-
PARAGUAY (AREA OF INFORMATION)	1986	140	-	-	-	41	44	45	1	-	-	-	9
PERU	1983	611	-	-	2	136	208	201	20	-	-	-	44
PUERTO RICO	1987	11	-	-	-	2	6	3	-	-	-	-	-
SURINAME	1985	7	-	-	1	4	-	2	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	18	-	-	-	6	7	4	1	-	-	-	-
UNITED STATES	1987	251	-	-	1	75	132	42	1	-	-	-	-
URUGUAY	1987	15	-	-	1	2	6	6	-	-	-	-	-
VENEZUELA	1987	284	-	-	1	85	123	73	2	-	-	-	-

TABLE III-9b(23).

Crude, age-adjusted, and age-specific death rates (per 100,000 women), from complications of pregnancy, childbirth, and the puerperium (630–676), by age and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years								
				Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
				Female									
ARGENTINA	1986	2.4	2.4	-	-	0.1	4.1	7.1	5.3	0.5	-	-	-
BAHAMAS	1987	2.4	2.0	-	-	-	4.0	9.5	-	-	-	-	-
BARBADOS	1988	0.7	...	-	-	-	3.8	-	-	-	-	-	-
BELIZE	1986	4.8	4.5	-	-	-	5.6	16.4	11.2	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	2.6	2.4	-	-	0.0	4.3	6.7	5.7	0.6	-	-	-
CANADA	1988	0.1	0.1	-	-	-	0.1	0.6	0.1	0.1	-	-	-
CHILE	1987	2.1	1.9	-	-	0.1	3.6	6.5	2.5	0.2	-	-	-
COLOMBIA	1984	4.6	4.1	-	-	-	7.1	12.0	10.0	1.0	-	-	-
COSTA RICA	1988	1.1	0.9	-	-	-	1.7	3.4	0.7	-	-	-	-
CUBA	1988	1.5	1.3	-	-	0.1	3.0	4.6	0.9	-	-	-	-
DOMINICA	1985	5.3	5.7	-	-	-	11.3	-	34.8	-	-	-	-
DOMINICAN REPUBLIC	1985	3.3	2.8	-	-	-	6.5	8.5	4.9	-	0.8	-	-
ECUADOR	1987	7.2	7.0	-	-	0.2	13.3	16.5	19.5	2.2	-	-	-
EL SALVADOR	1984	4.2	4.4	-	-	-	9.0	7.8	15.5	0.7	-	-	-
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	1.8	1.7	-	-	-	2.8	8.8	-	-	-	-	-
GUATEMALA	1984	6.2	6.3	-	-	-	7.6	20.7	18.5	1.7	-	-	-
GUYANA	1984	3.6	3.0	-	-	-	3.9	11.5	6.9	-	-	-	-
HONDURAS	1981	1.5	1.6	-	-	-	3.0	2.6	5.6	0.9	-	-	6.9
JAMAICA	1984	1.2	1.1	-	-	0.4	2.5	2.4	2.3	-	-	-	-
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	4.1	4.1	-	-	0.1	6.2	11.5	11.9	1.6	-	-	-
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	1.2	-	-	-	-	-	11.1	-	-	-	-
PANAMA	1987	2.0	1.8	-	-	-	3.4	5.4	4.4	-	-	-	-
PARAGUAY (AREA OF INFORMATION)	1986	12.3	11.5	-	-	-	17.8	25.4	43.7	1.5	-	-	-
PERU	1983	6.6	6.1	-	-	0.1	7.3	15.6	22.3	3.0	-	-	-
PUERTO RICO	1987	0.6	0.5	-	-	-	0.6	2.2	1.3	-	-	-	-
SURINAME	1985	3.7	3.5	-	-	2.3	8.9	-	11.8	-	-	-	-
TRINIDAD AND TOBAGO	1986	3.0	2.6	-	-	-	4.6	6.9	6.0	2.3	-	-	-
UNITED STATES	1987	0.2	0.2	-	-	0.0	0.4	0.6	0.2	0.0	-	-	-
URUGUAY	1987	1.0	1.0	-	-	0.4	0.8	2.9	3.4	-	-	-	-
VENEZUELA	1987	3.1	2.9	-	-	0.0	4.6	8.8	7.9	0.3	-	-	-

TABLE III-9a(24).

Number of deaths from abortion (630–639), by age and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
						Female							
ARGENTINA	1986	129	-	-	-	33	65	24	3	-	-	-	4
BAHAMAS	1987	-	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	1	-	-	-	1	-	-	-	-	-	-	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	241	-	-	1	80	110	48	2	-	-	-	-
CANADA	1988	1	-	-	-	-	1	-	-	-	-	-	-
CHILE	1987	47	-	-	-	9	33	5	-	-	-	-	-
COLOMBIA	1984	148	-	-	-	49	80	15	2	-	-	-	2
COSTA RICA	1988	1	-	-	-	-	1	-	-	-	-	-	-
CUBA	1988	16	-	-	-	6	9	1	-	-	-	-	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	18	-	-	-	9	7	1	-	-	-	-	1
ECUADOR	1987	27	-	-	-	15	6	5	1	-	-	-	-
EL SALVADOR	1984	7	-	-	-	2	1	4	-	-	-	-	-
GUADELOUPE	1981	1	-	-	-	-	1	-	-	-	-	-	-
GUATEMALA	1984	40	-	-	-	12	8	20	-	-	-	-	-
GUYANA	1984	5	-	-	-	2	3	-	-	-	-	-	-
HONDURAS	1981	1	-	-	-	-	1	-	-	-	-	-	-
JAMAICA	1984	9	-	-	1	5	2	1	-	-	-	-	-
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	149	-	-	1	60	55	30	2	-	-	-	1
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	5	-	-	-	2	1	2	-	-	-	-	-
PARAGUAY (AREA OF INFORMATION)	1986	19	-	-	-	11	3	4	-	-	-	-	1
PERU	1983	68	-	-	-	16	26	13	3	-	-	-	10
PUERTO RICO	1987	-	-	-	-	-	-	-	-	-	-	-	-
ST. VINCENT & THE GRENADINES	1986	-	-	-	-	-	-	-	-	-	-	-	-
SURINAME	1985	1	-	-	-	1	-	-	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	9	-	-	-	5	2	1	1	-	-	-	-
UNITED STATES	1987	44	-	-	-	12	29	3	-	-	-	-	-
URUGUAY	1987	4	-	-	-	1	1	2	-	-	-	-	-
VENEZUELA	1987	55	-	-	-	10	31	14	-	-	-	-	-

TABLE III-9b(24).

Crude, age-adjusted, and age-specific death rates (per 100,000 women), from abortion (630–639), by age and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
							Female						
ARGENTINA	1986	0.8	0.8	-	-	-	1.4	3.0	1.3	0.2	-	-	-
BAHAMAS	1987	-	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	0.7	...	-	-	-	3.8	-	-	-	-	-	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	0.3	0.3	-	-	0.0	0.6	1.0	0.7	0.0	-	-	-
CANADA	1988	0.0	0.0	-	-	-	-	0.0	-	-	-	-	-
CHILE	1987	0.7	0.6	-	-	-	0.7	3.2	0.6	-	-	-	-
COLOMBIA	1984	1.1	0.9	-	-	-	1.6	3.6	1.1	0.2	-	-	-
COSTA RICA	1988	0.1	0.1	-	-	-	-	0.4	-	-	-	-	-
CUBA	1988	0.3	0.3	-	-	-	0.5	1.3	0.2	-	-	-	-
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	0.6	0.5	-	-	-	1.3	1.4	0.4	-	-	-	-
ECUADOR	1987	0.5	0.5	-	-	-	1.5	0.8	1.1	0.3	-	-	-
EL SALVADOR	1984	0.3	0.3	-	-	-	0.4	0.3	2.0	-	-	-	-
GUADELOUPE	1981	0.6	0.6	-	-	-	-	4.4	-	-	-	-	-
GUATEMALA	1984	1.0	1.2	-	-	-	1.6	1.6	6.2	-	-	-	-
GUYANA	1984	1.1	0.9	-	-	-	1.9	3.8	-	-	-	-	-
HONDURAS	1981	0.1	0.1	-	-	-	-	0.4	-	-	-	-	-
JAMAICA	1984	0.8	0.7	-	-	0.4	1.8	1.2	1.2	-	-	-	-
MARTINIQUE	1985	-	-	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	0.4	0.3	-	-	0.0	0.7	0.9	0.8	0.1	-	-	-
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	0.4	0.4	-	-	-	0.8	0.6	1.8	-	-	-	-
PARAGUAY (AREA OF INFORMATION)	1986	1.7	1.5	-	-	-	4.8	1.7	3.9	-	-	-	-
PERU	1983	0.7	0.6	-	-	-	0.9	1.9	1.4	0.5	-	-	-
PUERTO RICO	1987	-	-	-	-	-	-	-	-	-	-	-	-
ST. VINCENT & THE GRENADINES	1986	-	-	-	-	-	-	-	-	-	-	-	-
SURINAME	1985	0.5	0.4	-	-	-	2.2	-	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	1.5	1.3	-	-	-	3.6	2.0	1.5	2.3	-	-	-
UNITED STATES	1987	0.0	0.0	-	-	-	0.1	0.1	0.0	-	-	-	-
URUGUAY	1987	0.3	0.3	-	-	-	0.4	0.5	1.1	-	-	-	-
VENEZUELA	1987	0.6	0.6	-	-	-	0.5	2.2	1.5	-	-	-	-

TABLE III-9a(25).

Number of deaths from symptoms, signs, and ill-defined conditions (780–799), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	5455	932	204	63	115	151	236	349	586	801	1533	485
BAHAMAS	1987	36	3	-	-	-	3	2	3	3	7	14	1
BARBADOS	1988	82	1	-	-	1	-	2	3	4	11	60	-
BELIZE	1986	85	16	3	3	-	1	-	3	2	9	44	4
BRAZIL (AREA OF INFORMATION)	1986	165552	31104	8129	2731	3966	6171	8933	12283	16180	25666	48241	2146
CANADA	1988	3122	458	33	23	123	145	148	176	324	407	1283	2
CHILE	1987	5733	217	61	33	64	83	110	212	499	1116	3333	5
COLOMBIA	1984	7889	382	701	267	252	269	330	426	740	1253	3155	114
COSTA RICA	1988	251	37	7	3	6	2	6	7	11	34	133	5
CUBA	1988	151	13	3	3	13	19	23	10	9	10	48	-
DOMINICA	1985	80	-	-	-	1	-	-	-	3	2	15	59
DOMINICAN REPUBLIC	1985	4178	379	201	80	109	115	172	205	355	589	1979	-
ECUADOR	1987	7771	1005	595	284	269	272	322	357	536	843	3097	91
EL SALVADOR	1984	6727	32	791	236	208	204	294	468	689	1108	2509	188
GUADELOUPE	1981	203	15	-	-	6	3	7	5	9	25	133	-
GUATEMALA	1984	6908	1248	1344	444	284	304	328	324	444	688	1456	44
GUYANA	1984	515	29	12	14	37	27	17	19	48	86	195	31
HONDURAS	1981	6338	1167	844	323	249	206	227	275	336	487	2224	-
JAMAICA	1984	1745	70	44	40	45	44	53	103	183	329	808	28
MARTINIQUE	1985	237	-	2	1	4	4	11	9	20	36	146	4
MEXICO	1986	17466	3119	1482	562	646	636	772	907	1262	1589	6154	337
NETHERLANDS ANTILLES (CURACAO)	1981	88	2	-	-	-	2	5	2	5	19	53	-
PANAMA	1987	751	92	49	35	31	28	27	46	46	123	269	5
PARAGUAY (AREA OF INFORMATION)	1986	2193	314	121	48	57	51	81	115	194	269	851	82
PERU	1983	6542	1123	695	219	239	212	253	260	330	518	1928	765
PUERTO RICO	1987	177	14	-	1	3	5	7	4	10	22	110	1
ST. KITTS AND NEVIS	1985	45	3	1	-	-	-	1	1	-	...	...	3
SAINT LUCIA	1988	93	2	-	1	-	-	1	2	5	11	71	2
ST. VINCENT & THE GRENADINES	1986	46	2	1	-	1	3	-	1	1	6	32	-
SURINAME	1985	369	27	14	4	9	2	7	19	36	67	178	5
TRINIDAD AND TOBAGO	1986	191	12	2	-	17	19	9	4	8	21	99	-
UNITED STATES	1987	31261	6137	305	159	880	2230	2166	1815	2931	4282	10272	84
URUGUAY	1987	1866	102	19	12	14	24	46	159	294	401	762	33
VENEZUELA	1987	10705	1266	534	243	240	294	467	779	1348	1901	3611	22
Male													
ARGENTINA	1986	3132	544	102	29	55	99	138	217	402	478	753	315
BAHAMAS	1987	16	2	-	-	-	2	1	3	-	3	4	1
BARBADOS	1988	40	1	-	-	1	-	2	2	4	10	20	-
BELIZE	1986	44	9	2	2	-	-	-	2	-	5	22	2
BRAZIL (AREA OF INFORMATION)	1986	93351	17083	4199	1545	2520	4121	5988	8126	10226	14767	23449	1327
CANADA	1988	1747	285	19	19	85	112	95	130	228	260	512	2
CHILE	1987	2832	135	38	18	32	48	67	127	279	615	1468	5
COLOMBIA	1984	4052	232	381	150	146	146	177	224	399	673	1442	82
COSTA RICA	1988	132	17	2	3	4	2	3	5	5	19	70	2
CUBA	1988	97	8	1	3	8	15	18	6	8	7	23	-
DOMINICA	1985	32	-	-	-	1	-	-	-	3	1	4	23
DOMINICAN REPUBLIC	1985	2121	219	106	46	46	62	86	81	185	339	951	-
ECUADOR	1987	3791	530	301	158	141	146	169	202	309	538	1265	32
EL SALVADOR	1984	3334	15	421	151	109	119	142	252	357	557	1138	73
GUADELOUPE	1981	88	6	-	-	4	1	4	1	6	20	46	-
GUATEMALA	1984	3556	636	708	224	156	148	148	208	208	408	692	20
GUYANA	1984	255	11	7	7	22	16	12	11	28	52	67	22
HONDURAS	1981	3248	678	425	164	100	81	99	134	170	241	1156	-
JAMAICA	1984	908	44	32	25	29	27	30	53	101	186	365	16
MARTINIQUE	1985	110	-	-	-	2	3	9	7	10	23	54	2
MEXICO	1986	7004	952	600	234	271	269	341	431	569	721	2527	86
NETHERLANDS ANTILLES (CURACAO)	1981	29	-	-	-	-	1	4	2	3	9	10	-
PANAMA	1987	408	53	23	24	13	15	14	27	28	71	137	3
PARAGUAY (AREA OF INFORMATION)	1986	1073	169	58	21	31	20	46	64	113	146	358	47
PERU	1983	3220	621	348	111	117	80	130	145	202	265	800	401
PUERTO RICO	1987	86	10	-	1	-	4	4	4	7	16	39	1
ST. KITTS AND NEVIS	1985	13	1	-	-	-	-	-	1	-	...	...	3
SAINT LUCIA	1988	37	2	-	1	-	-	-	2	2	7	22	1
ST. VINCENT & THE GRENADINES	1986	21	-	-	-	1	3	-	1	-	3	13	-
SURINAME	1985	171	17	6	2	5	2	6	8	16	33	75	1
TRINIDAD AND TOBAGO	1986	89	7	-	-	9	12	6	4	8	10	33	-
UNITED STATES	1987	17440	3685	161	96	603	1554	1504	1160	1887	2615	4116	59
URUGUAY	1987	1057	56	10	8	10	10	27	117	219	256	323	23
VENEZUELA	1987	5836	706	270	122	134	165	262	475	853	1080	1755	14
Female													
ARGENTINA	1986	2261	383	99	32	56	50	98	130	182	320	773	138
BAHAMAS	1987	20	1	-	-	-	1	1	-	3	4	10	-
BARBADOS	1988	42	-	-	-	-	-	-	1	-	1	40	-
BELIZE	1986	41	7	1	1	-	1	-	1	2	4	22	2
BRAZIL (AREA OF INFORMATION)	1986	72025	13992	3928	1185	1438	2043	2936	4149	5935	10885	24756	778
CANADA	1988	1375	173	14	4	36	33	53	46	96	147	771	-
CHILE	1987	2901	82	23	15	32	35	43	85	220	501	1865	-
COLOMBIA	1984	3837	150	320	117	106	123	153	202	341	580	1713	32
COSTA RICA	1988	119	20	5	-	2	-	3	2	6	15	63	3
CUBA	1988	54	5	2	-	5	4	5	4	1	3	25	-
DOMINICA	1985	48	-	-	-	-	-	-	-	-	1	11	36
DOMINICAN REPUBLIC	1985	2057	160	95	34	57	53	86	124	170	250	1028	-
ECUADOR	1987	3980	475	294	126	128	126	153	155	227	405	1832	59
EL SALVADOR	1984	3393	17	370	85	99	85	152	216	332	551	1371	115
GUADELOUPE	1981	115	9	-	-	2	2	3	4	3	5	87	-
GUATEMALA	1984	3352	612	636	220	128	156	180	116	236	280	764	24
GUYANA	1984	260	18	5	7	15	11	5	8	20	34	128	9
HONDURAS	1981	3090	489	419	159	149	125	128	141	166	246	1068	-
JAMAICA	1984	837	26	12	15	16	17	23	50	82	143	441	12
MARTINIQUE	1985	127	-	2	1	2	1	2	2	10	13	92	2
MEXICO	1986	6944	751	639	214	232	249	285	319	485	628	3082	60
NETHERLANDS ANTILLES (CURACAO)	1981	59	2	-	-	-	1	1	-	2	10	43	-
PANAMA	1987	343	39	26	11	18	13	13	19	18	52	132	2
PARAGUAY (AREA OF INFORMATION)	1986	1120	145	63	27	26	31	45	51	81	123	493	35
PERU	1983	3322	502	347	108	122	132	123	115	128	253	1128	364
PUERTO RICO	1987	91	4	-	-	3	1	3	-	3	6	71	-
ST. KITTS AND NEVIS	1985	32	2	1	-	-	-	1	-	-	...	...	-
SAINT LUCIA	1988	56	-	-	-	-	-	1	-	1	4	49	1
ST. VINCENT & THE GRENADINES	1986	25	2	1	-	-	-	-	-	-	3	19	-
SURINAME	1985	198	10	8	2	4	7	1	11	20	34	104	4
TRINIDAD AND TOBAGO	1986	102	5	2	-	8	7	3	-	-	11	66	-
UNITED STATES	1987	13821	2452	144	63	277	676	662	655	1044	1867	6156	25
URUGUAY	1987	809	46	9	6	4	14	19	42	75	145	439	10
VENEZUELA	1987	4869	560	264	121	106	129	205	304	495	821	1856	8

TABLE III-9b(25).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from symptoms, signs, and ill-defined conditions (780–799), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	17.7	12.1	138.0	7.3	1.0	2.4	3.4	6.4	11.4	22.5	46.6	169.4
BAHAMAS	1987	14.5	11.7	69.3	-	-	-	7.2	7.3	15.3	22.1	80.2	316.7
BARBADOS	1988	31.9	...	...	-	-	1.9	-	7.8	16.3	23.1	72.4	540.5
BELIZE	1986	50.9	34.5	260.8	18.8	8.0	-	4.1	-	23.4	21.5	142.0	1301.8
BRAZIL (AREA OF INFORMATION)	1986	119.5	104.4	583.1	53.9	8.5	14.1	28.0	61.7	120.1	225.9	627.4	2582.5
CANADA	1988	12.0	8.8	121.9	2.1	0.6	2.8	3.1	4.0	6.8	13.7	24.4	122.1
CHILE	1987	45.7	31.4	81.6	5.8	1.3	2.5	4.0	7.1	19.9	64.4	240.6	1360.4
COLOMBIA	1984	28.1	29.0	46.3	24.7	4.0	4.1	6.0	11.6	22.4	55.3	160.1	1083.4
COSTA RICA	1988	8.8	8.6	45.5	2.2	0.5	1.0	0.4	2.1	3.6	8.3	45.3	388.9
CUBA	1988	1.5	1.2	6.9	0.5	0.2	0.6	1.3	1.8	1.0	1.3	2.0	16.4
DOMINICA	1985	105.2	15.3	-	-	-	5.4	-	-	-	76.5	64.5	789.5
DOMINICAN REPUBLIC	1985	65.1	77.1	334.8	27.0	4.8	7.2	11.9	30.4	51.8	139.3	462.0	2962.6
ECUADOR	1987	78.3	82.9	491.5	48.1	11.0	13.3	19.1	34.8	57.2	130.5	382.4	2613.5
EL SALVADOR	1984	142.0	144.4	22.0	122.3	18.2	22.1	31.5	73.0	169.7	353.7	1030.7	4672.3
GUADELOUPE	1981	62.1	34.5	231.3	-	-	8.9	6.9	21.5	18.1	41.3	156.3	1330.0
GUATEMALA	1984	89.3	92.5	399.9	122.7	20.5	19.0	30.1	50.6	67.6	136.4	436.8	2107.1
GUYANA	1984	55.0	53.3	191.2	12.1	6.3	17.7	17.1	20.4	32.3	111.1	323.3	1822.4
HONDURAS	1981	165.8	200.0	724.8	145.5	29.6	34.1	44.1	71.2	120.7	230.1	635.8	8267.7
JAMAICA	1984	75.8	54.4	130.2	18.1	7.4	8.0	13.1	33.0	75.3	148.8	367.2	1571.2
MARTINIQUE	1985	72.3	30.4	-	8.8	1.9	5.3	8.1	30.9	30.4	78.1	190.5	1125.1
MEXICO	1986	21.5	21.2	121.5	15.3	2.5	3.8	5.5	10.7	18.2	39.0	85.6	604.0
NETHERLANDS ANTILLES (CURACAO)	1981	53.7	32.5	50.0	-	-	-	9.1	29.4	16.7	55.6	316.7	1325.0
PANAMA	1987	33.0	30.9	159.6	21.0	6.2	6.4	8.2	11.6	29.6	42.4	178.5	835.4
PARAGUAY (AREA OF INFORMATION)	1986	96.6	101.9	585.3	42.1	8.2	12.9	14.7	44.8	85.8	198.8	477.8	3445.5
PERU	1983	35.0	31.5	163.0	30.7	4.6	6.3	7.8	13.9	19.9	39.0	107.8	1005.2
PUERTO RICO	1987	5.0	2.8	21.7	-	0.1	0.4	1.0	1.6	1.3	4.1	11.9	99.9
ST. KITTS AND NEVIS	1985	97.7	...	292.4	23.0	-	-	-	32.8	43.3	-	...	...
SAINT LUCIA	1988	69.9	45.3	55.8	-	3.2	-	-	8.6	26.9	45.7	231.6	2762.6
ST. VINCENT & THE GRENADINES	1986	43.8	30.5	73.9	7.7	-	4.0	21.9	-	18.7	-	167.1	1553.4
SURINAME	1985	98.4	81.6	230.7	35.0	4.5	10.0	4.0	21.9	65.5	189.5	670.0	2983.3
TRINIDAD AND TOBAGO	1986	15.9	12.1	37.6	1.8	-	6.5	9.4	6.8	4.7	12.5	47.0	462.6
UNITED STATES	1987	12.8	10.0	160.3	2.1	0.5	2.3	5.1	6.3	7.8	13.3	24.2	84.4
URUGUAY	1987	61.0	30.0	190.9	8.5	2.2	2.8	5.8	13.1	46.3	95.9	193.6	625.4
VENEZUELA	1987	58.6	61.8	245.0	24.7	5.4	6.4	10.4	24.9	65.9	166.8	450.5	1610.9
Male													
ARGENTINA	1986	20.5	14.4	157.9	7.2	0.9	2.3	4.4	7.4	14.4	32.3	82.5	206.3
BAHAMAS	1987	13.0	12.1	92.6	-	-	-	9.6	7.6	31.7	-	77.1	253.2
BARBADOS	1988	32.8	...	...	-	-	3.8	-	16.4	24.4	56.3	166.7	500.0
BELIZE	1986	52.7	36.8	287.6	24.7	10.6	-	-	-	32.0	-	182.9	1341.5
BRAZIL (AREA OF INFORMATION)	1986	135.2	121.6	640.2	55.4	9.6	17.8	37.5	83.5	160.1	290.9	751.3	2731.4
CANADA	1988	13.5	11.1	148.7	2.4	1.0	3.8	4.8	5.1	9.9	19.9	34.7	127.8
CHILE	1987	45.6	37.2	99.1	7.0	1.4	2.5	4.6	8.9	24.7	77.1	304.2	1566.7
COLOMBIA	1984	28.7	32.3	55.1	26.5	4.4	4.7	6.4	12.2	23.6	62.7	188.4	1193.7
COSTA RICA	1988	9.1	10.0	40.5	1.2	0.9	1.3	0.8	2.1	5.2	7.7	53.8	489.5
CUBA	1988	1.9	1.5	8.3	0.3	0.3	0.7	2.0	2.8	1.2	2.3	2.7	15.4
DOMINICA	1985	83.5	18.1	-	-	-	10.4	-	-	-	169.5	71.4	563.4
DOMINICAN REPUBLIC	1985	65.7	79.7	377.7	28.1	5.4	6.4	12.8	30.4	41.5	141.8	523.1	2981.2
ECUADOR	1987	75.9	85.0	510.3	48.0	12.1	13.8	20.3	36.5	65.2	153.7	457.9	2991.3
EL SALVADOR	1984	140.1	157.9	19.9	127.8	23.0	22.9	36.4	70.2	184.5	379.4	1167.7	5149.3
GUADELOUPE	1981	55.2	34.3	184.0	-	-	10.9	4.8	25.3	7.8	55.0	285.7	1150.0
GUATEMALA	1984	90.9	95.5	401.3	126.9	20.4	20.6	29.2	45.6	86.3	128.2	524.4	2005.3
GUYANA	1984	54.3	51.8	141.2	14.0	6.1	20.7	20.1	29.8	38.6	129.6	406.3	1367.3
HONDURAS	1981	169.5	212.3	823.5	146.0	29.9	27.2	34.5	62.1	117.6	234.5	646.1	9322.6
JAMAICA	1984	79.7	63.4	160.5	26.0	9.0	10.2	16.1	40.1	82.8	176.9	450.4	1682.0
MARTINIQUE	1985	69.0	34.5	-	-	-	5.3	12.1	53.6	50.7	84.7	255.6	1080.0
MEXICO	1986	17.2	18.3	72.7	12.2	2.1	3.1	4.6	9.6	17.9	37.0	85.4	571.6
NETHERLANDS ANTILLES (CURACAO)	1981	35.4	25.2	-	-	-	-	9.1	50.0	33.3	75.0	300.0	500.0
PANAMA	1987	35.2	33.4	179.5	19.2	8.4	5.3	8.6	11.8	34.0	50.7	200.0	878.2
PARAGUAY (AREA OF INFORMATION)	1986	94.5	106.1	603.2	39.8	7.1	13.4	11.5	46.0	97.9	240.4	561.5	3409.5
PERU	1983	34.2	32.0	176.9	30.2	4.6	6.1	5.8	14.2	22.2	49.1	118.3	968.5
PUERTO RICO	1987	5.0	3.3	30.4	-	0.3	-	1.6	2.0	2.7	6.1	18.5	77.4
ST. KITTS AND NEVIS	1985	57.9	...	194.6	-	-	-	-	-	98.0	-	...	...
SAINT LUCIA	1988	57.4	46.4	113.1	-	6.4	-	-	-	60.1	71.7	328.6	2200.0
ST. VINCENT & THE GRENADINES	1986	41.2	35.1	-	-	-	8.0	48.5	-	44.4	-	188.7	1645.6
SURINAME	1985	92.4	92.4	294.0	30.0	4.4	11.1	8.3	40.0	57.1	160.0	660.0	3750.0
TRINIDAD AND TOBAGO	1986	14.8	12.5	43.4	-	-	7.0	11.9	9.2	9.6	26.2	46.9	358.7
UNITED STATES	1987	14.7	12.3	187.8	2.2	0.5	3.1	7.2	8.9	10.3	18.2	33.4	95.8
URUGUAY	1987	70.3	37.6	205.5	8.8	2.2	4.0	4.8	15.6	69.4	149.8	274.1	676.9
VENEZUELA	1987	63.2	71.3	267.9	24.5	5.3	7.0	11.5	27.8	80.4	216.2	544.6	2052.6
Female													
ARGENTINA	1986	14.6	9.9	115.7	7.2	1.1	2.4	2.3	5.4	8.4	13.4	33.5	143.1
BAHAMAS	1987	15.9	10.8	46.0	-	-	-	4.8	7.1	-	41.3	82.6	352.1
BARBADOS	1988	31.1	...	-	-	-	-	-	-	9.8	-	10.9	563.4
BELIZE	1986	49.1	32.2	232.8	12.7	5.5	-	8.2	-	15.3	41.6	122.3	1264.4
BRAZIL (AREA OF INFORMATION)	1986	103.7	87.8	524.9	52.4	7.4	10.2	18.5	40.2	80.6	162.7	512.1	2452.3
CANADA	1988	10.4	6.5	94.0	1.9	0.2	1.8	1.4	2.9	3.5	7.8	16.0	118.7
CHILE	1987	45.8	26.9	63.3	4.4	1.2	2.5	3.4	5.4	15.5	53.3	191.5	1232.7
COLOMBIA	1984	27.4	26.3	37.1	22.9	3.6	3.4	5.5	10.9	21.2	48.7	136.3	1005.3
COSTA RICA	1988	8.4	7.5	50.8	3.2	-	0.7	-	2.1	2.1	8.9	37.8	316.6
CUBA	1988	1.1	0.8	5.5	0.6	-	0.5	0.6	0.8	0.8	0.3	1.2	17.5
DOMINICA	1985	127.3	12.2	-	-	-	-	-	-	-	-	58.8	924.4
DOMINICAN REPUBLIC	1985	64.5	74.3	289.8	26.0	4.1	8.0	11.0	30.3	61.9	136.8	398.7	2945.6
ECUADOR	1987	80.7	80.5	472.1	48.3	9.9	12.8	17.8	33.2	49.3	108.4	313.7	2792.7
EL SALVADOR	1984	143.8	133.3	24.4	116.5	15.3	21.2	26.5	75.8	155.2	329.7	921.4	4338.6
GUADELOUPE	1981	68.7	34.5	279.0	-	-	5.6	8.8	17.9	27.0	27.5	55.6	1450.0
GUATEMALA	1984	87.6	89.5	398.4	118.3	20.7	17.3	31.1	55.6	48.7	144.5	351.3	2122.2
GUYANA	1984	55.7	54.3	243.8	10.2	6.4	14.5	14.0	11.6	26.3	92.6	246.4	2206.9
HONDURAS	1981	162.1	189.4	621.4	145.0	29.2	41.0	53.9	80.3	123.8	225.9	626.0	7365.5
JAMAICA	1984	72.0	46.3	98.7	10.0	5.7	5.8	10.0	26.8	68.7	124.4	296.1	1489.9
MARTINIQUE	1985	75.4	26.8	-	18.3	3.8	5.3	4.0	10.6	12.7	72.5	131.3	1150.0
MEXICO	1986	17.1	16.0	59.7	13.5	2.0	2.8	4.3	7.8	12.4	28.5	62.3	534.4
NETHERLANDS ANTILLES (CURACAO)	1981	72.0	40.3	100.0	-	-	-	9.1	11.1	-	40.0	333.3	2150.0
PANAMA	1987	30.8	28.3	138.7	22.8	4.0	7.6	7.8	11.4	25.0	33.8	155.7	795.2
PARAGUAY (AREA OF INFORMATION)	1986	98.5	98.0	565.7	44.6	9.3	11.3	17.9	43.7	74.3	160.1	405.9	3471.8
PERU	1983	35.8	30.9	148.5	31.2	4.7	6.5	9.9	13.6	17.5	29.5	98.7	1033.0
PUERTO RICO	1987	5.0	2.4	12.7	-	-	0.9	0.4	1.3	-	2.3	6.1	118.9
ST. KITTS AND NEVIS	1985	135.5	...	390.6	46.9	-	-	-	57.8	-	-	...	...
SAINT LUCIA	1988	81.6	43.1	-	-	-	-	-	16.4	-	26.5	152.7	3121.0
ST. VINCENT & THE GRENADINES	1986	46.3	27.7	150.7	15.6	-	-	-	-	-	-	150.0	1496.1
SURINAME	1985	104.2	75.7	168.9	40.0	4.5	8.9	-	5.9	73.3	222.2	680.0	2600.0
TRINIDAD AND TOBAGO	1986	16.9	11.4	31.7	3.6	-	6.1	6.9	4.5	-	-	47.0	541.0
UNITED STATES	1987	11.1	7.7	131.3	2.0	0.4	1.5	3.1	3.8	5.5	9.0	16.9	78.2
URUGUAY	1987	52.0	23.3	175.7	8.2	2.2	1.6	6.8	10.7	24.1	46.8	127.5	592.3
VENEZUELA	1987	53.9	53.3	221.2	24.9	5.5	5.8	9.2	22.1	51.4	122.5	367.1	1629.5

TABLE III-9a(26).

Number of deaths from accidents and violence (E800–E999), by age, sex, and country, latest data available.

Country	Year	Age in years: All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	16669	598	687	999	2358	2253	2036	1922	1879	1660	1959	318
BAHAMAS	1987	184	7	12	14	43	44	13	18	13	11	8	1
BARBADOS	1988	113	-	4	5	11	27	11	9	11	13	24	-
BELIZE	1986	85	3	5	5	17	30	7	4	7	2	4	1
BRAZIL (AREA OF INFORMATION)	1986	95966	1123	2864	6745	23730	22440	14189	9533	6158	4021	3480	1683
CANADA	1988	13628	67	219	427	2457	2529	1797	1282	1293	1145	2407	5
CHILE	1987	8404	693	322	387	1314	1545	1182	933	818	600	591	19
COLOMBIA	1984	24455	453	1204	1500	5896	6133	3407	2119	1323	988	875	557
COSTA RICA	1988	1219	18	52	60	214	240	155	127	90	84	162	17
CUBA	1988	8278	83	168	387	1733	1414	1035	805	624	668	1355	6
DOMINICA	1985	21	-	1	-	2	5	1	3	2	4	1	2
DOMINICAN REPUBLIC	1985	2165	45	102	157	470	446	271	188	143	101	242	-
ECUADOR	1987	6169	142	426	646	1155	1194	781	584	457	326	406	52
EL SALVADOR	1984	5856	37	100	287	2285	1189	707	465	347	229	206	104
GUADELOUPE	1981	277	4	-	17	46	39	35	38	31	27	40	-
GUATEMALA	1984	4028	84	128	216	992	1044	556	412	224	176	144	52
GUYANA	1984	427	3	18	35	94	85	44	36	45	29	23	15
HONDURAS	1981	2061	13	83	142	476	473	341	213	120	72	128	-
JAMAICA	1984	444	17	39	47	87	98	43	31	19	26	32	5
MARTINIQUE	1985	172	1	2	9	28	37	16	23	22	15	35	4
MEXICO	1986	62544	1212	2833	4853	13640	13176	8723	6152	4333	3038	3788	796
NETHERLANDS ANTILLES (CURACAO)	1981	45	1	1	2	10	9	8	5	3	5	3	-
PANAMA	1987	1157	39	53	79	255	244	142	95	87	69	82	12
PARAGUAY (AREA OF INFORMATION)	1986	915	25	40	95	209	163	102	70	76	46	66	23
PERU	1983	5734	152	362	619	1220	985	687	531	416	300	272	190
PUERTO RICO	1987	2167	16	23	73	405	482	365	222	201	157	200	23
ST. KITTS AND NEVIS	1985	13	-	1	2	1	1	1	2	1	...	...	-
SAINT LUCIA	1988	59	2	-	5	12	9	8	9	7	3	4	-
ST. VINCENT & THE GRENADINES	1988	40	2	1	4	5	10	4	6	3	3	2	2
SURINAME	1985	266	3	20	18	47	37	40	34	22	22	21	2
TRINIDAD AND TOBAGO	1986	681	13	36	28	139	151	95	58	58	52	50	1
UNITED STATES	1987	149942	1280	3331	4919	29390	30697	20358	12756	12921	13057	20961	272
URUGUAY	1987	1833	54	43	92	218	197	201	193	269	209	339	18
VENEZUELA	1987	10915	410	555	817	2629	2338	1316	980	755	536	537	42
Male													
ARGENTINA	1986	11932	307	420	684	1848	1823	1621	1488	1404	1153	1016	168
BAHAMAS	1987	140	4	7	8	38	36	9	13	12	8	4	1
BARBADOS	1988	82	-	3	2	10	23	9	8	8	3	11	-
BELIZE	1986	65	2	1	4	11	27	5	3	6	2	3	1
BRAZIL (AREA OF INFORMATION)	1986	77948	617	1744	4588	20172	19539	12128	8007	4926	2857	1953	1417
CANADA	1988	9521	31	135	302	1994	2014	1362	919	933	744	1085	2
CHILE	1987	6530	378	205	289	1097	1340	1000	782	661	432	317	19
COLOMBIA	1984	20336	244	722	1062	5067	5564	3026	1816	1094	731	514	496
COSTA RICA	1988	932	9	37	37	177	205	128	105	72	65	84	13
CUBA	1988	5563	46	109	277	1113	996	789	615	471	440	701	6
DOMINICA	1985	20	-	1	-	2	5	1	3	2	3	1	2
DOMINICAN REPUBLIC	1985	1691	24	62	103	383	375	232	155	113	68	176	-
ECUADOR	1987	4800	79	255	424	939	1041	667	499	356	247	249	44
EL SALVADOR	1984	5097	24	59	178	2058	1076	620	397	296	170	131	88
GUADELOUPE	1981	200	2	-	12	35	27	28	34	22	22	18	-
GUATEMALA	1984	3384	48	88	156	852	944	472	344	200	136	96	48
GUYANA	1984	325	1	10	24	69	73	37	28	35	21	17	10
HONDURAS	1981	1758	6	53	90	409	429	317	184	107	59	102	-
JAMAICA	1984	345	8	24	30	78	83	37	26	13	21	21	4
MARTINIQUE	1985	130	1	1	6	25	10	14	21	19	11	20	2
MEXICO	1986	51176	696	1629	3468	11861	11714	7735	5280	3593	2269	2259	672
NETHERLANDS ANTILLES (CURACAO)	1981	38	-	1	2	9	9	5	5	2	5	-	-
PANAMA	1987	826	21	29	46	219	219	123	86	64	54	54	11
PARAGUAY (AREA OF INFORMATION)	1986	666	8	25	58	151	148	86	53	61	31	23	22
PERU	1983	4341	84	224	397	949	807	568	436	320	236	174	146
PUERTO RICO	1987	1766	7	12	56	343	423	305	195	163	127	116	19
ST. KITTS AND NEVIS	1985	10	-	-	-	1	1	1	2	1	...	...	-
SAINT LUCIA	1988	45	1	-	3	11	9	6	7	4	2	2	-
ST. VINCENT & THE GRENADINES	1986	29	-	-	2	3	10	4	3	3	2	1	1
SURINAME	1985	195	-	11	14	37	33	31	25	15	18	11	2
TRINIDAD AND TOBAGO	1986	515	4	23	23	108	129	71	47	46	38	25	1
UNITED STATES	1987	107139	711	2004	3403	22946	24184	15589	9361	9231	8601	10897	212
URUGUAY	1987	1265	33	25	63	168	156	158	152	208	133	156	13
VENEZUELA	1987	8707	225	319	565	2266	2067	1109	824	602	405	291	34
Female													
ARGENTINA	1986	4543	284	263	307	491	414	400	421	466	499	929	69
BAHAMAS	1987	44	3	5	6	5	8	4	5	1	3	4	-
BARBADOS	1988	31	-	1	1	1	4	2	1	3	5	13	-
BELIZE	1986	20	1	4	1	6	3	2	1	1	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	17892	505	1117	2151	3550	2877	2048	1520	1228	1162	1524	212
CANADA	1988	4107	36	84	125	463	515	435	363	360	401	1322	3
CHILE	1987	1874	315	117	98	217	205	182	141	157	168	274	-
COLOMBIA	1984	4119	209	482	438	829	569	381	303	229	257	361	61
COSTA RICA	1988	287	9	15	23	37	35	27	22	18	19	78	4
CUBA	1988	2715	37	59	110	620	418	246	190	153	228	654	-
DOMINICA	1985	1	-	-	-	-	-	-	-	-	1	-	-
DOMINICAN REPUBLIC	1985	474	21	40	54	87	71	39	33	30	33	66	-
ECUADOR	1987	1369	63	171	222	216	153	114	85	101	79	157	8
EL SALVADOR	1984	859	13	41	109	227	113	87	68	51	59	75	16
GUADELOUPE	1981	77	2	-	5	11	12	7	4	9	5	22	-
GUATEMALA	1984	644	36	40	60	140	100	84	68	24	40	48	4
GUYANA	1984	102	2	8	11	25	12	7	8	10	8	6	5
HONDURAS	1981	305	7	30	52	67	44	24	29	13	13	26	-
JAMAICA	1984	99	9	15	17	9	15	6	5	6	5	11	1
MARTINIQUE	1985	42	-	1	3	3	7	2	2	3	4	15	2
MEXICO	1986	11368	516	1204	1385	1779	1462	988	872	740	767	1529	126
NETHERLANDS ANTILLES (CURACAO)	1981	7	1	-	-	1	-	1	-	1	-	3	-
PANAMA	1987	231	18	24	33	36	25	19	9	23	15	28	1
PARAGUAY (AREA OF INFORMATION)	1986	249	17	15	37	58	15	16	17	15	15	43	1
PERU	1983	1393	68	138	222	271	178	119	95	96	64	98	44
PUERTO RICO	1987	401	9	11	17	62	59	60	27	38	30	84	4
ST. KITTS AND NEVIS	1985	3	-	1	2	-	-	-	-	-	...	...	-
SAINT LUCIA	1988	14	1	-	2	1	-	2	2	3	1	2	-
ST. VINCENT & THE GRENADINES	1986	11	2	1	2	-	-	-	3	-	1	1	1
SURINAME	1985	71	3	9	4	10	4	9	9	7	6	10	-
TRINIDAD AND TOBAGO	1986	166	9	13	5	31	22	24	11	12	14	25	-
UNITED STATES	1987	42803	569	1327	1516	6444	6513	4769	3395	3690	4456	10064	60
URUGUAY	1987	567	21	18	29	50	41	43	41	61	76	183	4
VENEZUELA	1987	2208	185	236	252	363	271	207	156	153	131	246	8

TABLE III-9b(26).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from accidents and violence (E800–E999), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	54.2	44.8	88.5	24.5	16.6	49.2	50.7	55.3	62.8	72.1	96.5	218.4
BAHAMAS	1987	73.9	69.7	161.6	52.4	26.0	83.8	104.9	47.7	92.0	95.8	126.0	181.0
BARBADOS	1988	44.0	...	-	22.0	6.1	20.8	60.3	41.7	48.9	63.6	85.5	216.2
BELIZE	1986	50.9	46.9	48.9	31.3	13.4	47.2	123.6	40.2	31.3	75.1	31.5	118.3
BRAZIL (AREA OF INFORMATION)	1986	69.3	63.7	21.1	19.0	21.1	84.2	101.9	98.1	93.2	86.0	98.3	188.3
CANADA	1988	52.2	38.6	17.8	14.1	11.6	56.1	54.1	48.1	49.2	54.6	66.6	229.1
CHILE	1987	67.0	61.0	260.7	30.4	15.7	51.3	73.7	76.6	87.7	105.6	129.4	241.2
COLOMBIA	1984	87.0	81.0	54.9	42.5	22.5	95.1	136.2	119.6	111.3	98.9	126.2	300.5
COSTA RICA	1988	42.5	40.3	22.1	18.2	9.2	34.6	50.3	54.1	66.2	68.0	112.0	473.7
CUBA	1988	81.5	64.8	44.2	26.4	20.8	76.1	97.4	80.6	84.1	88.4	131.3	463.4
DOMINICA	1985	27.6	22.8	-	13.3	-	10.9	45.6	17.3	68.0	51.0	129.0	52.6
DOMINICAN REPUBLIC	1985	33.7	35.0	39.8	13.7	9.3	32.9	46.1	47.9	47.5	56.1	79.2	362.3
ECUADOR	1987	62.2	53.1	69.4	34.5	25.0	57.1	83.7	84.5	93.6	111.3	132.2	342.6
EL SALVADOR	1984	125.7	127.1	25.5	15.5	22.1	242.3	185.6	175.5	168.6	178.1	213.0	383.6
GUADELOUPE	1981	84.7	68.3	61.7	-	22.0	63.5	89.4	107.4	137.7	142.2	188.8	400.0
GUATEMALA	1984	52.0	54.9	26.9	11.7	10.0	66.2	103.5	85.8	86.0	68.8	111.7	208.4
GUYANA	1984	45.6	42.6	19.8	18.1	15.6	44.9	53.7	52.7	61.1	104.2	109.0	215.0
HONDURAS	1981	53.9	61.1	8.1	14.3	13.0	65.1	101.3	106.9	93.5	82.2	94.0	475.8
JAMAICA	1984	19.3	18.7	31.6	16.0	8.7	15.5	29.1	26.8	22.7	15.4	29.0	62.4
MARTINIQUE	1985	52.5	37.2	17.5	8.8	17.4	37.2	34.3	44.9	77.7	85.9	79.4	269.2
MEXICO	1986	77.0	77.4	47.2	29.3	21.9	80.2	113.6	120.6	123.6	133.8	163.5	371.8
NETHERLANDS ANTILLES (CURACAO)	1981	27.4	25.2	25.0	5.3	4.9	39.3	40.9	35.3	41.7	33.3	83.3	75.0
PANAMA	1987	50.9	48.2	87.7	22.7	14.1	53.9	71.5	61.0	61.1	80.3	100.1	254.7
PARAGUAY (AREA OF INFORMATION)	1986	40.3	40.0	46.6	13.9	16.2	45.2	47.0	50.2	52.2	77.9	81.7	267.2
PERU	1983	30.7	29.4	22.1	16.0	13.1	32.2	36.4	37.8	40.6	49.2	62.4	141.8
PUERTO RICO	1987	61.0	50.0	24.8	7.9	10.6	58.4	92.6	84.5	70.7	82.0	85.2	181.7
ST. KITTS AND NEVIS	1985	28.2	...	-	23.0	19.7	9.1	13.5	32.8	86.6	39.2	...	...
SAINT LUCIA	1988	44.4	44.2	55.8	-	16.2	40.2	46.4	69.0	121.1	106.7	63.2	155.6
ST. VINCENT & THE GRENADINES	1986	38.1	40.4	73.9	7.7	14.1	12.1	73.1	61.5	112.1	73.0	83.6	97.1
SURINAME	1985	70.8	68.5	25.6	50.0	20.2	52.2	74.0	125.0	117.2	115.8	220.0	350.0
TRINIDAD AND TOBAGO	1986	56.6	50.5	40.8	31.6	11.0	53.5	74.9	72.3	67.9	90.6	116.3	233.6
UNITED STATES	1987	61.8	48.4	93.4	23.0	14.4	76.8	70.9	59.3	54.8	58.7	73.9	172.3
URUGUAY	1987	59.9	44.6	101.0	19.3	17.0	44.1	47.7	57.4	56.2	87.7	100.9	278.2
VENEZUELA	1987	59.7	58.7	79.3	25.7	18.1	70.2	82.6	70.1	82.9	94.5	127.0	269.3
Male													
ARGENTINA	1986	78.2	66.0	89.1	29.5	22.3	76.1	81.1	87.4	98.5	112.9	150.9	278.4
BAHAMAS	1987	113.6	105.5	185.3	61.1	29.1	145.1	172.1	68.4	137.3	190.2	205.7	253.2
BARBADOS	1988	67.3	...	-	33.0	8.2	37.9	102.7	73.8	97.6	112.7	133.3	275.0
BELIZE	1986	77.9	70.5	63.9	12.4	21.1	60.4	223.3	58.8	48.0	133.0	65.1	182.9
BRAZIL (AREA OF INFORMATION)	1986	112.9	103.8	23.1	23.0	28.6	142.7	177.7	169.2	157.7	140.1	145.4	227.5
CANADA	1988	73.6	57.2	16.2	16.9	16.0	89.4	86.3	72.5	70.2	81.5	99.3	270.4
CHILE	1987	105.3	95.4	277.5	37.9	23.0	84.8	127.5	132.7	153.6	182.7	213.6	338.3
COLOMBIA	1984	144.2	135.7	57.9	50.3	31.5	158.2	244.6	208.8	191.1	171.9	204.6	425.5
COSTA RICA	1988	64.4	62.1	21.4	22.5	11.2	58.2	84.9	84.6	109.5	110.6	184.1	587.4
CUBA	1988	107.6	87.2	47.7	33.6	29.1	95.4	134.7	121.1	127.4	133.1	170.6	488.3
DOMINICA	1985	52.2	46.0	-	25.7	-	20.9	85.9	34.2	157.1	113.2	214.3	140.8
DOMINICAN REPUBLIC	1985	52.4	54.4	41.4	18.4	12.1	53.5	77.5	82.1	79.4	86.6	104.9	451.7
ECUADOR	1987	96.2	98.4	76.1	40.7	32.4	91.7	144.9	143.9	161.0	177.0	210.2	470.7
EL SALVADOR	1984	214.3	218.8	31.8	17.9	27.1	432.1	329.3	306.5	290.6	314.6	356.4	592.8
GUADELOUPE	1981	125.4	105.6	61.3	-	31.1	95.4	129.8	177.2	265.6	201.8	314.3	450.0
GUATEMALA	1984	86.5	91.9	30.3	15.8	14.2	112.2	186.0	145.4	142.7	123.2	174.8	290.0
GUYANA	1984	69.2	65.3	12.8	20.0	21.1	65.0	91.7	91.8	98.2	162.0	164.1	348.9
HONDURAS	1981	81.6	105.3	7.3	18.2	16.4	111.2	182.5	198.7	161.5	147.6	158.2	822.6
JAMAICA	1984	30.3	29.6	29.2	19.5	10.8	27.5	48.6	49.4	40.6	22.8	50.8	96.8
MARTINIQUE	1985	81.5	61.1	37.2	8.4	23.5	69.5	60.3	83.3	152.2	161.0	122.2	400.0
MEXICO	1986	125.9	126.9	53.1	33.1	30.7	137.7	201.6	217.0	219.3	233.9	267.5	511.0
NETHERLANDS ANTILLES (CURACAO)	1981	46.3	43.9	-	12.5	9.5	52.9	81.8	62.5	83.3	50.0	166.7	-
PANAMA	1987	79.9	75.1	71.1	24.2	16.1	90.1	125.0	103.4	108.4	135.9	152.1	346.2
PARAGUAY (AREA OF INFORMATION)	1986	58.6	58.2	28.6	17.1	19.5	65.0	85.3	86.0	81.0	129.8	119.2	219.0
PERU	1983	48.1	44.7	23.9	19.4	16.6	49.4	58.9	62.1	66.8	77.8	105.3	210.7
PUERTO RICO	1987	102.1	86.1	21.3	8.0	16.0	98.3	172.7	151.2	133.3	142.6	146.8	230.2
ST. KITTS AND NEVIS	1985	44.5	...	-	-	-	17.6	27.4	75.8	196.1	88.5	...	...
SAINT LUCIA	1988	69.9	72.9	56.5	-	19.2	74.0	99.8	109.5	210.2	143.4	93.9	200.0
ST. VINCENT & THE GRENADINES	1986	56.8	65.7	-	-	13.9	24.0	161.8	131.1	133.3	159.6	125.8	126.6
SURINAME	1985	105.4	104.7	-	55.0	31.1	82.2	137.5	206.7	178.6	150.0	320.0	550.0
TRINIDAD AND TOBAGO	1986	85.8	77.5	24.8	39.7	17.7	83.5	128.0	108.9	112.7	150.8	178.4	271.7
UNITED STATES	1987	90.4	72.3	36.2	27.0	19.5	118.7	111.6	92.2	82.8	89.1	109.9	253.7
URUGUAY	1987	84.1	65.3	121.1	22.0	22.9	67.0	75.3	91.5	90.2	142.3	142.4	326.9
VENEZUELA	1987	94.3	93.0	85.4	29.0	24.6	119.1	144.3	116.9	139.5	152.6	204.2	340.4
Female													
ARGENTINA	1986	29.3	23.3	85.8	19.0	10.3	20.7	18.8	21.9	27.2	34.2	52.2	172.0
BAHAMAS	1987	35.0	35.0	138.1	43.6	22.7	19.9	38.0	28.4	49.6	13.8	62.0	140.8
BARBADOS	1988	22.9	...	-	11.0	4.1	3.8	17.9	14.1	9.8	29.4	54.3	183.1
BELIZE	1986	23.9	23.6	33.3	50.8	5.5	33.7	24.6	22.4	15.3	20.8	-	57.5
BRAZIL (AREA OF INFORMATION)	1986	25.8	24.0	18.9	14.9	15.5	25.3	26.1	28.0	29.5	33.6	54.7	151.0
CANADA	1988	31.2	20.1	19.6	11.2	7.0	21.6	22.0	23.4	28.0	29.4	43.6	203.5
CHILE	1987	29.6	28.2	243.2	22.6	8.1	17.1	19.6	23.1	25.7	38.0	64.2	181.1
COLOMBIA	1984	29.4	28.5	51.6	34.5	13.3	27.0	25.5	27.2	31.8	32.7	60.4	211.8
COSTA RICA	1988	20.2	18.7	22.8	9.6	7.2	12.2	14.8	19.0	22.9	26.7	47.9	392.0
CUBA	1988	54.5	41.8	40.5	19.0	12.1	55.9	58.7	38.8	40.1	43.5	90.9	458.3
DOMINICA	1985	2.7	1.4	-	-	-	-	-	-	-	-	58.8	-
DOMINICAN REPUBLIC	1985	14.9	15.8	38.0	10.9	6.5	12.3	14.7	13.7	16.5	24.1	52.6	189.1
ECUADOR	1987	27.8	28.1	62.8	28.1	17.4	21.6	21.6	24.7	27.1	48.2	61.2	239.3
EL SALVADOR	1984	38.4	36.0	18.7	12.9	17.0	48.6	35.2	43.4	48.9	50.6	98.7	237.3
GUADELOUPE	1981	46.0	34.1	62.0	-	13.0	30.8	52.6	41.7	27.0	82.6	55.6	366.7
GUATEMALA	1984	16.8	17.6	23.4	7.4	5.7	19.0	19.9	25.9	28.5	14.7	50.2	133.3
GUYANA	1984	21.9	20.4	27.1	16.3	10.0	24.2	13.3	16.2	26.3	46.3	58.0	103.4
HONDURAS	1981	16.0	17.2	8.9	10.4	9.5	18.4	19.0	15.0	25.5	17.7	33.1	179.3
JAMAICA	1984	8.5	8.5	34.2	12.5	6.4	3.3	8.9	7.0	6.9	9.1	10.4	37.2
MARTINIQUE	1985	24.9	15.7	-	9.2	11.6	8.0	28.2	10.8	12.7	21.7	40.4	187.5
MEXICO	1986	28.0	27.4	41.0	25.4	12.7	21.2	25.2	26.9	33.9	43.4	76.1	265.1
NETHERLANDS ANTILLES (CURACAO)	1981	8.5	6.6	50.0	-	-	6.3	-	11.1	-	20.0	-	150.0
PANAMA	1987	20.7	20.3	64.0	21.1	12.0	15.1	15.0	16.7	11.8	43.2	44.9	168.7
PARAGUAY (AREA OF INFORMATION)	1986	21.9	22.1	66.3	10.6	12.8	25.2	8.6	15.5	24.8	29.6	49.5	302.8
PERU	1983	15.0	14.3	20.1	12.4	9.6	14.5	13.3	13.2	14.5	22.1	25.0	89.7
PUERTO RICO	1987	22.0	17.1	28.6	7.7	5.0	18.0	21.4	26.0	16.1	29.1	30.7	140.7
ST. KITTS AND NEVIS	1985	12.7	...	-	46.9	40.3	-	-	-	-	-	...	...
SAINT LUCIA	1988	20.4	19.5	55.0	-	13.1	6.7	-	32.7	48.8	79.6	38.2	127.4
ST. VINCENT & THE GRENADINES	1986	20.4	19.7	150.7	15.6	14.3	-	-	-	96.8	-	50.0	76.7
SURINAME	1985	37.4	35.1	50.7	45.0	9.1	22.2	15.4	52.9	60.0	77.8	120.0	250.0
TRINIDAD AND TOBAGO	1986	27.5	24.3	57.1	23.2	4.1	23.8	21.8	36.3	25.2	35.8	59.8	204.9
UNITED STATES	1987	34.3	25.1	30.5	18.8	9.1	34.1	30.1	27.4	28.4	31.7	45.3	127.8
URUGUAY	1987	36.5	24.4	80.2	16.4	10.9	20.5	19.9	24.2	23.5	38.0	66.8	246.9
VENEZUELA	1987	24.4	24.3	73.1	22.3	11.4	19.7	19.4	22.3	26.4	37.9	58.6	216.0

TABLE III-9a(27).

Number of deaths from accidents (E800–E949, E980–E989), by age, sex, and country, latest data available.

Country	Year	All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
		Age in years											
Both sexes													
ARGENTINA	1986	12351	568	666	920	1607	1483	1388	1325	1347	1195	1616	236
BAHAMAS	1987	155	7	12	14	30	35	11	16	13	9	8	-
BARBADOS	1988	83	-	4	3	8	16	6	8	8	9	21	-
BELIZE	1986	82	3	5	5	15	29	7	4	7	2	4	1
BRAZIL (AREA OF INFORMATION)	1986	71169	1068	2812	6339	15851	14996	10130	7195	4977	3416	3235	1150
CANADA	1988	9622	57	208	385	1726	1534	1008	764	858	861	2217	4
CHILE	1987	7369	688	320	378	1085	1276	1004	809	697	531	562	19
COLOMBIA	1984	14021	434	1171	1363	2913	2667	1623	1120	862	789	794	285
COSTA RICA	1988	960	16	51	59	151	167	100	101	80	69	155	11
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	20	-	1	-	2	4	1	3	2	4	1	2
DOMINICAN REPUBLIC	1985	1667	40	97	147	335	316	207	139	112	78	196	-
ECUADOR	1987	4776	139	420	611	739	780	566	449	377	274	376	45
EL SALVADOR	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	240	4	-	17	36	34	29	31	27	23	39	-
GUATEMALA	1984	3716	84	124	204	948	932	500	376	200	152	144	52
GUYANA	1984	318	3	12	29	68	61	32	27	36	21	19	10
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	396	17	39	46	77	75	40	27	16	24	31	4
MARTINIQUE	1985	147	1	1	8	24	13	12	21	17	13	34	3
MEXICO	1986	45011	1143	2691	4405	8918	8364	5611	4197	3197	2491	3451	543
NETHERLANDS ANTILLES (CURACAO)	1981	36	1	1	2	9	8	4	4	1	3	3	-
PANAMA	1987	901	37	52	72	181	162	104	75	73	60	76	9
PARAGUAY (AREA OF INFORMATION)	1986	705	29	38	95	145	104	66	52	61	38	64	16
PERU	1983	5216	147	350	592	1069	870	612	486	383	276	262	169
PUERTO RICO	1987	1390	16	23	68	245	268	199	154	123	109	164	21
ST. KITTS AND NEVIS	1985	11	-	1	2	1	1	-	1	1	...	...	-
SAINT LUCIA	1988	37	1	-	4	9	6	4	7	4	-	2	-
ST. VINCENT & THE GRENADINES	1986	31	2	1	4	2	7	2	8	3	3	1	-
SURINAME	1985	163	3	19	14	14	23	20	21	16	16	16	1
TRINIDAD AND TOBAGO	1986	486	13	33	26	99	87	59	36	44	41	47	1
UNITED STATES	1987	98031	1007	2997	4261	19110	17496	11501	7246	8062	8864	17329	158
URUGUAY	1987	1477	54	42	87	174	158	146	139	209	162	293	13
VENEZUELA	1987	8712	404	549	790	1900	1665	998	791	614	467	501	33
Male													
ARGENTINA	1986	8672	292	408	634	1274	1221	1119	1039	1017	801	748	119
BAHAMAS	1987	116	4	7	8	28	29	7	11	12	6	4	-
BARBADOS	1988	61	-	3	2	8	15	5	7	6	7	8	-
BELIZE	1986	63	2	1	4	10	26	5	3	6	2	3	1
BRAZIL (AREA OF INFORMATION)	1986	56146	590	1704	4325	13184	12860	8534	5966	3905	2381	1775	944
CANADA	1988	6457	25	131	269	1390	1240	790	552	590	523	946	1
CHILE	1987	5655	375	204	281	912	1108	847	686	557	376	290	19
COLOMBIA	1984	10803	229	701	967	2426	2313	1361	897	667	551	454	237
COSTA RICA	1988	708	8	37	36	129	141	79	79	62	51	77	9
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	10	-	1	-	2	4	1	3	2	3	1	2
DOMINICAN REPUBLIC	1985	1288	23	60	96	279	264	177	115	85	53	138	-
ECUADOR	1987	3644	76	255	402	824	671	473	382	290	207	227	37
EL SALVADOR	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	171	2	-	12	30	23	22	27	19	18	18	-
GUATEMALA	1984	3124	48	88	152	816	844	428	308	176	120	96	48
GUYANA	1984	240	1	6	19	50	52	27	23	27	15	14	6
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	302	8	24	29	69	62	34	23	10	19	20	4
MARTINIQUE	1985	111	1	-	5	21	9	10	19	16	9	19	2
MEXICO	1986	35287	656	1552	3139	7571	7274	4828	3488	2559	1797	1978	445
NETHERLANDS ANTILLES (CURACAO)	1981	30	-	1	2	9	8	3	4	-	3	-	-
PANAMA	1987	708	19	28	41	156	148	93	67	52	47	49	8
PARAGUAY (AREA OF INFORMATION)	1986	491	8	25	58	103	93	55	40	48	24	21	16
PERU	1983	3921	81	214	380	826	706	504	402	295	220	167	126
PUERTO RICO	1987	1074	7	12	52	199	232	161	132	93	82	85	19
ST. KITTS AND NEVIS	1985	8	-	-	-	1	1	-	1	1	...	...	-
SAINT LUCIA	1988	28	1	-	3	8	6	2	5	2	-	1	-
ST. VINCENT & THE GRENADINES	1986	21	-	-	2	2	7	2	3	3	2	-	-
SURINAME	1985	120	-	11	11	13	20	15	16	12	12	9	1
TRINIDAD AND TOBAGO	1986	373	4	23	21	84	76	45	30	36	30	23	1
UNITED STATES	1987	67002	556	1840	2958	14614	13769	8823	5296	5556	5390	8067	133
URUGUAY	1987	1008	33	24	62	139	129	121	110	162	100	119	9
VENEZUELA	1987	6763	220	316	548	1610	1451	844	656	486	346	259	27
Female													
ARGENTINA	1986	3552	269	254	280	328	254	258	279	325	389	855	61
BAHAMAS	1987	39	3	5	6	2	6	4	5	1	3	4	-
BARBADOS	1988	22	-	1	1	-	1	1	1	2	2	13	-
BELIZE	1986	19	1	4	1	5	3	2	1	1	-	1	-
BRAZIL (AREA OF INFORMATION)	1986	14926	478	1105	2008	2659	2120	1585	1226	1067	1053	1459	166
CANADA	1988	3165	32	77	116	336	294	218	212	268	338	1271	3
CHILE	1987	1714	313	116	97	173	168	157	123	140	155	272	-
COLOMBIA	1984	3218	205	470	396	487	354	262	223	195	238	340	48
COSTA RICA	1988	252	8	14	23	22	26	21	22	18	18	78	2
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	1	-	-	-	-	-	-	-	-	1	-	-
DOMINICAN REPUBLIC	1985	379	17	37	51	56	52	30	24	27	25	58	-
ECUADOR	1987	1132	63	165	209	115	109	93	67	87	67	149	8
EL SALVADOR	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	69	2	-	5	6	11	7	4	8	5	21	-
GUATEMALA	1984	592	36	36	52	132	88	72	68	24	32	48	4
GUYANA	1984	78	2	6	10	18	9	5	4	9	6	5	4
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	94	9	15	17	8	13	6	4	6	5	11	-
MARTINIQUE	1985	36	-	1	3	3	4	2	2	1	4	15	1
MEXICO	1986	9724	487	1139	1266	1347	1090	783	709	638	694	1473	98
NETHERLANDS ANTILLES (CURACAO)	1981	6	1	-	-	-	-	1	-	1	-	3	-
PANAMA	1987	193	18	24	31	25	14	11	8	21	13	27	1
PARAGUAY (AREA OF INFORMATION)	1986	214	17	14	37	42	11	11	12	13	14	43	-
PERU	1983	1295	66	136	212	243	164	108	84	88	56	95	43
PUERTO RICO	1987	316	9	11	16	46	36	38	22	30	27	79	2
ST. KITTS AND NEVIS	1985	3	-	1	2	-	-	-	-	-	...	...	-
SAINT LUCIA	1988	9	-	-	1	1	-	2	2	2	-	1	-
ST. VINCENT & THE GRENADINES	1986	10	2	1	2	-	-	-	3	-	1	1	-
SURINAME	1985	43	3	8	3	1	3	5	5	4	4	7	-
TRINIDAD AND TOBAGO	1986	113	9	10	5	15	11	14	6	8	11	24	-
UNITED STATES	1987	31029	451	1157	1303	4496	3727	2678	1950	2506	3474	9262	25
URUGUAY	1987	469	21	18	25	35	29	25	29	47	62	174	4
VENEZUELA	1987	1949	184	233	242	290	214	154	135	128	121	242	6

TABLE III-9b(27).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from accidents (E800–E949, E980–E989), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	40.2	33.6	84.1	23.8	15.2	33.5	33.4	37.7	43.3	51.7	89.5	178.5
BAHAMAS	1987	62.2	60.0	161.6	52.4	26.0	58.5	83.4	40.4	81.8	95.8	103.1	181.0
BARBADOS	1988	32.3	...	-	22.0	6.1	15.2	35.7	22.7	43.5	46.2	59.2	189.2
BELIZE	1986	49.1	45.2	48.9	31.3	13.4	41.6	119.4	40.2	31.3	75.1	31.5	118.3
BRAZIL (AREA OF INFORMATION)	1986	51.4	47.6	20.0	18.7	19.8	56.2	68.1	70.0	70.4	69.5	83.5	173.2
CANADA	1988	36.9	27.0	15.2	13.4	10.5	39.4	32.8	27.0	29.3	36.2	51.6	211.0
CHILE	1987	58.8	54.1	258.9	30.2	15.3	42.4	60.9	65.1	78.0	90.0	114.5	229.4
COLOMBIA	1984	49.9	47.9	52.6	41.3	20.5	47.0	59.2	57.0	58.8	64.5	100.8	272.7
COSTA RICA	1988	33.5	32.1	19.7	15.9	9.1	24.4	35.0	34.9	52.7	60.4	92.0	453.2
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	26.3	21.5	-	13.3	-	10.9	36.5	17.3	88.0	51.0	129.0	52.6
DOMINICAN REPUBLIC	1985	26.0	27.2	35.3	13.1	8.7	23.5	32.7	36.6	35.1	44.0	61.2	293.4
ECUADOR	1987	48.1	49.1	68.0	34.0	23.7	36.5	54.7	61.2	71.9	91.8	111.1	317.3
EL SALVADOR	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	73.4	58.8	61.7	-	22.0	49.7	78.0	89.0	112.3	123.9	143.8	390.0
GUATEMALA	1984	48.0	50.5	26.9	11.3	9.4	63.3	92.4	77.1	78.5	61.4	96.5	208.4
GUYANA	1984	34.0	32.0	19.8	12.1	13.0	32.5	38.6	38.3	45.8	83.3	78.9	177.6
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	17.2	16.8	31.6	16.0	8.5	13.7	22.3	24.9	19.7	13.0	26.8	60.4
MARTINIQUE	1985	44.8	31.1	17.5	4.4	15.5	31.9	26.2	33.7	70.9	66.4	68.8	261.5
MEXICO	1986	55.4	55.7	44.5	27.8	10.9	52.4	72.1	77.6	84.3	98.7	134.2	338.7
NETHERLANDS ANTILLES (CURACAO)	1981	22.0	20.4	25.0	6.3	4.9	27.3	36.4	23.5	33.3	11.1	50.0	75.0
PANAMA	1987	39.6	37.8	64.2	22.2	12.9	37.6	47.4	44.7	48.3	67.3	87.1	236.0
PARAGUAY (AREA OF INFORMATION)	1986	31.0	31.1	46.6	13.6	16.2	31.4	30.0	32.5	38.8	62.5	67.5	259.1
PERU	1983	27.9	26.8	21.3	15.5	12.5	28.2	32.1	33.7	37.1	45.3	57.4	136.6
PUERTO RICO	1987	39.1	31.9	24.8	7.9	9.9	35.3	51.5	46.1	49.0	50.2	59.1	149.0
ST. KITTS AND NEVIS	1985	23.9	...	-	23.0	19.7	9.1	13.5	-	43.3	39.2	...	...
SAINT LUCIA	1988	27.8	28.4	27.9	-	13.0	30.1	30.9	34.5	94.2	61.0	-	77.8
ST. VINCENT & THE GRENADINES	1986	29.5	32.9	73.9	7.7	14.1	8.0	51.2	30.8	112.1	73.0	83.6	48.5
SURINAME	1985	43.5	42.7	25.6	47.5	15.7	15.6	46.0	62.5	72.4	84.2	160.0	266.7
TRINIDAD AND TOBAGO	1986	40.4	36.3	40.8	28.9	10.3	38.1	43.2	44.9	42.2	88.8	91.7	219.6
UNITED STATES	1987	40.3	31.8	26.3	20.7	12.5	50.0	40.4	33.5	31.1	36.6	50.2	142.4
URUGUAY	1987	48.3	36.6	101.0	18.8	16.0	35.2	38.2	41.7	40.5	68.2	78.2	240.5
VENEZUELA	1987	47.7	47.3	78.2	25.4	17.5	50.7	58.9	53.2	66.9	76.9	110.7	251.3
Male													
ARGENTINA	1986	56.9	48.9	84.8	28.7	20.7	52.5	54.3	60.3	68.8	81.8	104.8	204.9
BAHAMAS	1987	94.1	89.5	185.3	61.1	29.1	107.0	138.6	55.2	116.2	190.2	154.2	253.2
BARBADOS	1988	50.1	...	-	33.0	8.2	30.3	87.0	41.0	85.4	84.5	116.7	200.0
BELIZE	1986	75.5	68.4	63.9	12.4	21.1	54.9	215.1	58.8	48.0	133.0	65.1	182.9
BRAZIL (AREA OF INFORMATION)	1986	81.3	75.4	22.1	22.5	27.0	93.3	117.0	119.0	117.5	111.1	120.1	205.5
CANADA	1988	49.9	39.3	13.0	16.4	14.2	62.3	53.2	42.0	42.2	51.6	69.8	235.8
CHILE	1987	91.1	83.5	275.3	37.7	22.4	70.5	105.5	112.4	133.2	154.0	186.0	309.5
COLOMBIA	1984	76.6	73.3	54.4	48.8	28.7	77.7	101.7	93.9	94.4	104.8	154.2	375.8
COSTA RICA	1988	48.9	47.8	19.1	22.5	10.9	41.0	58.4	54.7	82.4	95.2	144.5	538.5
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	49.6	43.6	-	25.7	-	20.9	68.7	34.2	157.1	113.0	214.3	140.8
DOMINICAN REPUBLIC	1985	39.9	41.7	39.7	15.9	11.3	39.0	54.5	62.6	57.9	65.1	81.8	432.6
ECUADOR	1987	73.0	75.1	73.2	40.7	30.7	60.9	93.4	102.1	123.2	144.2	176.2	429.1
EL SALVADOR	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	107.2	89.8	61.3	-	31.1	81.7	110.6	139.2	210.9	174.3	257.1	450.0
GUATEMALA	1984	79.8	84.5	30.3	15.8	13.8	107.5	166.3	131.9	127.8	108.4	154.2	290.0
GUYANA	1984	51.1	48.8	12.8	12.0	16.7	47.1	65.3	67.0	80.7	125.0	117.2	285.7
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	26.5	26.0	29.2	19.5	10.5	24.3	37.0	45.4	35.9	17.5	46.0	92.2
MARTINIQUE	1985	69.6	51.0	37.2	-	19.4	55.9	36.3	59.5	137.7	135.6	100.0	380.0
MEXICO	1986	86.8	89.0	50.1	31.5	27.8	87.9	125.2	135.5	144.9	166.6	211.9	447.4
NETHERLANDS ANTILLES (CURACAO)	1981	36.6	35.0	-	12.5	9.5	52.9	72.7	37.5	66.7	-	100.0	-
PANAMA	1987	61.1	57.7	64.3	23.3	14.5	64.2	84.5	78.2	84.5	94.2	132.4	314.1
PARAGUAY (AREA OF INFORMATION)	1986	43.2	43.2	28.6	17.1	19.5	44.4	53.6	55.0	61.2	102.1	92.3	200.0
PERU	1983	41.6	40.5	23.1	18.6	15.8	43.0	51.6	55.1	61.6	71.7	98.2	202.2
PUERTO RICO	1987	62.1	52.1	21.3	8.0	14.8	57.0	94.7	79.8	90.2	81.4	94.8	168.7
ST. KITTS AND NEVIS	1985	35.6	...	-	-	-	17.6	27.4	-	98.0	88.5	...	...
SAINT LUCIA	1988	43.5	45.3	56.5	-	19.2	53.8	66.5	36.5	150.2	71.7	-	100.0
ST. VINCENT & THE GRENADINES	1986	41.2	49.2	-	-	13.9	16.0	113.3	65.6	133.3	159.6	125.8	-
SURINAME	1985	64.9	65.4	-	55.0	24.4	28.9	83.3	100.0	114.3	120.0	240.0	450.0
TRINIDAD AND TOBAGO	1986	62.1	56.6	24.8	39.7	16.1	65.0	75.4	69.0	71.9	118.0	140.8	250.0
UNITED STATES	1987	56.5	46.3	28.3	24.8	16.9	75.6	63.5	52.2	46.8	53.6	68.9	187.8
URUGUAY	1987	67.0	53.8	121.1	21.1	22.5	55.4	62.3	70.1	65.3	110.8	107.1	249.4
VENEZUELA	1987	73.3	72.8	83.5	28.7	23.8	84.6	101.3	89.0	111.0	123.2	174.5	302.9
Female													
ARGENTINA	1986	22.9	18.2	81.3	18.4	9.4	13.9	11.6	14.1	18.0	23.9	40.7	158.3
BAHAMAS	1987	31.0	31.5	136.1	43.6	22.7	8.0	28.5	28.4	49.6	13.8	62.0	140.8
BARBADOS	1988	16.3	...	-	11.0	4.1	-	4.5	7.0	9.8	19.6	21.7	183.1
BELIZE	1986	22.7	22.6	33.3	50.8	5.5	28.1	24.6	22.4	15.3	20.8	-	57.5
BRAZIL (AREA OF INFORMATION)	1986	21.5	20.1	17.9	14.7	12.6	18.9	19.2	21.7	23.8	29.3	49.5	144.5
CANADA	1988	24.0	14.8	17.4	10.3	6.5	15.7	12.6	11.7	16.3	21.9	36.7	195.7
CHILE	1987	27.1	26.1	241.8	22.4	8.0	13.7	16.1	19.9	22.4	33.9	59.3	179.8
COLOMBIA	1984	23.0	22.7	50.7	33.6	12.0	15.8	15.9	18.7	23.4	27.8	55.9	199.5
COSTA RICA	1988	17.8	16.6	20.3	8.9	7.2	7.3	11.0	14.8	22.9	26.7	45.3	392.0
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	2.7	1.4	-	-	-	-	-	-	-	-	58.8	-
DOMINICAN REPUBLIC	1985	11.9	12.7	30.8	10.1	6.1	7.9	10.8	10.6	13.0	21.7	39.9	166.2
ECUADOR	1987	23.0	23.4	62.6	27.1	16.4	11.5	15.4	20.2	21.3	41.5	51.9	227.1
EL SALVADOR	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	41.2	30.2	62.0	-	13.0	16.8	48.2	41.7	27.0	73.4	55.6	350.0
GUATEMALA	1984	15.5	16.2	23.4	6.7	4.9	17.9	17.5	22.2	28.5	14.7	40.2	133.3
GUYANA	1984	16.7	15.7	27.1	12.2	9.1	17.5	11.5	11.6	13.2	41.7	43.5	86.2
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	8.1	8.2	34.2	12.5	6.4	2.9	7.7	7.0	5.5	9.1	10.4	37.2
MARTINIQUE	1985	21.4	13.4	-	9.2	11.6	8.0	16.1	10.6	12.7	7.2	40.4	187.5
MEXICO	1986	24.0	23.4	38.7	24.0	11.6	16.0	18.8	21.3	27.6	37.5	68.8	255.4
NETHERLANDS ANTILLES (CURACAO)	1981	7.3	5.4	50.0	-	-	-	-	11.1	-	20.0	-	150.0
PANAMA	1987	17.3	17.2	64.0	21.1	11.3	10.5	8.4	9.7	10.5	39.5	38.9	162.7
PARAGUAY (AREA OF INFORMATION)	1986	18.8	19.1	66.3	9.9	12.8	18.2	6.3	10.7	17.5	25.7	46.2	302.8
PERU	1983	14.0	13.3	19.5	12.2	9.1	13.0	12.3	12.0	12.8	20.3	21.8	87.0
PUERTO RICO	1987	17.3	13.3	28.6	7.7	4.7	13.3	13.1	16.5	13.1	22.9	27.6	132.3
ST. KITTS AND NEVIS	1985	12.7	...	-	46.9	40.3	-	-	-	-	-	...	...
SAINT LUCIA	1988	13.1	13.2	-	-	6.6	6.7	-	32.7	48.8	53.1	-	63.7
ST. VINCENT & THE GRENADINES	1986	18.5	19.7	150.7	15.6	14.3	-	-	-	96.8	-	50.0	78.7
SURINAME	1985	22.6	21.9	50.7	40.0	6.8	2.2	11.5	29.4	33.3	44.4	80.0	175.0
TRINIDAD AND TOBAGO	1986	18.7	16.5	57.1	17.9	4.1	11.5	10.9	21.1	13.7	23.9	47.0	196.7
UNITED STATES	1987	24.8	17.6	24.2	18.4	7.8	23.8	17.2	15.4	16.3	21.5	35.3	117.7
URUGUAY	1987	30.2	19.7	80.2	16.4	9.4	14.4	14.1	14.1	16.6	29.3	54.5	234.8
VENEZUELA	1987	21.6	21.5	72.7	22.0	10.9	15.7	15.3	16.6	22.8	31.7	54.1	212.5

TABLE III-9a(28).

Number of deaths from motor vehicle traffic accidents (E810–E819), by age, sex, and country, latest data available.

Country	Year	Age in years: All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	3103	20	122	279	497	443	427	421	370	256	216	52
BAHAMAS	1987	47	1	1	8	12	11	4	5	3	1	1	-
BARBADOS	1988	28	-	-	3	3	8	4	2	4	2	2	-
BELIZE	1986	18	-	-	3	4	6	2	-	2	-	-	1
BRAZIL (AREA OF INFORMATION)	1986	29574	172	925	2783	6496	6350	4427	3241	2362	1554	935	329
CANADA	1988	3971	12	62	212	1236	819	473	289	317	288	262	1
CHILE	1987	879	9	29	70	161	195	150	101	91	46	21	6
COLOMBIA	1984	4613	6	206	493	992	984	651	418	329	272	197	65
COSTA RICA	1988	352	1	18	29	61	75	50	41	35	22	19	1
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	7	-	1	-	2	1	-	1	-	1	-	1
DOMINICAN REPUBLIC	1985	557	3	13	43	120	118	78	52	50	30	50	-
ECUADOR	1987	1729	10	98	233	294	344	216	168	152	110	89	15
EL SALVADOR	1984	713	4	30	82	119	140	87	78	66	47	48	12
FRENCH GUIANA	1984	17	-	-	-	5	4	4	2	-	1	1	-
GUADELOUPE	1981	99	1	-	10	23	19	8	14	10	8	6	-
GUATEMALA	1984	112	-	4	12	36	28	12	8	8	-	-	4
GUYANA	1984	2	-	-	1	-	-	-	-	-	1	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	50	-	1	9	8	9	7	5	2	5	3	1
MARTINIQUE	1985	49	-	1	4	13	7	6	8	3	5	-	2
MEXICO	1986	12288	68	568	1375	2555	2550	1698	1205	872	672	599	126
NETHERLANDS ANTILLES (CURACAO)	1981	13	-	-	1	3	4	1	3	-	1	-	-
PANAMA	1987	388	1	13	24	86	74	55	37	36	29	28	5
PARAGUAY (AREA OF INFORMATION)	1986	241	1	8	32	46	47	24	26	27	20	4	6
PERU	1983	1253	14	58	164	217	237	175	138	109	74	43	24
PUERTO RICO	1987	652	4	8	24	144	141	91	80	60	55	42	3
SURINAME	1985	68	-	3	8	9	10	9	9	5	11	4	-
TRINIDAD AND TOBAGO	1986	194	2	8	17	56	35	28	16	11	16	5	-
UNITED STATES	1987	47297	195	832	2290	14253	10311	5838	3507	3381	3209	3432	49
URUGUAY	1987	290	1	6	24	54	32	40	35	46	31	19	2
VENEZUELA	1987	4371	24	172	375	1043	1010	609	455	358	210	120	15
Male													
ARGENTINA	1986	2315	11	76	181	374	366	340	326	293	180	139	29
BAHAMAS	1987	33	-	-	5	11	8	3	3	2	1	-	-
BARBADOS	1988	23	-	-	2	3	7	4	1	4	1	1	-
BELIZE	1986	14	-	-	3	2	5	2	-	1	-	-	1
BRAZIL (AREA OF INFORMATION)	1986	22993	90	551	1821	5148	5306	3625	2621	1829	1103	634	265
CANADA	1988	2852	5	38	135	980	641	359	203	198	166	147	-
CHILE	1987	716	4	20	47	125	171	137	89	70	35	12	6
COLOMBIA	1984	3620	4	117	357	808	829	549	324	249	187	143	53
COSTA RICA	1988	276	1	11	18	48	67	40	32	24	21	13	1
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	6	-	1	-	2	1	-	1	-	-	-	1
DOMINICAN REPUBLIC	1985	453	2	10	29	100	106	70	42	38	19	37	-
ECUADOR	1987	1323	5	58	151	243	291	173	142	107	74	66	13
EL SALVADOR	1984	536	3	20	48	97	119	67	53	53	32	36	8
FRENCH GUIANA	1984	12	-	-	-	4	2	4	2	-	-	-	-
GUADELOUPE	1981	77	-	-	7	20	14	7	14	6	6	3	-
GUATEMALA	1984	84	-	4	4	28	28	8	4	4	-	-	4
GUYANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	32	-	-	4	6	6	6	4	-	3	2	1
MARTINIQUE	1985	37	-	-	1	12	4	5	8	3	3	-	1
MEXICO	1986	9772	44	345	934	2164	2200	1451	968	681	477	405	103
NETHERLANDS ANTILLES (CURACAO)	1981	12	-	-	1	3	4	-	3	-	1	-	-
PANAMA	1987	320	1	9	15	71	69	50	34	23	23	21	4
PARAGUAY (AREA OF INFORMATION)	1986	174	-	6	16	28	44	20	18	21	12	3	6
PERU	1983	965	8	40	115	164	191	142	114	81	62	31	17
PUERTO RICO	1987	511	-	2	20	111	119	68	65	48	44	31	3
SURINAME	1985	54	-	2	6	8	8	6	8	4	8	4	-
TRINIDAD AND TOBAGO	1986	154	-	5	13	49	30	21	13	9	12	2	-
UNITED STATES	1987	33148	95	469	1509	10558	7833	4235	2413	2208	1879	1907	42
URUGUAY	1987	224	1	3	17	43	26	32	30	37	24	10	1
VENEZUELA	1987	3511	11	101	251	857	875	505	367	269	169	93	13
Female													
ARGENTINA	1986	760	8	43	96	121	76	85	93	75	75	76	11
BAHAMAS	1987	14	1	1	3	1	3	1	2	1	-	1	-
BARBADOS	1988	5	-	-	1	-	1	-	1	-	1	1	-
BELIZE	1986	4	-	-	-	2	1	-	-	1	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	6558	82	374	956	1345	1040	797	620	530	451	301	62
CANADA	1988	1119	7	24	77	276	178	114	86	119	122	115	1
CHILE	1987	163	5	9	23	36	24	13	12	21	11	9	-
COLOMBIA	1984	993	2	89	136	184	155	102	94	80	85	54	12
COSTA RICA	1988	76	-	7	11	13	8	10	9	11	1	6	-
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	1	-	-	-	-	-	-	-	-	1	-	-
DOMINICAN REPUBLIC	1985	104	1	3	14	20	12	8	10	12	11	13	-
ECUADOR	1987	406	5	40	82	51	53	43	26	45	36	23	2
EL SALVADOR	1984	177	1	10	34	22	21	20	25	13	15	12	4
FRENCH GUIANA	1984	5	-	-	-	1	2	-	-	-	1	1	-
GUADELOUPE	1981	22	1	-	3	3	5	1	-	4	2	3	-
GUATEMALA	1984	28	-	-	8	8	-	4	4	4	-	-	-
GUYANA	1984	2	-	-	1	-	-	-	-	-	1	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	18	-	1	5	2	3	1	1	2	-	1	-
MARTINIQUE	1985	12	-	1	3	1	3	1	-	-	2	-	1
MEXICO	1986	2516	24	223	441	391	350	247	237	191	195	194	23
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	-	-	1	-	-	-	-	-
PANAMA	1987	68	-	4	9	15	5	5	3	13	6	7	1
PARAGUAY (AREA OF INFORMATION)	1986	67	1	2	16	18	3	4	8	6	8	1	-
PERU	1983	288	6	18	49	53	46	33	24	28	12	12	7
PUERTO RICO	1987	141	4	6	4	33	22	23	15	12	11	11	-
SURINAME	1985	14	-	1	2	1	2	3	1	1	3	-	-
TRINIDAD AND TOBAGO	1986	40	2	3	4	7	5	7	1	1	2	4	3
UNITED STATES	1987	14149	100	363	781	3695	2478	1603	1094	1173	1330	1525	7
URUGUAY	1987	66	-	3	7	11	6	8	5	9	7	9	1
VENEZUELA	1987	860	13	71	124	186	135	104	88	69	41	27	2

TABLE III-9b(28).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from motor vehicle traffic accidents (E810–E819), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	10.1	8.7	3.0	4.4	4.6	10.4	10.0	11.6	13.8	14.2	14.9	23.9
BAHAMAS	1987	18.9	8.1	23.1	4.4	14.9	23.4	26.2	14.7	25.6	22.1	11.5	22.6
BARBADOS	1988	10.9	...	-	-	6.1	5.7	17.9	15.2	10.9	23.1	13.2	18.0
BELIZE	1986	10.8	9.7	-	-	8.0	11.1	24.7	11.5	-	21.5	-	-
BRAZIL (AREA OF INFORMATION)	1986	21.4	19.9	3.2	6.1	8.7	23.0	28.8	30.6	31.7	33.0	38.0	50.1
CANADA	1988	15.2	13.2	3.2	4.0	5.8	26.2	17.5	12.7	11.1	13.4	17.2	24.9
CHILE	1987	7.0	6.2	3.4	2.7	2.8	6.3	9.3	9.7	9.5	11.7	9.9	8.6
COLOMBIA	1984	16.4	15.6	0.7	7.3	7.4	16.0	21.9	22.8	21.9	24.6	34.7	67.7
COSTA RICA	1988	12.3	11.9	1.2	5.6	4.5	9.9	15.7	17.5	21.4	26.4	29.3	55.6
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	9.2	7.4	-	13.3	-	10.9	9.1	-	22.7	-	32.3	-
DOMINICAN REPUBLIC	1985	8.7	8.9	2.7	1.7	2.6	8.4	12.2	13.8	13.1	19.6	23.5	74.9
ECUADOR	1987	17.4	17.6	4.9	7.9	9.0	14.5	24.1	23.4	26.9	37.0	44.6	75.1
EL SALVADOR	1984	15.0	15.6	2.8	4.6	6.3	12.6	21.6	21.6	28.3	33.9	43.7	89.4
FRENCH GUIANA	1984	21.3	20.0	-	-	-	30.5	32.1	48.9	35.2	-	44.6	101.0
GUADELOUPE	1981	30.3	26.1	15.4	-	13.0	31.8	43.6	24.5	50.7	45.9	50.0	60.0
GUATEMALA	1984	1.4	1.5	-	0.4	0.6	2.4	2.8	1.9	1.7	2.5	-	-
GUYANA	1984	0.2	0.2	-	-	0.4	-	-	-	-	-	3.8	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	2.2	2.1	-	0.4	1.7	1.4	2.7	4.4	3.7	1.6	5.6	5.8
MARTINIQUE	1985	14.9	12.6	-	4.4	7.8	17.3	14.1	16.9	27.0	11.7	26.5	-
MEXICO	1986	15.1	15.3	2.6	5.9	6.2	15.0	22.0	23.5	24.2	26.9	36.2	58.8
NETHERLANDS ANTILLES (CURACAO)	1981	7.9	7.7	-	-	2.4	9.1	18.2	5.9	25.0	-	16.7	-
PANAMA	1987	17.1	15.9	1.7	5.8	4.3	17.9	21.6	23.6	23.8	33.2	42.1	87.0
PARAGUAY (AREA OF INFORMATION)	1986	10.6	10.5	1.9	2.8	5.5	9.9	13.5	11.8	19.4	27.7	35.5	16.2
PERU	1983	6.7	6.6	2.0	2.6	3.5	5.7	8.8	9.6	10.5	12.9	15.4	22.4
PUERTO RICO	1987	18.9	15.4	6.2	2.7	3.5	20.8	27.1	21.1	25.5	24.5	29.8	38.1
SURINAME	1985	18.1	17.6	-	7.5	8.0	10.0	20.0	26.1	31.0	26.3	110.0	66.7
TRINIDAD AND TOBAGO	1986	16.1	14.7	6.3	7.0	6.7	21.6	17.4	21.3	18.7	17.2	35.8	23.4
UNITED STATES	1987	19.4	17.2	5.1	5.7	4.7	37.3	23.8	17.0	15.1	15.4	18.2	28.2
URUGUAY	1987	9.5	7.8	1.9	2.7	4.4	10.9	7.7	11.4	10.2	15.0	15.0	15.6
VENEZUELA	1987	23.9	23.4	4.6	8.0	8.3	27.8	35.7	32.5	38.5	42.3	49.8	60.2
Male													
ARGENTINA	1986	15.2	13.0	3.2	5.3	5.9	15.4	16.3	18.3	21.6	23.6	23.6	38.1
BAHAMAS	1987	26.8	24.6	-	-	18.2	42.0	38.2	22.8	31.7	31.7	25.7	-
BARBADOS	1988	18.9	...	-	-	8.2	11.4	31.3	32.8	12.2	56.3	16.7	25.0
BELIZE	1986	16.8	15.3	-	-	15.8	11.0	41.4	23.5	-	22.2	-	-
BRAZIL (AREA OF INFORMATION)	1986	33.3	31.0	3.4	7.3	11.4	36.4	48.3	50.6	51.6	52.0	56.1	73.8
CANADA	1988	22.1	19.2	2.6	4.8	7.1	43.0	27.5	19.1	15.5	17.3	22.2	36.6
CHILE	1987	11.5	10.2	2.9	3.7	3.7	9.7	16.3	18.2	17.3	19.4	17.3	12.8
COLOMBIA	1984	25.7	24.5	0.9	8.1	10.6	25.9	36.4	37.9	34.1	39.1	52.3	118.4
COSTA RICA	1988	19.1	18.5	2.4	6.7	5.4	15.2	27.8	27.7	33.4	36.9	59.5	90.9
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	15.7	13.4	-	25.7	-	20.9	17.2	-	52.4	-	-	-
DOMINICAN REPUBLIC	1985	14.0	14.5	3.4	2.7	3.4	14.0	21.9	24.8	21.5	29.1	29.3	116.0
ECUADOR	1987	26.5	26.9	4.8	9.2	11.5	23.7	40.5	37.3	45.8	53.2	63.0	124.8
EL SALVADOR	1984	22.5	24.0	4.0	6.1	7.3	20.4	36.4	33.1	38.8	56.3	67.1	162.9
FRENCH GUIANA	1984	30.0	28.8	-	-	-	48.5	32.0	97.6	70.9	-	-	-
GUADELOUPE	1981	48.3	42.2	-	-	18.1	54.5	67.3	44.3	109.4	55.0	85.7	75.0
GUATEMALA	1984	2.1	2.1	-	0.7	0.4	3.7	5.5	2.5	1.7	2.5	-	-
GUYANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	2.8	2.8	-	-	1.4	2.1	3.6	8.0	6.3	-	7.3	9.2
MARTINIQUE	1985	23.2	18.5	-	-	3.9	31.9	16.1	29.8	58.0	25.4	33.3	-
MEXICO	1986	24.0	24.7	3.4	7.0	8.3	25.1	37.9	40.7	40.2	44.3	56.2	91.4
NETHERLANDS ANTILLES (CURACAO)	1981	14.6	14.0	-	-	4.8	17.6	36.4	-	50.0	-	33.3	-
PANAMA	1987	27.6	25.8	3.4	7.5	5.2	29.2	39.4	42.1	42.9	41.7	64.8	134.6
PARAGUAY (AREA OF INFORMATION)	1986	15.3	15.3	-	4.1	5.4	12.1	25.4	20.0	27.5	44.7	46.2	28.6
PERU	1983	10.2	10.2	2.5	3.5	4.8	8.5	13.9	15.5	17.5	19.7	27.7	37.5
PUERTO RICO	1987	29.5	24.9	-	1.3	5.7	31.8	48.6	33.7	44.4	42.0	50.9	61.5
SURINAME	1985	29.2	28.9	-	10.0	13.3	17.8	33.3	40.0	57.1	40.0	160.0	200.0
TRINIDAD AND TOBAGO	1986	25.6	23.4	-	8.6	10.0	37.9	29.8	32.2	31.2	29.5	56.3	21.7
UNITED STATES	1987	28.0	24.5	4.8	6.3	8.6	54.8	35.1	25.0	21.3	21.3	24.0	44.4
URUGUAY	1987	14.9	12.2	3.7	2.6	6.2	17.1	12.6	18.5	17.8	25.3	25.7	21.0
VENEZUELA	1987	38.0	37.4	4.2	9.2	10.9	45.0	61.1	53.2	62.1	68.2	85.2	108.8
Female													
ARGENTINA	1986	4.9	4.3	2.4	3.1	3.2	5.1	3.5	4.7	6.0	5.6	7.8	14.1
BAHAMAS	1987	11.1	11.5	46.0	8.7	11.4	4.0	14.3	7.1	19.8	13.8	-	35.2
BARBADOS	1988	3.7	...	-	-	4.1	-	4.5	-	9.8	-	10.9	14.1
BELIZE	1986	4.8	4.2	-	-	-	11.2	8.2	-	-	20.8	-	-
BRAZIL (AREA OF INFORMATION)	1986	9.4	8.9	3.1	5.0	6.0	9.6	9.4	10.9	12.0	14.5	21.2	29.8
CANADA	1988	8.5	7.2	3.8	3.2	4.3	12.9	7.6	6.1	6.6	9.7	13.3	17.7
CHILE	1987	2.6	2.4	3.9	1.7	1.9	2.8	2.9	1.6	2.2	5.1	4.2	5.9
COLOMBIA	1984	7.1	6.8	0.5	6.4	4.1	6.0	7.0	7.3	9.9	11.4	20.0	31.7
COSTA RICA	1988	5.4	5.3	-	4.5	3.5	4.3	3.4	7.0	9.4	16.3	2.5	30.2
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	2.7	1.4	-	-	-	-	-	-	-	-	58.8	-
DOMINICAN REPUBLIC	1985	3.3	3.4	1.8	0.8	1.7	2.8	2.5	2.8	5.0	9.7	17.5	37.2
ECUADOR	1987	8.2	8.3	5.0	6.6	6.4	5.1	7.5	9.3	8.3	21.5	27.9	35.1
EL SALVADOR	1984	7.5	7.6	1.4	3.1	5.3	4.7	6.5	10.0	18.0	12.9	25.1	38.0
FRENCH GUIANA	1984	12.5	10.8	-	-	-	12.3	32.1	-	-	-	84.7	185.2
GUADELOUPE	1981	13.1	11.0	31.0	-	7.8	8.4	21.9	6.0	-	36.7	22.2	50.0
GUATEMALA	1984	0.7	0.8	-	-	0.8	1.1	-	1.2	1.7	2.4	-	-
GUYANA	1984	0.4	0.4	-	-	0.9	-	-	-	-	-	7.2	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	1.5	1.5	-	0.8	1.9	0.7	1.8	1.2	1.4	3.0	4.1	3.4
MARTINIQUE	1985	7.1	7.4	-	9.2	11.6	2.7	12.1	5.3	-	-	20.2	-
MEXICO	1986	6.2	6.1	1.9	4.7	4.0	4.7	6.0	6.7	9.2	11.2	19.3	33.6
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	1.2	-	-	-	-	-	11.1	-	-	-	-
PANAMA	1987	6.1	5.7	-	3.5	3.3	6.3	3.0	4.4	3.9	24.4	18.0	42.2
PARAGUAY (AREA OF INFORMATION)	1986	5.9	5.9	3.9	1.4	5.5	7.8	1.7	3.9	11.7	11.9	26.4	7.0
PERU	1983	3.1	3.0	1.8	1.6	2.1	2.8	3.4	3.7	3.7	6.5	4.7	11.0
PUERTO RICO	1987	7.7	6.7	12.7	4.2	1.2	9.6	8.0	10.0	8.9	9.2	11.2	18.4
SURINAME	1985	7.4	7.5	-	5.0	4.5	2.2	7.7	17.6	6.7	11.1	60.0	-
TRINIDAD AND TOBAGO	1986	6.6	6.2	12.7	5.4	3.2	5.4	5.0	10.6	6.9	6.0	17.1	24.6
UNITED STATES	1987	11.3	9.9	5.4	5.1	4.7	19.5	11.4	9.2	9.1	10.1	13.5	19.4
URUGUAY	1987	4.2	3.5	-	2.7	2.6	4.5	2.9	4.5	2.9	5.6	6.2	12.1
VENEZUELA	1987	9.5	9.4	5.1	6.7	5.6	10.1	9.7	11.2	14.9	17.1	18.3	23.7

TABLE III-9a(29).

Number of deaths from suicide (E950–E959), by age, sex, and country, latest data available.

Country	Year	All ages	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	2315	-	-	18	289	307	321	348	381	352	279	20
BAHAMAS	1987	3	-	-	-	-	1	2	-	-	-	-	-
BARBADOS	1988	12	-	-	-	2	5	3	-	1	1	-	-
BELIZE	1986	3	-	-	-	2	1	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	4312	-	-	63	1016	1011	714	590	445	300	136	37
CANADA	1988	3510	-	-	28	645	847	697	452	404	263	174	-
CHILE	1987	693	-	-	7	154	178	110	84	88	55	19	-
COLOMBIA	1984	1071	-	-	29	411	249	134	108	65	43	18	14
COSTA RICA	1988	143	-	-	-	30	38	36	16	8	6	4	5
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	133	-	-	2	40	37	10	14	9	9	12	-
ECUADOR	1987	391	-	-	12	157	100	51	38	15	10	7	1
EL SALVADOR	1984	565	-	-	9	246	110	72	48	36	27	11	6
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	26	-	-	-	5	4	4	4	4	4	1	-
GUATEMALA	1984	40	-	-	-	4	8	8	4	8	8	-	-
GUYANA	1984	13	-	-	-	7	1	2	-	-	-	2	1
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	4	-	-	-	-	2	-	-	-	-	-	-
MARTINIQUE	1985	13	-	1	1	2	3	2	1	-	3	1	-
MEXICO	1986	1728	-	-	57	525	458	257	155	123	65	74	14
NETHERLANDS ANTILLES (CURACAO)	1981	5	-	-	-	1	1	-	1	1	1	-	-
PANAMA	1987	86	-	-	3	24	23	11	9	4	8	3	1
PARAGUAY (AREA OF INFORMATION)	1986	57	-	-	-	22	13	5	4	6	5	1	1
PERU	1983	99	-	-	4	36	17	15	8	12	2	2	3
PUERTO RICO	1987	272	-	-	1	30	50	61	27	43	33	27	-
SURINAME	1985	81	-	-	3	24	11	15	12	6	5	4	1
TRINIDAD AND TOBAGO	1986	104	-	-	1	25	34	17	13	6	6	2	-
UNITED STATES	1987	30796	-	-	251	4924	6655	5132	3707	3650	3428	3036	13
URUGUAY	1987	260	-	-	2	25	22	37	41	47	41	43	2
VENEZUELA	1987	749	-	-	8	220	171	110	80	87	45	25	3
Male													
ARGENTINA	1986	1654	-	-	10	186	209	224	254	264	266	230	11
BAHAMAS	1987	3	-	-	-	-	1	2	-	-	-	-	-
BARBADOS	1988	11	-	-	-	2	5	3	-	1	-	-	-
BELIZE	1986	2	-	-	-	1	1	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	3141	-	-	28	685	754	536	431	348	233	103	23
CANADA	1988	2734	-	-	24	549	679	506	321	321	204	130	-
CHILE	1987	568	-	-	6	116	147	90	70	74	46	19	-
COLOMBIA	1984	845	-	-	15	291	206	112	90	60	42	15	14
COSTA RICA	1988	124	-	-	-	22	32	33	16	8	6	4	3
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	91	-	-	1	24	27	8	8	9	5	9	-
ECUADOR	1987	260	-	-	8	78	74	43	30	12	8	6	1
EL SALVADOR	1984	401	-	-	3	140	89	56	42	33	23	11	4
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	22	-	-	-	4	3	4	4	3	4	-	-
GUATEMALA	1984	36	-	-	-	4	8	8	4	8	4	-	-
GUYANA	1984	8	-	-	-	4	1	1	-	-	-	1	1
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	3	-	-	-	-	2	-	-	-	1	-	-
MARTINIQUE	1985	8	-	1	1	2	2	-	-	1	-	1	-
MEXICO	1986	1457	-	-	42	408	388	231	130	114	62	70	12
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	-	1	-	1	1	1	-	-
PANAMA	1987	65	-	-	2	16	18	7	9	3	6	3	1
PARAGUAY (AREA OF INFORMATION)	1986	34	-	-	-	10	10	2	1	4	5	1	1
PERU	1983	69	-	-	2	26	11	10	5	9	1	2	3
PUERTO RICO	1987	234	-	-	1	25	46	50	22	36	31	23	-
SURINAME	1985	59	-	-	2	17	11	12	8	3	3	2	1
TRINIDAD AND TOBAGO	1986	69	-	-	1	13	25	11	10	4	4	1	-
UNITED STATES	1987	24272	-	-	199	4109	5370	3877	2692	2758	2724	2532	11
URUGUAY	1987	194	-	-	1	18	15	28	31	35	28	36	2
VENEZUELA	1987	611	-	-	3	180	146	79	68	69	39	24	3
Female													
ARGENTINA	1986	647	-	-	7	101	96	96	92	115	86	48	6
BAHAMAS	1987	-	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	1	-	-	-	-	-	-	-	-	1	-	-
BELIZE	1986	1	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1167	-	-	35	331	257	178	157	96	67	33	15
CANADA	1988	776	-	-	4	96	168	191	131	83	59	44	-
CHILE	1987	125	-	-	1	38	29	20	14	14	9	-	-
COLOMBIA	1984	226	-	-	14	120	43	22	18	5	1	3	-
COSTA RICA	1988	19	-	-	-	8	6	3	-	-	-	-	2
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	42	-	-	1	16	10	2	6	-	4	3	-
ECUADOR	1987	131	-	-	4	79	26	8	8	3	2	1	-
EL SALVADOR	1984	164	-	-	6	106	21	16	6	3	4	-	2
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	4	-	-	-	1	1	-	-	1	-	1	-
GUATEMALA	1984	4	-	-	-	-	-	-	-	-	4	-	-
GUYANA	1984	5	-	-	-	3	-	1	-	-	-	1	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	1	-	-	-	-	-	-	-	-	-	-	-
MARTINIQUE	1985	5	-	-	-	-	1	-	1	-	-	-	-
MEXICO	1986	271	-	-	15	117	70	28	25	9	3	4	2
NETHERLANDS ANTILLES (CURACAO)	1981	1	-	-	-	1	-	-	-	-	-	-	-
PANAMA	1987	21	-	-	1	8	5	4	-	1	2	-	-
PARAGUAY (AREA OF INFORMATION)	1986	23	-	-	-	12	3	3	3	2	-	-	-
PERU	1983	30	-	-	2	10	6	5	3	3	1	-	-
PUERTO RICO	1987	38	-	-	-	5	4	11	5	7	2	4	-
SURINAME	1985	22	-	-	1	7	-	3	4	3	2	2	-
TRINIDAD AND TOBAGO	1986	35	-	-	-	12	9	6	3	2	2	1	-
UNITED STATES	1987	6524	-	-	52	815	1285	1255	1015	892	704	504	2
URUGUAY	1987	66	-	-	1	7	7	9	10	12	13	7	-
VENEZUELA	1987	138	-	-	5	40	25	31	12	18	6	1	-

TABLE III-9b(29).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from suicide (E950–E959), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	7.5	5.4	-	-	0.3	6.0	6.9	8.7	11.4	14.6	20.5	30.8
BAHAMAS	1987	1.2	1.1	-	-	-	2.4	7.3	-	-	-	-	-
BARBADOS	1988	4.7	...	-	-	-	3.8	11.2	11.4	-	5.8	6.6	-
BELIZE	1986	1.8	1.6	-	-	-	5.5	4.1	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	3.1	2.8	-	-	0.2	3.6	4.6	4.9	5.8	6.2	7.3	7.3
CANADA	1988	13.5	10.0	-	-	0.8	14.7	18.1	18.6	17.3	17.1	15.8	16.6
CHILE	1987	5.5	4.6	-	-	0.3	6.0	8.4	7.1	7.9	11.4	11.9	7.8
COLOMBIA	1984	3.8	3.4	-	-	0.4	6.6	5.5	4.7	5.7	4.9	5.5	6.2
COSTA RICA	1988	5.0	4.5	-	-	-	4.9	8.0	12.6	8.3	6.0	8.0	11.7
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	2.1	2.1	-	-	0.1	2.8	3.8	1.6	3.5	3.5	7.1	18.0
ECUADOR	1987	3.9	3.9	-	-	0.5	7.8	7.0	5.5	6.1	3.7	4.1	5.9
EL SALVADOR	1984	11.9	12.2	-	-	0.7	26.1	17.0	17.9	17.4	18.5	25.1	20.5
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	8.0	8.4	-	-	-	6.9	9.2	12.3	14.5	18.3	25.0	10.0
GUATEMALA	1984	0.5	0.6	-	-	-	0.3	0.8	1.2	0.8	2.5	5.1	-
GUYANA	1984	1.4	1.2	-	-	-	3.3	0.6	2.4	-	-	-	16.7
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	0.2	0.2	-	-	-	-	0.6	-	0.7	-	1.1	-
MARTINIQUE	1985	4.0	3.6	-	4.4	1.9	2.7	5.0	5.6	-	11.7	-	7.7
MEXICO	1986	2.1	2.1	-	-	0.3	3.1	3.9	3.6	3.1	3.8	3.5	7.3
NETHERLANDS ANTILLES (CURACAO)	1981	3.0	2.7	-	-	-	3.0	4.5	-	8.3	11.1	16.7	-
PANAMA	1987	3.8	3.4	-	-	0.5	5.0	6.7	4.7	5.8	3.7	11.6	9.3
PARAGUAY (AREA OF INFORMATION)	1986	2.5	2.4	-	-	-	4.8	3.7	2.5	3.0	6.1	8.9	4.0
PERU	1983	0.5	0.5	-	-	0.1	1.0	0.6	0.8	0.6	1.4	0.4	1.0
PUERTO RICO	1987	7.7	5.8	-	-	0.1	4.3	9.6	14.1	8.6	17.5	17.9	24.5
SURINAME	1985	21.6	20.2	-	-	3.4	26.7	22.0	46.9	41.4	31.6	50.0	66.7
TRINIDAD AND TOBAGO	1986	8.6	7.5	-	-	0.4	9.6	16.9	12.9	15.2	9.4	13.4	9.3
UNITED STATES	1987	12.7	8.9	-	-	0.7	12.9	15.4	15.0	15.9	16.6	19.4	25.0
URUGUAY	1987	8.5	5.3	-	-	0.4	5.1	5.3	10.6	11.9	15.3	19.8	35.3
VENEZUELA	1987	4.1	4.0	-	-	0.2	5.9	6.0	5.9	6.8	10.9	10.7	12.5
Male													
ARGENTINA	1986	10.8	7.8	-	-	0.3	7.7	9.3	12.1	16.8	21.2	34.8	63.0
BAHAMAS	1987	2.4	2.2	-	-	-	-	4.8	15.2	-	-	-	-
BARBADOS	1988	9.0	...	-	-	-	7.6	22.3	24.6	-	14.1	-	-
BELIZE	1986	2.4	2.2	-	-	-	5.5	8.3	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	4.5	4.2	-	-	0.2	4.8	6.9	7.5	8.5	9.9	11.9	12.0
CANADA	1988	21.1	15.8	-	-	1.3	24.6	29.1	26.9	24.5	28.1	27.2	32.4
CHILE	1987	9.2	7.7	-	-	0.5	9.0	14.0	11.9	13.6	20.5	22.7	20.3
COLOMBIA	1984	6.0	5.4	-	-	0.4	9.3	9.1	7.7	9.5	9.4	11.8	12.4
COSTA RICA	1988	8.6	8.0	-	-	-	7.0	13.3	22.9	16.7	12.3	17.0	28.0
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	2.8	2.9	-	-	0.1	3.4	5.6	2.8	4.1	6.9	7.7	28.2
ECUADOR	1987	5.2	5.2	-	-	0.6	7.6	10.3	9.3	9.7	6.0	6.8	11.3
EL SALVADOR	1984	16.9	17.8	-	-	0.5	29.4	27.2	27.7	30.7	35.1	48.2	49.8
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	13.8	11.5	-	-	-	10.9	14.4	25.3	31.3	27.5	57.1	-
GUATEMALA	1984	0.9	1.0	-	-	-	0.5	1.6	2.5	1.7	4.9	5.1	-
GUYANA	1984	1.7	1.4	-	-	-	3.8	1.3	2.5	-	-	-	20.4
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	0.3	0.2	-	-	-	-	1.2	-	-	-	2.4	-
MARTINIQUE	1985	5.0	4.9	-	8.4	3.9	5.3	-	11.9	-	8.5	-	20.0
MEXICO	1986	3.6	3.7	-	-	0.4	4.7	6.7	6.5	5.4	7.4	7.3	15.8
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	4.4	-	-	-	-	9.1	-	16.7	25.0	33.3	-
PANAMA	1987	5.6	5.1	-	-	0.7	6.6	10.3	5.9	11.3	5.4	18.9	19.2
PARAGUAY (AREA OF INFORMATION)	1986	3.0	2.9	-	-	-	4.3	5.8	2.0	1.5	8.5	19.2	9.5
PERU	1983	0.7	0.7	-	-	0.1	1.4	0.8	1.1	0.8	2.2	0.4	2.4
PUERTO RICO	1987	13.5	10.5	-	-	0.3	7.2	18.8	24.8	15.0	31.5	35.8	45.6
SURINAME	1985	31.9	30.9	-	-	4.4	37.8	45.8	80.0	57.1	30.0	60.0	100.0
TRINIDAD AND TOBAGO	1986	11.5	10.2	-	-	0.8	10.1	24.8	16.9	24.0	13.1	18.8	10.9
UNITED STATES	1987	20.5	14.5	-	-	1.1	21.3	24.8	22.9	23.8	26.6	34.8	59.0
URUGUAY	1987	12.9	8.2	-	-	0.4	7.2	7.2	16.2	18.4	23.9	30.0	75.4
VENEZUELA	1987	6.6	6.5	-	-	0.1	9.5	10.2	8.3	11.5	17.5	19.7	28.1
Female													
ARGENTINA	1986	4.2	3.1	-	-	0.2	4.3	4.4	5.3	5.9	8.5	9.0	8.9
BAHAMAS	1987	-	-	-	-	-	-	-	-	-	-	-	-
BARBADOS	1988	0.7	...	-	-	-	-	-	-	-	-	-	-
BELIZE	1986	1.2	1.0	-	-	-	-	-	-	-	-	10.9	-
BRAZIL (AREA OF INFORMATION)	1986	1.7	1.5	-	-	-	5.6	-	-	-	-	-	-
CANADA	1988	5.9	4.2	-	-	0.2	2.4	2.3	2.4	3.0	2.6	3.2	3.3
CHILE	1987	2.0	1.6	-	-	0.2	4.5	7.2	10.3	10.1	6.8	6.4	6.8
COLOMBIA	1984	1.6	1.5	-	-	0.1	3.0	2.8	2.5	2.5	3.4	3.4	-
COSTA RICA	1988	1.3	1.0	-	-	0.4	3.8	1.9	1.6	1.9	0.7	0.2	1.8
CUBA	1988	...	...	...	...	...	2.6	2.5	2.1	-	-	-	-
DOMINICA	1985	-	-	-	-	-	...	...	...	...	...	...	...
DOMINICAN REPUBLIC	1985	1.3	1.3	-	-	0.1	2.3	2.1	0.7	3.0	-	6.4	8.6
ECUADOR	1987	2.7	2.5	-	-	0.3	7.9	3.7	1.7	2.5	1.4	1.5	1.5
EL SALVADOR	1984	7.0	6.8	-	-	0.9	22.7	6.5	8.0	4.3	3.0	6.7	-
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	2.4	1.7	-	-	-	2.8	4.4	-	-	9.2	-	16.7
GUATEMALA	1984	0.1	0.1	-	-	-	-	-	-	-	-	5.0	-
GUYANA	1984	1.1	1.0	-	-	-	2.9	-	2.3	-	-	-	17.2
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	0.1	0.1	-	-	-	-	-	-	1.4	-	-	-
MARTINIQUE	1985	3.0	2.3	-	-	-	-	12.1	-	-	14.5	-	-
MEXICO	1986	0.7	0.6	-	-	0.1	1.4	1.2	0.7	1.0	0.5	0.3	0.7
NETHERLANDS ANTILLES (CURACAO)	1981	1.2	1.2	-	-	-	6.3	-	-	-	-	-	-
PANAMA	1987	1.9	1.7	-	-	0.4	3.4	3.0	3.5	-	1.9	6.0	-
PARAGUAY (AREA OF INFORMATION)	1986	2.0	2.0	-	-	-	5.2	1.7	2.9	4.4	4.0	-	-
PERU	1983	0.3	0.3	-	-	0.1	0.5	0.4	0.6	0.5	0.7	0.4	-
PUERTO RICO	1987	2.1	1.6	-	-	-	1.5	1.5	4.8	3.0	5.4	2.0	6.7
SURINAME	1985	11.6	10.3	-	-	2.3	15.6	-	17.6	26.7	33.3	40.0	50.0
TRINIDAD AND TOBAGO	1986	5.8	5.0	-	-	-	9.2	8.9	9.1	6.9	6.0	8.5	8.2
UNITED STATES	1987	5.2	3.7	-	-	0.3	4.3	5.9	7.2	8.5	7.7	7.2	6.4
URUGUAY	1987	4.2	2.8	-	-	0.4	2.9	3.4	5.1	5.7	7.5	11.4	9.4
VENEZUELA	1987	1.5	1.5	-	-	0.2	2.2	1.8	3.3	2.0	4.5	2.7	0.9

TABLE III-9a(30).

Number of deaths from homicide (E960–E969), by age, sex, and country, latest data available.

Country	Year	Age in years: All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Both sexes													
ARGENTINA	1986	1778	29	19	58	380	403	299	235	142	104	51	58
BAHAMAS	1987	26	-	-	-	13	8	-	2	-	2	-	1
BARBADOS	1988	16	-	-	-	1	6	2	1	2	3	3	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	20483	55	52	343	6863	6431	3345	1748	736	305	109	496
CANADA	1988	487	10	11	14	84	143	90	66	31	21	16	1
CHILE	1987	342	5	2	2	75	93	68	40	33	14	10	-
COLOMBIA	1984	9360	19	33	108	2571	3217	1649	891	398	156	62	258
COSTA RICA	1988	115	2	1	1	32	35	19	10	2	9	3	1
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	1	-	-	-	-	1	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	310	1	2	3	85	91	50	29	18	6	25	-
ECUADOR	1987	1002	3	6	23	259	314	164	97	65	42	23	6
EL SALVADOR	1984	1929	1	7	36	721	487	310	182	84	43	17	41
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	11	-	-	-	5	1	2	3	-	-	-	-
GUATEMALA	1984	256	-	4	12	40	96	40	32	16	16	-	-
GUYANA	1984	2	-	-	-	-	1	-	-	1	-	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	33	-	-	1	8	14	2	2	3	1	1	1
MARTINIQUE	1985	12	-	-	-	2	1	2	2	2	2	-	1
MEXICO	1986	15800	69	142	390	4197	4353	2854	1800	1012	480	262	241
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	-	-	2	-	1	1	-	-
PANAMA	1987	156	2	1	4	45	52	27	11	8	1	3	2
PARAGUAY (AREA OF INFORMATION)	1986	153	-	1	-	42	46	31	14	9	3	1	6
PERU	1983	407	5	12	23	110	95	59	36	21	21	6	17
PUERTO RICO	1987	505	-	-	4	130	164	105	41	35	15	9	2
SURINAME	1985	20	-	1	1	7	3	5	1	-	1	1	-
TRINIDAD AND TOBAGO	1986	80	-	3	1	14	22	18	9	8	4	1	-
UNITED STATES	1987	20812	273	334	406	5291	6415	3660	1787	1192	760	595	99
URUGUAY	1987	96	-	1	3	19	17	18	13	13	6	3	3
VENEZUELA	1987	1400	6	6	19	493	471	202	108	54	24	11	6
Male													
ARGENTINA	1986	1409	15	10	38	309	337	251	183	118	80	33	35
BAHAMAS	1987	21	-	-	-	10	6	-	2	-	2	-	1
BARBADOS	1988	10	-	-	-	-	3	1	1	1	1	3	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	18659	27	40	235	6303	5923	3058	1610	673	285	77	450
CANADA	1988	321	6	4	9	53	90	64	46	22	17	9	1
CHILE	1987	307	3	1	2	69	85	63	36	30	10	8	-
COLOMBIA	1984	8685	15	21	80	2349	3045	1552	829	367	138	44	245
COSTA RICA	1988	99	1	-	1	25	32	16	10	2	8	3	1
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	1	-	-	-	-	1	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	278	-	-	1	75	83	46	29	15	5	24	-
ECUADOR	1987	896	3	-	14	237	296	151	87	54	32	16	6
EL SALVADOR	1984	1783	-	5	24	688	449	286	170	72	36	15	38
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	7	-	-	-	1	1	2	3	-	-	-	-
GUATEMALA	1984	208	-	-	4	32	84	28	32	16	12	-	-
GUYANA	1984	2	-	-	-	-	1	-	-	1	-	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	29	-	-	1	7	12	2	2	3	1	1	-
MARTINIQUE	1985	11	-	-	-	2	1	2	2	2	2	-	-
MEXICO	1986	14429	40	77	287	3882	4051	2675	1662	919	410	211	215
NETHERLANDS ANTILLES (CURACAO)	1981	4	-	-	-	-	-	2	-	1	1	-	-
PANAMA	1987	139	2	1	3	42	46	23	10	7	1	2	2
PARAGUAY (AREA OF INFORMATION)	1986	141	-	-	-	38	45	29	12	9	2	1	5
PERU	1983	343	3	10	15	95	87	53	28	16	15	5	16
PUERTO RICO	1987	458	-	-	3	119	145	94	41	34	14	8	-
SURINAME	1985	14	-	-	1	5	2	4	1	-	1	-	-
TRINIDAD AND TOBAGO	1986	62	-	-	1	10	20	14	7	6	3	1	-
UNITED STATES	1987	15571	155	164	245	4162	4916	2827	1357	900	482	297	66
URUGUAY	1987	63	-	1	-	11	12	9	11	11	5	1	2
VENEZUELA	1987	1282	5	3	14	460	441	181	99	47	20	8	4
Female													
ARGENTINA	1986	322	14	9	19	61	61	46	48	22	22	18	2
BAHAMAS	1987	5	-	-	-	3	2	-	-	-	-	-	-
BARBADOS	1988	8	-	-	-	1	3	1	-	1	2	-	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	1799	27	12	108	560	500	285	137	63	42	32	33
CANADA	1988	166	4	7	5	31	53	26	20	9	4	7	-
CHILE	1987	35	2	1	-	6	8	5	4	3	4	2	-
COLOMBIA	1984	675	4	12	28	222	172	97	62	29	18	18	13
COSTA RICA	1988	16	1	1	-	7	3	3	-	-	1	-	-
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	32	1	2	2	10	8	4	-	3	1	1	-
ECUADOR	1987	106	-	6	9	22	18	13	10	11	10	7	-
EL SALVADOR	1984	146	1	2	12	33	38	24	12	12	7	2	3
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	4	-	-	-	4	-	-	-	-	-	-	-
GUATEMALA	1984	48	-	4	8	8	12	12	-	-	4	-	-
GUYANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	4	-	-	1	2	-	-	-	-	-	-	1
MARTINIQUE	1985	1	-	-	-	-	-	-	-	-	-	-	1
MEXICO	1986	1371	29	65	103	315	302	179	138	93	70	51	26
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	17	-	-	1	3	6	4	1	1	-	1	-
PARAGUAY (AREA OF INFORMATION)	1986	12	-	1	-	4	1	2	2	-	1	-	1
PERU	1983	64	2	2	8	15	8	6	8	5	6	3	1
PUERTO RICO	1987	47	-	-	1	11	19	11	-	1	1	1	2
SURINAME	1985	6	-	1	-	2	1	1	-	-	-	-	-
TRINIDAD AND TOBAGO	1986	18	-	3	-	4	2	4	2	2	1	1	-
UNITED STATES	1987	5241	118	170	161	1129	1499	833	430	292	278	298	33
URUGUAY	1987	32	-	-	3	8	5	9	2	2	1	2	-
VENEZUELA	1987	118	1	3	5	33	30	21	9	7	4	3	2

TABLE III-9b(30).

Crude, age-adjusted, and age-specific death rates (per 100,000 population), from homicide (E960–E969), by age, sex, and country, latest data available.

Country	Year	Crude rate	Age-adj. rate	Age in years: Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over
Both sexes													
ARGENTINA	1986	5.8	5.1	4.3	0.7	1.0	7.9	9.1	8.1	7.7	5.5	6.0	5.6
BAHAMAS	1987	10.4	8.6	-	-	-	25.3	19.1	-	10.2	-	22.9	-
BARBADOS	1988	7.0	...	-	-	-	1.9	13.4	7.6	5.4	11.6	19.7	27.0
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	14.8	13.3	1.0	0.3	1.1	24.4	29.2	23.1	17.1	10.3	7.5	5.8
CANADA	1988	1.9	1.6	2.7	0.7	0.4	1.9	3.1	2.4	2.5	1.3	1.3	1.5
CHILE	1987	2.7	2.3	1.9	0.2	0.1	2.9	4.4	4.4	3.8	4.3	3.0	4.1
COLOMBIA	1984	33.3	29.7	2.3	1.2	1.6	41.5	71.4	57.9	46.8	29.6	19.9	21.3
COSTA RICA	1988	4.0	3.7	2.5	0.3	0.2	5.2	7.3	6.6	5.2	1.5	12.0	8.8
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	1.3	1.3	-	-	-	-	9.1	-	-	-	-	-
DOMINICAN REPUBLIC	1985	4.8	4.9	0.9	0.3	0.2	6.0	9.4	8.8	7.3	7.1	4.7	37.4
ECUADOR	1987	10.1	10.1	1.5	0.5	0.9	12.8	22.0	17.7	15.5	15.8	17.0	19.4
EL SALVADOR	1984	40.7	41.6	0.7	1.1	2.8	76.4	75.2	76.9	66.0	43.1	40.0	31.7
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	3.4	3.0	-	-	-	6.9	2.3	6.1	10.9	-	-	-
GUATEMALA	1984	3.3	3.6	-	0.4	0.6	2.7	9.5	6.2	6.7	4.9	10.2	-
GUYANA	1984	0.2	0.2	-	-	-	-	0.6	-	-	2.3	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	1.4	1.3	-	-	0.2	1.4	4.2	1.2	1.5	2.4	1.1	1.9
MARTINIQUE	1985	3.7	2.5	-	-	-	2.7	2.0	5.6	6.8	7.8	10.6	-
MEXICO	1986	19.5	19.6	2.7	1.5	1.8	24.7	37.5	39.4	36.2	31.2	25.9	25.7
NETHERLANDS ANTILLES (CURACAO)	1981	2.4	2.1	-	-	-	-	-	11.8	-	11.1	16.7	-
PANAMA	1987	6.9	6.4	3.5	0.4	0.7	9.4	15.2	11.6	7.1	7.4	1.5	9.3
PARAGUAY (AREA OF INFORMATION)	1986	6.7	6.5	-	0.3	-	9.1	13.3	15.3	10.4	9.2	5.3	4.0
PERU	1983	2.2	2.0	0.7	0.5	0.5	2.9	3.5	3.2	2.8	2.5	4.4	4.2
PUERTO RICO	1987	14.2	12.4	-	-	0.6	18.7	31.5	24.3	13.0	14.3	8.1	8.2
SURINAME	1985	5.3	5.2	-	2.5	1.1	7.8	6.0	15.6	3.4	-	10.9	16.7
TRINIDAD AND TOBAGO	1986	6.6	6.0	-	2.6	0.4	5.4	10.9	13.7	10.5	12.5	8.9	4.7
UNITED STATES	1987	8.6	7.5	7.1	2.3	1.2	13.8	14.8	10.7	7.7	5.4	4.3	4.9
URUGUAY	1987	9.1	2.6	-	0.4	0.6	3.8	4.1	5.1	3.8	4.2	2.9	2.5
VENEZUELA	1987	7.7	7.2	1.2	0.3	0.4	13.2	16.6	10.8	9.1	6.8	5.7	5.5
Male													
ARGENTINA	1986	9.2	8.0	4.4	0.7	1.2	12.7	15.0	13.5	12.1	9.5	10.5	9.0
BAHAMAS	1987	17.0	13.8	-	-	-	38.2	28.7	-	21.1	-	51.4	-
BARBADOS	1988	8.2	...	-	-	-	-	13.4	8.2	12.2	14.1	16.7	75.0
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	27.0	24.3	1.0	0.5	1.5	44.6	53.9	42.7	31.7	19.1	13.4	9.0
CANADA	1988	2.5	2.1	3.1	0.5	0.5	2.4	3.9	3.4	3.5	1.9	2.3	2.2
CHILE	1987	4.9	4.2	2.2	0.2	0.2	5.3	8.1	8.4	7.0	8.3	4.9	8.5
COLOMBIA	1984	61.6	54.9	3.6	1.5	2.4	75.2	133.9	107.1	87.2	57.7	38.6	36.4
COSTA RICA	1988	6.8	6.3	2.4	-	0.3	7.9	13.3	11.1	10.4	3.1	22.7	21.0
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	2.6	2.4	-	-	-	-	17.2	-	-	-	-	-
DOMINICAN REPUBLIC	1985	8.6	8.7	-	-	0.1	10.5	17.1	16.3	14.6	11.5	7.7	75.2
ECUADOR	1987	17.9	18.0	2.9	-	1.7	23.1	41.2	32.6	28.1	26.9	27.2	30.2
EL SALVADOR	1984	75.0	76.8	-	1.5	3.7	144.4	137.4	141.4	124.5	76.5	75.5	67.9
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	4.4	4.2	-	-	-	2.7	4.8	12.7	23.4	-	-	-
GUATEMALA	1984	5.3	5.9	-	-	0.4	4.2	16.6	8.6	13.3	9.9	15.4	-
GUYANA	1984	0.4	0.4	-	-	-	-	1.3	-	-	4.6	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	2.5	2.4	-	-	0.4	2.5	7.2	2.7	3.1	5.3	2.4	4.6
MARTINIQUE	1985	6.9	5.1	-	-	-	5.3	4.0	11.9	14.5	16.9	22.2	-
MEXICO	1986	35.5	36.3	3.1	1.6	2.5	45.1	69.7	75.1	69.0	59.8	48.3	47.7
NETHERLANDS ANTILLES (CURACAO)	1981	4.9	4.5	-	-	-	-	-	25.0	-	25.0	33.3	-
PANAMA	1987	12.0	11.1	6.8	0.8	1.0	17.3	26.3	19.3	12.6	12.7	2.8	12.8
PARAGUAY (AREA OF INFORMATION)	1986	12.4	12.2	-	-	-	16.4	25.9	29.0	18.3	19.1	7.7	9.5
PERU	1983	3.6	3.4	0.9	0.9	0.6	4.9	6.4	5.8	4.3	3.9	6.7	8.1
PUERTO RICO	1987	26.5	23.6	-	-	0.9	34.1	59.2	46.6	28.0	29.7	16.2	15.9
SURINAME	1985	7.6	7.5	-	-	2.2	11.1	8.3	26.7	7.1	-	20.0	-
TRINIDAD AND TOBAGO	1986	10.3	9.2	-	-	0.8	7.7	19.8	21.5	16.8	19.7	14.1	10.9
UNITED STATES	1987	13.1	11.3	7.9	2.2	1.4	21.5	22.7	16.7	12.0	8.7	6.2	6.9
URUGUAY	1987	4.2	3.2	-	0.9	-	4.4	5.8	5.2	6.5	7.5	5.4	2.1
VENEZUELA	1987	13.9	13.1	1.9	0.3	0.6	24.2	30.8	19.1	16.8	11.9	10.1	9.4
Female													
ARGENTINA	1986	2.1	1.9	4.2	0.7	0.6	2.6	2.8	2.5	3.1	1.6	2.3	3.3
BAHAMAS	1987	4.0	3.5	-	-	-	11.9	9.5	-	-	-	-	-
BARBADOS	1988	5.9	...	-	-	-	3.8	13.4	7.0	-	9.8	21.7	-
BELIZE	1986	-	-	-	-	-	-	-	-	-	-	-	-
BRAZIL (AREA OF INFORMATION)	1986	2.6	2.4	1.0	0.2	0.7	4.0	4.5	3.9	2.7	1.7	2.0	3.2
CANADA	1988	1.3	1.1	2.2	0.9	0.3	1.4	2.3	1.4	1.5	0.7	0.4	1.1
CHILE	1987	0.6	0.5	1.5	0.2	-	0.5	0.8	0.6	0.7	0.7	1.5	1.3
COLOMBIA	1984	4.8	4.4	1.0	0.9	0.9	7.2	7.7	6.9	6.5	4.1	4.2	10.6
COSTA RICA	1988	1.1	1.0	2.5	0.6	-	2.3	1.3	2.1	-	-	2.5	-
CUBA	1988	...	...	...	...	...	...	...	...	...	...	...	...
DOMINICA	1985	-	-	-	-	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	1985	1.0	1.0	1.8	0.5	0.2	1.4	1.7	1.4	-	2.4	1.6	2.9
ECUADOR	1987	2.1	2.1	-	1.0	0.7	2.2	2.5	2.8	3.2	5.3	7.7	10.7
EL SALVADOR	1984	6.2	6.3	1.4	0.6	1.9	7.1	11.8	12.0	8.6	11.9	11.7	6.3
FRENCH GUIANA	1984	...	...	...	...	...	...	...	...	...	...	...	...
GUADELOUPE	1981	2.4	2.1	-	-	-	11.2	-	-	-	-	-	-
GUATEMALA	1984	1.3	1.3	-	0.7	0.8	1.1	2.4	3.7	-	-	5.0	-
GUYANA	1984	-	-	-	-	-	-	-	-	-	-	-	-
HONDURAS	1981	...	...	...	...	...	...	...	...	...	...	...	...
JAMAICA	1984	0.3	0.2	-	-	-	0.4	1.2	-	-	-	-	-
MARTINIQUE	1985	0.6	0.0	-	-	-	-	-	-	-	-	-	-
MEXICO	1986	3.4	3.3	2.3	1.4	0.9	3.7	5.2	4.9	5.4	5.5	6.9	8.8
NETHERLANDS ANTILLES (CURACAO)	1981	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	1987	1.5	1.5	-	-	0.4	1.3	3.6	3.5	1.3	1.9	-	6.0
PARAGUAY (AREA OF INFORMATION)	1986	1.1	1.0	-	0.7	-	1.7	0.6	1.9	2.9	-	3.3	-
PERU	1983	0.7	0.7	0.6	0.2	0.3	0.8	0.6	0.7	1.2	1.2	2.3	2.7
PUERTO RICO	1987	2.6	2.2	-	-	0.3	3.2	6.9	4.8	-	0.8	1.0	1.7
SURINAME	1985	3.2	2.9	-	5.0	-	4.4	3.8	5.9	-	-	-	25.0
TRINIDAD AND TOBAGO	1986	3.0	2.9	-	5.4	-	3.1	2.0	6.0	4.6	6.0	4.3	-
UNITED STATES	1987	4.2	3.8	6.3	2.4	1.0	6.0	6.9	4.8	3.6	2.5	2.8	3.8
URUGUAY	1987	2.1	1.9	-	-	1.1	3.3	2.4	5.1	1.1	1.2	0.9	2.7
VENEZUELA	1987	1.3	1.2	0.4	0.3	0.2	1.8	2.1	2.3	1.5	1.7	1.8	2.6

TABLE III-10a.

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		241004	784.1	100.0		133798	877.4	100.0		105801	683.1	100.0
Symptoms and ill-defined conditions (780-799)		5455	17.7	2.3		3132	20.5	2.3		2261	14.6	2.1
Total number of deaths from defined causes**		235549	766.3	100.0		130666	856.8	100.0		103540	668.5	100.0
Diseases of the heart (390-429)	1	76856	250.0	32.6	1	41957	275.1	32.1	1	34491	222.7	33.3
Malignant neoplasms (140-208)	2	42683	138.9	18.1	2	23907	156.8	18.3	2	18609	120.2	18.0
Cerebrovascular disease (430-438)	3	24383	79.3	10.4	3	12444	81.6	9.5	3	11820	76.3	11.4
Accidents (E800-E949, E980-E989)	4	12351	40.2	5.2	4	8672	56.9	6.6	5	3552	22.9	3.4
Certain conditions originating in the perinatal period (760-779)	5	9631	31.3	4.1	5	5470	35.9	4.2	4	4089	26.4	3.9
All other causes		69645	226.6	29.6		38216	250.6	29.2		30979	200.0	29.9
BAHAMAS, 1987												
All causes		1411	566.6	100.0		771	625.6	100.0		605	481.1	100.0
Symptoms and ill-defined conditions (780-799)		36	14.5	2.6		16	13.0	2.1		20	15.9	3.3
Total number of deaths from defined causes**		1375	552.2	100.0		755	612.6	100.0		585	465.2	100.0
Malignant neoplasms (140-208)	1	267	107.2	19.4	1	165	133.9	21.9	2	102	81.1	17.4
Diseases of the heart (390-429)	2	250	100.4	18.2	2	129	104.7	17.1	1	121	96.2	20.7
Accidents (E800-E949, E980-E989)	3	155	62.2	11.3	3	116	94.1	15.4	5	39	31.0	6.7
Cerebrovascular disease (430-438)	4	115	46.2	8.4	4	51	41.4	6.8	3	64	50.9	10.9
Diabetes mellitus (250)	5	68	27.3	4.9	-	24	19.5	3.2	4	44	35.0	7.5
Influenza and pneumonia (480-487)	-	56	22.5	4.1	5	33	26.8	4.4	-	23	18.3	3.9
All other causes		464	186.3	33.7		237	192.3	31.4		192	152.7	32.8
BARBADOS, 1988												
All causes		2174	845.9	100.0		1075	882.6	100.0		1099	812.9	100.0
Symptoms and ill-defined conditions (780-799)		82	31.9	3.8		40	32.8	3.7		42	31.1	3.8
Total number of deaths from defined causes**		2092	814.0	100.0		1035	849.8	100.0		1057	781.8	100.0
Diseases of the heart (390-429)	1	507	197.3	24.2	1	239	196.2	23.1	1	268	198.2	25.4
Malignant neoplasms (140-208)	2	413	160.7	19.7	2	211	173.2	20.4	2	202	149.4	19.1
Cerebrovascular disease (430-438)	3	274	106.6	13.1	3	122	100.2	11.8	3	152	112.4	14.4
Diabetes mellitus (250)	4	174	67.7	8.3	5	58	47.6	5.6	4	116	85.8	11.0
Accidents (E800-E949, E980-E989)	5	83	32.3	4.0	4	61	50.1	5.9	-	22	16.3	2.1
Influenza and pneumonia (480-487)	-	55	21.4	2.6	-	29	23.8	2.8	5	26	19.2	2.5
All other causes		586	228.0	28.0		315	258.6	30.4		271	200.4	25.6
BELIZE, 1986												
All causes		787	471.2	100.0		437	523.5	100.0		350	418.9	100.0
Symptoms and ill-defined conditions (780-799)		85	50.9	10.8		44	52.7	10.1		41	49.1	11.7
Total number of deaths from defined causes**		702	420.3	100.0		393	470.8	100.0		309	369.8	100.0
Diseases of the heart (390-429)	1	98	58.7	14.0	2	50	59.9	12.7	1	48	57.5	15.5
Accidents (E800-E949, E980-E989)	2	82	49.1	11.7	1	63	75.5	16.0	5	19	22.7	6.1
Influenza and pneumonia (480-487)	3	80	47.9	11.4	3	42	50.3	10.7	2	38	45.5	12.3
Cerebrovascular disease (430-438)	4	63	37.7	9.0	4	35	41.9	8.9	3	28	33.5	9.1
Malignant neoplasms (140-208)	5	52	31.1	7.4	-	28	33.5	7.1	4	24	28.7	7.8
Certain conditions originating in the perinatal period (760-779)	-	51	30.5	7.3	5	33	39.5	8.4	-	18	21.5	5.8
All other causes		276	165.2	39.3		142	170.1	36.1		134	160.4	43.4
BRAZIL (AREA OF INFORMATION), 1986												
All causes		811623	586.0	100.0		477138	690.8	100.0		333388	480.1	100.0
Symptoms and ill-defined conditions (780-799)		165552	119.5	20.4		93351	135.2	19.6		72025	103.7	21.6
Total number of deaths from defined causes**		646071	466.5	100.0		383787	555.7	100.0		261363	376.4	100.0
Diseases of the heart (390-429)	1	132404	95.6	20.5	1	72696	105.3	18.9	1	59596	85.8	22.8
Cerebrovascular disease (430-438)	2	73887	53.3	11.4	4	38736	56.1	10.1	2	35080	50.5	13.4

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
BRAZIL (AREA OF INFORMATION), 1986 (cont.)												
Malignant neoplasms (140-208)	3	72686	52.5	11.3	3	39692	57.5	10.3	3	32936	47.4	12.6
Accidents (E800-E949, E980-E989)	4	71169	51.4	11.0	2	56146	81.3	14.6	-	14925	21.5	5.7
Certain conditions originating in the perinatal period (760-779).....	5	45854	33.1	7.1	5	26601	38.5	6.9	4	18974	27.3	7.3
Influenza and pneumonia (480-487)	-	35587	25.7	5.5	-	19880	28.8	5.2	5	15652	22.5	6.0
All other causes		214484	154.9	33.2		130036	188.3	33.9		84199	121.3	32.2
CANADA, 1988												
All causes		190011	728.2	100.0		104106	805.1	100.0		85905	652.6	100.0
Symptoms and ill-defined conditions (780-799)		3122	12.0	1.6		1747	13.5	1.7		1375	10.4	1.6
Total number of deaths from defined causes**		186889	716.2	100.0		102359	791.6	100.0		84530	642.2	100.0
Diseases of the heart (390-429)	1	58457	224.0	31.3	1	32227	249.2	31.5	1	26230	199.3	31.0
Malignant neoplasms (140-208)	2	50756	194.5	27.2	2	28104	217.4	27.5	2	22652	172.1	26.8
Cerebrovascular disease (430-438)	3	14078	54.0	7.5	4	5866	45.4	5.7	3	8212	62.4	9.7
Accidents (E800-E949, E980-E989)	4	9622	36.9	5.1	3	6457	49.9	6.3	5	3165	24.0	3.7
Influenza and pneumonia (480-487)	5	6697	25.7	3.6	5	3364	26.0	3.3	4	3333	25.3	3.9
All other causes		47279	181.2	25.3		26341	203.7	25.7		20938	159.1	24.8
CAYMAN ISLANDS, 1983												
All causes		105	552.3	100.0		...	...	...		...	...	...
Symptoms and ill-defined conditions (780-799)		7	36.8	6.7		...	...	...		...	...	...
Total number of deaths from defined causes**		98	515.5	100.0		...	...	...		...	...	...
Diseases of the heart (390-429)	1	17	89.4	17.3	-	...	...	...	-	...	...	...
Accidents (E800-E949, E980-E989)	2	8	42.1	8.2	-	...	...	...	-	...	...	...
Cerebrovascular disease (430-438)	3	7	36.8	7.1	-	...	...	...	-	...	...	...
Malignant neoplasms (140-208)	4	2	10.5	2.0	-	...	...	...	-	...	...	...
Congenital anomalies (740-759)	4	2	10.5	2.0	-	...	...	...	-	...	...	...
All other causes		62	326.1	63.3		...	...	...		...	...	...
CHILE, 1987												
All causes		70559	562.8	100.0		38086	613.9	100.0		32473	512.8	100.0
Symptoms and ill-defined conditions (780-799)		5733	45.7	8.1		2832	45.6	7.4		2901	45.8	8.9
Total number of deaths from defined causes**		64826	517.1	100.0		35254	568.2	100.0		29572	467.0	100.0
Malignant neoplasms (140-208)	1	13081	104.3	20.2	1	6372	102.7	18.1	1	6709	105.9	22.7
Diseases of the heart (390-429)	2	11378	90.8	17.6	2	5757	92.8	16.3	2	5621	88.8	19.0
Accidents (E800-E949, E980-E989)	3	7369	58.8	11.4	3	5655	91.1	16.0	5	1714	27.1	5.8
Cerebrovascular disease (430-438)	4	6526	52.1	10.1	4	3057	49.3	8.7	3	3469	54.8	11.7
Influenza and pneumonia (480-487)	5	5210	41.6	8.0	5	2689	43.3	7.6	4	2521	39.8	8.5
All other causes		21262	169.6	32.8		11724	189.0	33.3		9538	150.6	32.3
COLOMBIA, 1984												
All causes		137189	488.0	100.0		78180	554.4	100.0		59009	421.3	100.0
Symptoms and ill-defined conditions (780-799)		7889	28.1	5.8		4052	28.7	5.2		3837	27.4	6.5
Total number of deaths from defined causes**		129300	460.0	100.0		74128	525.6	100.0		55172	393.9	100.0
Diseases of the heart (390-429)	1	28216	100.4	21.8	1	14846	105.3	20.0	1	13370	95.5	24.2
Malignant neoplasms (140-208)	2	16960	60.3	13.1	4	8087	57.3	10.9	2	8873	63.3	16.1
Accidents (E800-E949, E980-E989)	3	14021	49.9	10.8	2	10803	76.6	14.6	4	3218	23.0	5.8
Cerebrovascular disease (430-438)	4	10776	38.3	8.3	5	4925	34.9	6.6	3	5851	41.8	10.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	9363	33.3	7.2	3	8688	61.6	11.7	-	675	4.8	1.2
Certain conditions originating in the perinatal period (760-779).....	-	6348	22.6	4.9	-	3723	26.4	5.0	5	2625	18.7	4.8
All other causes		43616	155.2	33.7		23056	163.5	31.1		20560	146.8	37.3

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
COSTA RICA, 1988												
All causes		10944	381.8	100.0		6238	430.8	100.0		4706	331.8	100.0
Symptoms and ill-defined conditions (780-799)		251	8.8	2.3		132	9.1	2.1		119	8.4	2.5
Total number of deaths from defined causes**		10693	373.1	100.0		6106	421.7	100.0		4587	323.4	100.0
Malignant neoplasms (140-208)	1	2328	81.2	21.8	1	1275	88.1	20.9	1	1053	74.2	23.0
Diseases of the heart (390-429)	2	2232	77.9	20.9	2	1225	84.6	20.1	2	1007	71.0	22.0
Accidents (E800-E949, E980-E989)	3	960	33.5	9.0	3	708	48.9	11.6	4	252	17.8	5.5
Cerebrovascular disease (430-438)	4	806	28.1	7.5	4	398	27.5	6.5	3	408	28.8	8.9
Certain conditions originating in the perinatal period (760-779)	5	551	19.2	5.2	5	346	23.9	5.7	5	205	14.5	4.5
All other causes		3816	133.1	35.7		2154	148.8	35.3		1662	117.2	36.2
CUBA, 1988												
All causes		67944	669.1	100.0		38384	742.4	100.0		29560	593.1	100.0
Symptoms and ill-defined conditions (780-799)		151	1.5	0.2		97	1.9	0.3		54	1.1	0.2
Total number of deaths from defined causes**		67793	667.7	100.0		38287	740.6	100.0		29506	592.0	100.0
Diseases of the heart (390-429)	1	19979	196.8	29.5	1	11241	217.4	29.4	1	8738	175.3	29.6
Malignant neoplasms (140-208)	2	12977	127.8	19.1	2	7651	148.0	20.0	2	5326	106.9	18.1
All accidents and violence (E800-E999)	3	8278	81.5	12.2	3	5563	107.6	14.5	4	2715	54.5	9.2
Cerebrovascular disease (430-438)	4	6513	64.1	9.6	4	3292	63.7	8.6	3	3221	64.6	10.9
Influenza and pneumonia (480-487)	5	3267	32.2	4.8	5	1836	35.5	4.8	5	1431	28.7	4.8
All other causes		16779	165.2	24.8		8704	168.4	22.7		8075	162.0	27.4
DOMINICA, 1985												
All causes		466	612.9	100.0		230	600.2	100.0		236	625.8	100.0
Symptoms and ill-defined conditions (780-799)		80	105.2	17.2		32	83.5	13.9		48	127.3	20.3
Total number of deaths from defined causes**		386	507.7	100.0		198	516.7	100.0		188	498.5	100.0
Diseases of the heart (390-429)	1	107	140.7	27.7	1	44	114.8	22.2	1	63	167.1	33.5
Malignant neoplasms (140-208)	2	55	72.3	14.2	2	34	88.7	17.2	2	21	55.7	11.2
Cerebrovascular disease (430-438)	3	32	42.1	8.3	4	16	41.8	8.1	3	16	42.4	8.5
Certain conditions originating in the perinatal period (760-779)	4	22	28.9	5.7	5	11	28.7	5.6	4	11	29.2	5.9
Accidents (E800-E949, E980-E989)	5	20	26.3	5.2	3	19	49.6	9.6	-	1	2.7	0.5
Influenza and pneumonia (480-487)	-	18	23.7	4.7	-	9	23.5	4.5	5	9	23.9	4.8
Diabetes mellitus (250)	-	14	18.4	3.6	-	5	13.0	2.5	5	9	23.9	4.8
All other causes		118	155.2	30.6		60	156.6	30.3		58	153.8	30.9
DOMINICAN REPUBLIC, 1985												
All causes		27844	434.0	100.0		15248	472.2	100.0		12596	395.2	100.0
Symptoms and ill-defined conditions (780-799)		4178	65.1	15.0		2121	65.7	13.9		2057	64.5	16.3
Total number of deaths from defined causes**		23666	368.9	100.0		13127	406.5	100.0		10539	330.7	100.0
Diseases of the heart (390-429)	1	4535	70.7	19.2	1	2385	73.9	18.2	1	2150	67.5	20.4
Certain conditions originating in the perinatal period (760-779)	2	2735	42.6	11.6	2	1514	46.9	11.5	2	1221	38.3	11.6
Malignant neoplasms (140-208)	3	1760	27.4	7.4	5	886	27.4	6.7	3	874	27.4	8.3
Intestinal infections due to specified organisms and ill defined (007-009)	4	1738	27.1	7.3	4	922	28.6	7.0	5	816	25.6	7.7
Cerebrovascular disease (430-438)	5	1726	26.9	7.3	-	883	27.3	6.7	4	843	26.5	8.0
Accidents (E800-E949, E980-E989)	-	1667	26.0	7.0	3	1288	39.9	9.8	-	379	11.9	3.6
All other causes		9505	148.1	40.2		5249	162.6	40.0		4256	133.5	40.4
ECUADOR, 1987												
All causes		51567	519.7	100.0		28235	565.6	100.0		23332	473.2	100.0
Symptoms and ill-defined conditions (780-799)		7771	78.3	15.1		3791	75.9	13.4		3980	80.7	17.1
Total number of deaths from defined causes**		43796	441.4	100.0		24444	489.7	100.0		19352	392.5	100.0
Diseases of the heart (390-429)	1	5343	53.8	12.2	2	2705	54.2	11.1	1	2638	53.5	13.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ECUADOR, 1987 (cont.)												
Accidents (E800-E949, E980-E989)	2	4776	48.1	10.9	1	3644	73.0	14.9	-	1132	23.0	5.8
Malignant neoplasms (140-208)	3	4738	47.8	10.8	3	2209	44.3	9.0	2	2529	51.3	13.1
Intestinal infections due to specified organisms and ill defined (007-009).	4	3519	35.5	8.0	4	1835	36.8	7.5	3	1684	34.2	8.7
Influenza and pneumonia (480-487)	5	2945	29.7	6.7	-	1540	30.8	6.3	4	1405	28.5	7.3
Certain conditions originating in the perinatal period (760-779).....	-	2944	29.7	6.7	5	1722	34.5	7.0	5	1222	24.8	6.3
All other causes		19531	196.8	44.6		10789	216.1	44.1		8742	177.3	45.2
EL SALVADOR, 1984												
All causes		28870	609.3	100.0		17320	728.1	100.0		11550	489.6	100.0
Symptoms and ill-defined conditions (780-799)		6727	142.0	23.3		3334	140.1	19.2		3393	143.8	29.4
Total number of deaths from defined causes**		22143	467.3	100.0		13986	587.9	100.0		8157	345.7	100.0
Accidents (E800-E949, E980-E989)	1	3462	73.1	15.6	1	2913	122.5	20.8	5	549	23.3	6.7
Certain conditions originating in the perinatal period (760-779).....	2	2898	61.2	13.1	3	1640	68.9	11.7	1	1258	53.3	15.4
Diseases of the heart (390-429)	3	2098	44.3	9.5	4	1152	48.4	8.2	2	946	40.1	11.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	1929	40.7	8.7	2	1783	75.0	12.7	-	146	6.2	1.8
Intestinal infections due to specified organisms and ill defined (007-009).	5	1702	35.9	7.7	5	964	40.5	6.9	3	738	31.3	9.0
Malignant neoplasms (140-208)	-	1033	21.8	4.7	-	421	17.7	3.0	4	612	25.9	7.5
All other causes		9021	190.4	40.7		5113	214.9	36.6		3908	165.6	47.9
FRENCH GUIANA, 1984												
All causes		469	586.3	100.0		283	707.0	100.0		186	465.3	100.0
Symptoms and ill-defined conditions (780-799)		62	77.5	13.2		36	89.9	12.7		26	65.0	14.0
Total number of deaths from defined causes**		407	508.8	100.0		247	617.0	100.0		160	400.3	100.0
Diseases of the heart (390-429)	1	85	106.3	20.9	2	41	102.4	16.6	1	44	110.1	27.5
Accidents (E800-E949, E980-E989)	2	60	75.0	14.7	1	46	114.9	18.6	4	14	35.0	8.8
Malignant neoplasms (140-208)	3	51	63.8	12.5	3	29	72.4	11.7	2	22	55.0	13.8
Cerebrovascular disease (430-438)	4	34	42.5	8.4	4	18	45.0	7.3	3	16	40.0	10.0
Chronic liver disease and cirrhosis (571)	5	25	31.3	6.1	5	16	40.0	6.5	-	9	22.5	5.6
Bronchitis, emphysema and asthma (490-493)	-	18	22.5	4.4	-	8	20.0	3.2	5	10	25.0	6.3
All other causes		134	167.5	32.9		89	222.3	36.0		45	112.6	28.1
GUADELOUPE, 1981												
All causes		2091	639.4	100.0		1132	709.7	100.0		959	572.5	100.0
Symptoms and ill-defined conditions (780-799)		203	62.1	9.7		88	55.2	7.8		115	68.7	12.0
Total number of deaths from defined causes**		1888	577.4	100.0		1044	654.5	100.0		844	503.9	100.0
Diseases of the heart (390-429)	1	407	124.5	21.6	1	195	122.3	18.7	1	212	126.6	25.1
Malignant neoplasms (140-208)	2	316	96.6	16.7	2	179	112.2	17.1	2	137	81.8	16.2
Accidents (E800-E949, E980-E989)	3	240	73.4	12.7	3	171	107.2	16.4	4	69	41.2	8.2
Cerebrovascular disease (430-438)	4	202	61.8	10.7	4	93	58.3	8.9	3	109	65.1	12.9
Mental disorders (290-319)	5	96	29.4	5.1	5	74	46.4	7.1	-	22	13.1	2.6
Diabetes mellitus (250)	-	75	22.9	4.0	-	21	13.2	2.0	5	54	32.2	6.4
All other causes		552	168.8	29.2		311	195.0	29.8		241	143.9	28.6
GUATEMALA, 1984												
All causes		66260	856.1	100.0		35848	915.9	100.0		30412	794.9	100.0
Symptoms and ill-defined conditions (780-799)		6908	89.3	10.4		3556	90.9	9.9		3352	87.6	11.0
Total number of deaths from defined causes**		59352	766.8	100.0		32292	825.0	100.0		27060	707.3	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	10372	134.0	17.5	2	5380	137.5	16.7	1	4992	130.5	18.4
Certain conditions originating in the perinatal period (760-779).....	2	9684	125.1	16.3	1	5544	141.6	17.2	3	4140	108.2	15.3

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
GUATEMALA, 1984 (cont.)												
Influenza and pneumonia (480-487)	3	9576	123.7	16.1	3	4984	127.3	15.4	2	4592	120.0	17.0
Accidents (E800-E949, E980-E989)	4	3716	48.0	6.3	4	3124	79.8	9.7	-	592	15.5	2.2
Nutritional deficiencies (260-269) ...	5	3508	45.3	5.9	5	1760	45.0	5.5	4	1748	45.7	6.5
Diseases of the heart (390-429)	-	3204	41.4	5.4	-	1720	43.9	5.3	5	1484	38.8	5.5
All other causes		19292	249.3	32.5		9780	249.9	30.3		9512	248.6	35.2
GUYANA, 1984												
All causes		4781	510.8	100.0		2774	590.7	100.0		2007	430.3	100.0
Symptoms and ill-defined conditions (780-799)		515	55.0	10.8		255	54.3	9.2		260	55.7	13.0
Total number of deaths from defined causes**		4266	455.8	100.0		2519	536.4	100.0		1747	374.6	100.0
Diseases of the heart (390-429)	1	875	93.5	20.5	1	520	110.7	20.6	1	355	76.1	20.3
Cerebrovascular disease (430-438)	2	597	63.8	14.0	2	336	71.6	13.3	2	261	56.0	14.9
Accidents (E800-E949, E980-E989)	3	318	34.0	7.5	3	240	51.1	9.5	-	78	16.7	4.5
Malignant neoplasms (140-208)	4	280	29.9	6.6	5	135	28.7	5.4	3	145	31.1	8.3
Nutritional deficiencies (260-269) ...	5	249	26.6	5.8	4	154	32.8	6.1	5	95	20.4	5.4
Diabetes mellitus (250)	-	163	17.4	3.8	-	65	13.8	2.6	4	98	21.0	5.6
All other causes		1784	190.6	41.8		1069	227.6	42.4		715	153.3	40.9
HONDURAS, 1981												
All causes		18313	479.2	100.0		10239	534.3	100.0		8074	423.7	100.0
Symptoms and ill-defined conditions (780-799)		6338	165.8	34.6		3248	169.5	31.7		3090	162.1	38.3
Total number of deaths from defined causes**		11975	313.3	100.0		6991	364.8	100.0		4984	261.5	100.0
All accidents and violence (E800-E999)	1	2061	53.9	17.2	1	1756	91.6	25.1	4	305	16.0	6.1
Intestinal infections due to specified organisms and ill defined (007-009).	2	1929	50.5	16.1	2	1075	56.1	15.4	1	854	44.8	17.1
Diseases of the heart (390-429)	3	1447	37.9	12.1	3	760	39.7	10.9	2	687	36.0	13.8
Certain conditions originating in the perinatal period (760-779).....	4	602	15.8	5.0	4	351	18.3	5.0	-	251	13.2	5.0
Malignant neoplasms (140-208)	5	569	14.9	4.8	-	208	10.9	3.0	3	361	18.9	7.2
Influenza and pneumonia (480-487)	-	557	14.6	4.7	5	287	15.0	4.1	5	270	14.2	5.4
All other causes		4810	125.9	40.2		2554	133.3	36.5		2256	118.4	45.3
JAMAICA, 1984												
All causes		13706	595.6	100.0		7048	618.7	100.0		6658	573.0	100.0
Symptoms and ill-defined conditions (780-799)		1745	75.8	12.7		908	79.7	12.9		837	72.0	12.6
Total number of deaths from defined causes**		11961	519.8	100.0		6140	539.0	100.0		5821	500.9	100.0
Diseases of the heart (390-429)	1	2761	120.0	23.1	1	1336	117.3	21.8	1	1425	122.6	24.5
Malignant neoplasms (140-208)	2	2073	90.1	17.3	2	1069	93.8	17.4	3	1004	86.4	17.2
Cerebrovascular disease (430-438)	3	1953	84.9	16.3	3	851	74.7	13.9	2	1102	94.8	18.9
Diabetes mellitus (250)	4	709	30.8	5.9	5	277	24.3	4.5	4	432	37.2	7.4
Intestinal infections due to specified organisms and ill defined (007-009).	5	524	22.8	4.4	-	266	23.3	4.3	5	258	22.2	4.4
Accidents (E800-E949, E980-E989)	-	396	17.2	3.3	4	302	26.5	4.9	-	94	8.1	1.6
All other causes		3545	154.1	29.6		2039	179.0	33.2		1506	129.6	25.9
MARTINIQUE, 1985												
All causes		2140	652.6	100.0		1146	718.5	100.0		994	590.3	100.0
Symptoms and ill-defined conditions (780-799)		237	72.3	11.1		110	69.0	9.6		127	75.4	12.8
Total number of deaths from defined causes**		1903	580.4	100.0		1036	649.5	100.0		867	514.8	100.0
Malignant neoplasms (140-208)	1	425	129.6	22.3	1	235	147.3	22.7	2	190	112.8	21.9
Cerebrovascular disease (430-438)	2	362	110.4	19.0	2	191	119.7	18.4	3	171	101.5	19.7
Diseases of the heart (390-429)	3	361	110.1	19.0	3	160	100.3	15.4	1	201	119.4	23.2
Accidents (E800-E949, E980-E989)	4	147	44.8	7.7	4	111	69.6	10.7	4	36	21.4	4.2
Diabetes mellitus (250)	5	57	17.4	3.0	-	22	13.8	2.1	5	35	20.8	4.0
Chronic liver disease and cirrhosis (571)	-	40	12.2	2.1	5	30	18.8	2.9	-	10	5.9	1.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
MARTINIQUE, 1985 (cont.)												
All other causes		511	155.8	26.9		287	179.9	27.7		224	133.0	25.8
MEXICO, 1986												
All causes		400079	492.7	100.0		224138	551.2	100.0		172423	425.3	100.0
Symptoms and ill-defined conditions (780-799)		17466	21.5	4.4		7004	17.2	3.1		6944	17.1	4.0
Total number of deaths from defined causes**		382613	471.2	100.0		217134	534.0	100.0		165479	408.2	100.0
Diseases of the heart (390-429)	1	50739	62.5	13.3	2	25144	61.8	11.6	1	25595	63.1	15.5
Accidents (E800-E949, E980-E989)	2	45011	55.4	11.8	1	35287	86.8	16.3	-	9724	24.0	5.9
Malignant neoplasms (140-208)	3	35930	44.2	9.4	3	16473	40.5	7.6	2	19457	48.0	11.8
Intestinal infections due to specified organisms and ill defined (007-009).	4	26123	32.2	6.8	5	13480	33.2	6.2	4	12643	31.2	7.6
Diabetes mellitus (250)	5	23132	28.5	6.0	-	9923	24.4	4.6	3	13209	32.6	8.0
Influenza and pneumonia (480-487)	-	21294	26.2	5.6	-	11336	27.9	5.2	5	9958	24.6	6.0
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	15805	19.5	4.1	4	14432	35.5	6.6	-	1373	3.4	0.8
All other causes		164579	202.7	43.0		91059	223.9	41.9		73520	181.3	44.4
NETHERLANDS ANTILLES (CURACAO), 1981												
All causes		893	544.5	100.0		444	541.5	100.0		449	547.6	100.0
Symptoms and ill-defined conditions (780-799)		88	53.7	9.9		29	35.4	6.5		59	72.0	13.1
Total number of deaths from defined causes**		805	490.9	100.0		415	506.1	100.0		390	475.6	100.0
Malignant neoplasms (140-208)	1	186	113.4	23.1	1	97	118.3	23.4	1	89	108.5	22.8
Diseases of the heart (390-429)	2	172	104.9	21.4	2	86	104.9	20.7	2	86	104.9	22.1
Cerebrovascular disease (430-438)	3	93	56.7	11.6	4	36	43.9	8.7	3	57	69.5	14.6
Certain conditions originating in the perinatal period (760-779)	4	69	42.1	8.6	3	37	45.1	8.9	4	32	39.0	8.2
Accidents (E800-E949, E980-E989)	5	36	22.0	4.5	5	30	36.6	7.2	-	6	7.3	1.5
Influenza and pneumonia (480-487)	-	24	14.6	3.0	-	10	12.2	2.4	5	14	17.1	3.6
All other causes		225	137.2	28.0		119	145.1	28.7		106	129.3	27.2
PANAMA, 1987												
All causes		9105	400.4	100.0		5250	453.0	100.0		3855	345.7	100.0
Symptoms and ill-defined conditions (780-799)		751	33.0	8.2		408	35.2	7.8		343	30.8	8.9
Total number of deaths from defined causes**		8354	367.4	100.0		4842	417.8	100.0		3512	314.9	100.0
Diseases of the heart (390-429)	1	1562	68.7	18.7	1	842	72.7	17.4	1	720	64.6	20.5
Malignant neoplasms (140-208)	2	1236	54.4	14.8	3	668	57.6	13.8	2	568	50.9	16.2
Accidents (E800-E949, E980-E989)	3	901	39.6	10.8	2	708	61.1	14.6	5	193	17.3	5.5
Cerebrovascular disease (430-438)	4	874	38.4	10.5	4	446	38.5	9.2	3	428	38.4	12.2
Certain conditions originating in the perinatal period (760-779)	5	523	23.0	6.3	5	300	25.9	6.2	4	223	20.0	6.3
All other causes		3258	143.3	39.0		1878	162.1	38.8		1380	123.8	39.3
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		12695	558.5	100.0		6667	587.0	100.0		6028	530.0	100.0
Symptoms and ill-defined conditions (780-799)		2193	96.5	17.3		1073	94.5	16.1		1120	98.5	18.6
Total number of deaths from defined causes**		10502	462.0	100.0		5594	492.6	100.0		4908	431.5	100.0
Diseases of the heart (390-429)	1	2152	94.7	20.5	1	1117	98.4	20.0	1	1035	91.0	21.1
Cerebrovascular disease (430-438)	2	1330	58.5	12.7	2	688	60.6	12.3	2	642	56.4	13.1
Malignant neoplasms (140-208)	3	1097	48.3	10.4	3	518	45.6	9.3	3	579	50.9	11.8
Intestinal infections due to specified organisms and ill defined (007-009).	4	773	34.0	7.4	5	409	36.0	7.3	4	364	32.0	7.4
Accidents (E800-E949, E980-E989)	5	705	31.0	6.7	4	491	43.2	8.8	-	214	18.8	4.4
Influenza and pneumonia (480-487)	-	634	27.9	6.0	-	315	27.7	5.6	5	319	28.0	6.5
All other causes		3811	167.7	36.3		2056	181.0	36.8		1755	154.3	35.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PERU, 1983												
All causes		93290	498.7	100.0		48676	516.6	100.0		44614	480.6	100.0
Symptoms and ill-defined conditions (780-799)		6542	35.0	7.0		3220	34.2	6.6		3322	35.8	7.4
Total number of deaths from defined causes**		86748	463.8	100.0		45456	482.4	100.0		41292	444.8	100.0
Influenza and pneumonia (480-487)	1	15125	80.9	17.4	1	7672	81.4	16.9	1	7453	80.3	18.0
Intestinal infections due to specified organisms and ill defined (007-009).	2	9131	48.8	10.5	2	4534	48.1	10.0	2	4597	49.5	11.1
Diseases of the heart (390-429)	3	6695	35.8	7.7	5	3239	34.4	7.1	3	3456	37.2	8.4
Certain conditions originating in the perinatal period (760-779)	4	6275	33.5	7.2	4	3499	37.1	7.7	5	2776	29.9	6.7
Malignant neoplasms (140-208)	5	5663	30.3	6.5	-	2626	27.9	5.8	4	3037	32.7	7.4
Accidents (E800-E949, E980-E989)	-	5216	27.9	6.0	3	3921	41.6	8.6	-	1295	14.0	3.1
All other causes		38643	206.6	44.5		19965	211.9	43.9		18678	201.2	45.2
PUERTO RICO, 1987												
All causes		23950	673.9	100.0		14040	811.4	100.0		9910	543.4	100.0
Symptoms and ill-defined conditions (780-799)		177	5.0	0.7		86	5.0	0.6		91	5.0	0.9
Total number of deaths from defined causes**		23773	668.9	100.0		13954	806.4	100.0		9819	538.4	100.0
Diseases of the heart (390-429)	1	7125	200.5	30.0	1	3889	224.8	27.9	1	3236	177.4	33.0
Malignant neoplasms (140-208)	2	3693	103.9	15.5	2	2157	124.7	15.5	2	1536	84.2	15.6
Accidents (E800-E949, E980-E989)	3	1390	39.1	5.8	3	1074	62.1	7.7	-	316	17.3	3.2
Cerebrovascular disease (430-438)	4	1358	38.2	5.7	5	673	38.9	4.8	3	685	37.6	7.0
Influenza and pneumonia (480-487)	5	1297	36.5	5.5	4	747	43.2	5.4	5	550	30.2	5.6
Diabetes mellitus (250)	-	1108	31.2	4.7	-	487	28.1	3.5	4	621	34.1	6.3
All other causes		7802	219.5	32.8		4927	284.7	35.3		2875	157.6	29.3
ST. KITTS AND NEVIS, 1985												
All causes		441	957.2	100.0		210	935.0	100.0		231	978.4	100.0
Symptoms and ill-defined conditions (780-799)		45	97.7	10.2		13	57.9	6.2		32	135.5	13.9
Total number of deaths from defined causes**		396	859.6	100.0		197	877.1	100.0		199	842.9	100.0
Cerebrovascular disease (430-438)	1	97	210.5	24.5	2	36	160.3	18.3	1	61	258.4	30.7
Diseases of the heart (390-429)	2	93	201.9	23.5	1	51	227.1	25.9	2	42	177.9	21.1
Malignant neoplasms (140-208)	3	42	91.2	10.6	3	22	98.0	11.2	3	20	84.7	10.1
Influenza and pneumonia (480-487)	4	23	49.9	5.8	4	12	53.4	6.1	4	11	46.6	5.5
Certain conditions originating in the perinatal period (760-779)	5	17	36.9	4.3	5	10	44.5	5.1	5	7	29.6	3.5
Mental disorders (290-319)	-	11	23.9	2.8	5	10	44.5	5.1	-	1	4.2	0.5
All other causes		113	245.3	28.5		56	249.3	28.4		57	241.4	28.6
SAINT LUCIA, 1988												
All causes		885	665.3	100.0		458	711.0	100.0		427	622.4	100.0
Symptoms and ill-defined conditions (780-799)		93	69.9	10.5		37	57.4	8.1		56	81.6	13.1
Total number of deaths from defined causes**		792	595.4	100.0		421	653.5	100.0		371	540.8	100.0
Diseases of the heart (390-429)	1	212	159.4	26.8	1	113	175.4	26.8	1	99	144.3	26.7
Cerebrovascular disease (430-438)	2	120	90.2	15.2	2	55	85.4	13.1	2	65	94.8	17.5
Malignant neoplasms (140-208)	3	104	78.2	13.1	3	50	77.6	11.9	3	54	78.7	14.6
Diabetes mellitus (250)	4	39	29.3	4.9	5	16	24.8	3.8	4	23	33.5	6.2
Influenza and pneumonia (480-487)	5	37	27.8	4.7	5	16	24.8	3.8	5	21	30.6	5.7
Accidents (E800-E949, E980-E989)	5	37	27.8	4.7	4	28	43.5	6.7	-	9	13.1	2.4
Certain conditions originating in the perinatal period (760-779)	-	31	23.3	3.9	5	16	24.8	3.8	-	15	21.9	4.0
All other causes		212	159.4	26.8		127	197.1	30.2		85	123.9	22.9
ST. VINCENT & THE GRENADINES, 1986												
All causes		619	589.3	100.0		310	607.6	100.0		309	572.0	100.0
Symptoms and ill-defined conditions (780-799)		46	43.8	7.4		21	41.2	6.8		25	46.3	8.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ST. VINCENT & THE GRENADINES, 1986 (cont.)												
Total number of deaths from defined causes**		573	545.5	100.0		289	566.4	100.0		284	525.7	100.0
Diseases of the heart (390-429)	1	166	158.0	29.0	1	72	141.1	24.9	1	94	174.0	33.1
Malignant neoplasms (140-208)	2	73	69.5	12.7	2	32	62.7	11.1	2	41	75.9	14.4
Cerebrovascular disease (430-438)	3	62	59.0	10.8	3	28	54.9	9.7	3	34	62.9	12.0
Diabetes mellitus (250)	4	41	39.0	7.2	-	10	19.6	3.5	4	31	57.4	10.9
Certain conditions originating in the perinatal period (760-779)	5	35	33.3	6.1	5	18	35.3	6.2	5	17	31.5	6.0
Accidents (E800-E949, E980-E989)	-	31	29.5	5.4	4	21	41.2	7.3	-	10	18.5	3.5
All other causes		165	157.1	28.8		108	211.7	37.4		57	105.5	20.1
SURINAME, 1985												
All causes		2275	606.7	100.0		1265	683.8	100.0		1010	531.6	100.0
Symptoms and ill-defined conditions (780-799)		369	98.4	16.2		171	92.4	13.5		198	104.2	19.6
Total number of deaths from defined causes**		1906	508.3	100.0		1094	591.4	100.0		812	427.4	100.0
Diseases of the heart (390-429)	1	408	108.8	21.4	1	230	124.3	21.0	1	178	93.7	21.9
Malignant neoplasms (140-208)	2	189	50.4	9.9	4	86	46.5	7.9	2	103	54.2	12.7
Accidents (E800-E949, E980-E989)	3	163	43.5	8.6	2	120	64.9	11.0	-	43	22.6	5.3
Cerebrovascular disease (430-438)	4	154	41.1	8.1	5	76	41.1	6.9	3	78	41.1	9.6
Certain conditions originating in the perinatal period (760-779)	5	135	36.0	7.1	3	90	48.6	8.2	5	45	23.7	5.5
Diabetes mellitus (250)	-	86	22.9	4.5	-	35	18.9	3.2	4	51	26.8	6.3
All other causes		771	205.6	40.5		457	247.0	41.8		314	165.3	38.7
TRINIDAD AND TOBAGO, 1986												
All causes		7699	639.5	100.0		4169	694.3	100.0		3530	584.9	100.0
Symptoms and ill-defined conditions (780-799)		191	15.9	2.5		89	14.8	2.1		102	16.9	2.9
Total number of deaths from defined causes**		7508	623.6	100.0		4080	679.4	100.0		3428	568.0	100.0
Diseases of the heart (390-429)	1	1993	165.5	26.5	1	1098	182.8	26.9	1	895	148.3	26.1
Malignant neoplasms (140-208)	2	1003	83.3	13.4	2	509	84.8	12.5	2	494	81.9	14.4
Cerebrovascular disease (430-438)	3	930	77.2	12.4	3	455	75.8	11.2	3	475	78.7	13.9
Diabetes mellitus (250)	4	831	69.0	11.1	5	362	60.3	8.9	4	469	77.7	13.7
Accidents (E800-E949, E980-E989)	5	486	40.4	6.5	4	373	62.1	9.1	-	113	18.7	3.3
Influenza and pneumonia (480-487)	-	253	21.0	3.4	-	137	22.8	3.4	5	116	19.2	3.4
All other causes		2012	167.1	26.8		1146	190.8	28.1		866	143.5	25.3
UNITED STATES, 1987												
All causes		2123323	872.3	100.0		1107958	934.7	100.0		1015365	813.1	100.0
Symptoms and ill-defined conditions (780-799)		31261	12.8	1.5		17440	14.7	1.6		13821	11.1	1.4
Total number of deaths from defined causes**		2092062	859.5	100.0		1090518	920.0	100.0		1001544	802.1	100.0
Diseases of the heart (390-429)	1	768492	315.7	36.7	1	388747	328.0	35.6	1	379745	304.1	37.9
Malignant neoplasms (140-208)	2	476927	195.9	22.8	2	254653	214.8	23.4	2	222274	178.0	22.2
Cerebrovascular disease (430-438)	3	149835	61.6	7.2	4	59061	49.8	5.4	3	90774	72.7	9.1
Accidents (E800-E949, E980-E989)	4	98031	40.3	4.7	3	67002	56.5	6.1	5	31029	24.8	3.1
Influenza and pneumonia (480-487)	5	69225	28.4	3.3	5	33562	28.3	3.1	4	35663	28.6	3.6
All other causes		529552	217.6	25.3		287493	242.5	26.4		242059	193.8	24.2
URUGUAY, 1987												
All causes		29882	977.2	100.0		16210	1078.1	100.0		13668	879.3	100.0
Symptoms and ill-defined conditions (780-799)		1866	61.0	6.2		1057	70.3	6.5		809	52.0	5.9
Total number of deaths from defined causes**		28016	916.1	100.0		15153	1007.8	100.0		12859	827.3	100.0
Diseases of the heart (390-429)	1	7294	238.5	26.0	1	3925	261.0	25.9	1	3369	216.7	26.2
Malignant neoplasms (140-208)	2	6677	218.3	23.8	2	3910	260.0	25.8	2	2767	178.0	21.5
Cerebrovascular disease (430-438)	3	3689	120.6	13.2	3	1548	103.0	10.2	3	2141	137.7	16.6
Accidents (E800-E949, E980-E989)	4	1477	48.3	5.3	4	1008	67.0	6.7	4	469	30.2	3.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10a (*Cont.*).

Five leading causes of death in the general population, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, all ages				Male, all ages				Female, all ages			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
URUGUAY, 1987 (cont.)												
Influenza and pneumonia (480-487)	5	681	22.3	2.4	-	323	21.5	2.1	-	358	23.0	2.8
Diabetes mellitus (250)	-	663	21.7	2.4	-	260	17.3	1.7	5	403	25.9	3.1
Certain conditions originating in the perinatal period (760-779).....	-	604	19.8	2.2	5	346	23.0	2.3	-	256	16.5	2.0
All other causes		6931	226.6	24.7		3833	254.9	25.3		3096	199.2	24.1
VENEZUELA, 1987												
All causes		80991	443.3	100.0		45816	496.4	100.0		35175	389.1	100.0
Symptoms and ill-defined conditions (780-799)		10705	58.6	13.2		5836	63.2	12.7		4869	53.9	13.8
Total number of deaths from defined causes**		70286	384.7	100.0		39980	433.2	100.0		30306	335.2	100.0
Diseases of the heart (390-429)	1	14002	76.6	19.9	1	7631	82.7	19.1	1	6371	70.5	21.0
Malignant neoplasms (140-208)	2	9431	51.6	13.4	3	4569	49.5	11.4	2	4862	53.8	16.0
Accidents (E800-E949, E980-E989)	3	8712	47.7	12.4	2	6763	73.3	16.9	5	1949	21.6	6.4
Certain conditions originating in the perinatal period (760-779).....	4	5803	31.8	8.3	4	3354	36.3	8.4	4	2449	27.1	8.1
Cerebrovascular disease (430-438)	5	5182	28.4	7.4	5	2470	26.8	6.2	3	2712	30.0	8.9
All other causes		27156	148.6	38.6		15193	164.6	38.0		11963	132.3	39.5
VIRGIN ISLANDS (US), 1980												
All causes		540	551.0	100.0		304	628.9	100.0		236	475.1	100.0
Symptoms and ill-defined conditions (780-799)		4	4.1	0.7		2	4.1	0.7		2	4.0	0.8
Total number of deaths from defined causes**		536	546.9	100.0		302	624.7	100.0		234	471.1	100.0
Diseases of the heart (390-429)	1	42	42.9	7.8	3	17	35.2	5.6	1	25	50.3	10.7
Accidents (E800-E949, E980-E989)	2	29	29.6	5.4	1	25	51.7	8.3	4	4	8.1	1.7
Cerebrovascular disease (430-438)	3	26	26.5	4.9	4	10	20.7	3.3	2	16	32.2	6.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	24	24.5	4.5	2	22	45.5	7.3	-	2	4.0	0.9
Malignant neoplasms (140-208)	5	12	12.2	2.2	5	9	18.6	3.0	5	3	6.0	1.3
Congenital anomalies (740-759)	-	11	11.2	2.1	-	4	8.3	1.3	3	7	14.1	3.0
Complications of pregnancy, childbirth and puerperium (630-676)	-	7	7.1	1.3	-	-	-	-	3	7	14.1	3.0
All other causes		385	392.8	71.8		215	444.8	71.2		170	342.3	72.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b.

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		18163	2689.3	100.0		10195	2959.8	100.0		7859	2374.8	100.0
Symptoms and ill-defined conditions (780-799)		932	138.0	5.1		544	157.9	5.3		383	115.7	4.9
Total number of deaths from defined causes**		17231	2551.3	100.0		9651	2801.9	100.0		7476	2259.0	100.0
Certain conditions originating in the perinatal period (760-779)	1	9631	1426.0	55.9	1	5470	1588.0	56.7	1	4089	1235.6	54.7
Congenital anomalies (740-759)	2	2423	358.8	14.1	2	1318	382.6	13.7	2	1093	330.3	14.6
Influenza and pneumonia (480-487)	3	811	120.1	4.7	3	454	131.8	4.7	3	355	107.3	4.7
Intestinal infections due to specified organisms and ill defined (007-009)	4	645	95.5	3.7	4	358	103.9	3.7	4	286	86.4	3.8
Diseases of the heart (390-429)	5	604	89.4	3.5	5	321	93.2	3.3	5	278	84.0	3.7
All other causes		3117	461.5	18.1		1730	502.3	17.9		1375	415.5	18.4
BAHAMAS, 1987												
All causes		127	2932.3	100.0		64	2964.3	100.0		61	2808.5	100.0
Symptoms and ill-defined conditions (780-799)		3	69.3	2.4		2	92.6	3.1		1	46.0	1.6
Total number of deaths from defined causes**		124	2863.1	100.0		62	2871.7	100.0		60	2762.4	100.0
Congenital anomalies (740-759)	1	14	323.3	11.3	1	6	277.9	9.7	1	8	368.3	13.3
Influenza and pneumonia (480-487)	2	10	230.9	8.1	1	6	277.9	9.7	2	4	184.2	6.7
Accidents (E800-E949, E980-E989)	3	7	161.6	5.6	2	4	185.3	6.5	3	3	138.1	5.0
Meningitis (320-322)	4	3	69.3	2.4	3	3	139.0	4.8	-	-	-	-
Intestinal infections due to specified organisms and ill defined (007-009)	5	2	46.2	1.6	-	-	-	-	4	2	92.1	3.3
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	-	1	23.1	0.8	-	-	-	-	5	1	46.0	1.7
Hernia of abdominal cavity and intestinal obstruction (550-553,560)	-	1	23.1	0.8	-	-	-	-	5	1	46.0	1.7
Syphilis (090-097)	-	1	23.1	0.8	4	1	46.3	1.6	-	-	-	-
Malignant neoplasms (140-208)	-	1	23.1	0.8	-	-	-	-	5	1	46.0	1.7
Diseases of the heart (390-429)	-	1	23.1	0.8	-	-	-	-	5	1	46.0	1.7
Bronchitis, emphysema and asthma (490-493)	-	1	23.1	0.8	4	1	46.3	1.6	-	-	-	-
All other causes		82	1893.3	66.1		41	1899.0	66.1		39	1795.6	65.0
BELIZE, 1986												
All causes		152	2477.2	100.0		94	3004.2	100.0		58	1928.8	100.0
Symptoms and ill-defined conditions (780-799)		16	260.8	10.5		9	287.6	9.6		7	232.8	12.1
Total number of deaths from defined causes**		136	2216.4	100.0		85	2716.5	100.0		51	1696.0	100.0
Certain conditions originating in the perinatal period (760-779)	1	51	831.2	37.5	1	33	1054.7	38.8	1	18	598.6	35.3
Influenza and pneumonia (480-487)	2	26	423.7	19.1	2	15	479.4	17.6	2	11	365.8	21.6
Intestinal infections due to specified organisms and ill defined (007-009)	3	18	293.4	13.2	3	14	447.4	16.5	3	4	133.0	7.8
Nutritional deficiencies (260-269)	4	7	114.1	5.1	4	4	127.8	4.7	4	3	99.8	5.9
Congenital anomalies (740-759)	5	5	81.5	3.7	5	3	95.9	3.5	5	2	66.5	3.9
All other causes		29	472.6	21.3		16	511.3	18.8		13	432.3	25.5
BRAZIL (AREA OF INFORMATION), 1986												
All causes		132211	2478.5	100.0		74774	2802.2	100.0		57025	2139.1	100.0
Symptoms and ill-defined conditions (780-799)		31104	583.1	23.5		17083	640.2	22.8		13992	524.9	24.5
Total number of deaths from defined causes**		101107	1895.4	100.0		57691	2162.0	100.0		43033	1614.2	100.0
Certain conditions originating in the perinatal period (760-779)	1	45824	859.1	45.3	1	26587	996.4	46.1	1	18958	711.1	44.1
Intestinal infections due to specified organisms and ill defined (007-009)	2	17974	337.0	17.8	2	10193	382.0	17.7	2	7759	291.0	18.0
Influenza and pneumonia (480-487)	3	12214	229.0	12.1	3	6870	257.5	11.9	3	5319	199.5	12.4
Congenital anomalies (740-759)	4	7003	131.3	6.9	4	3799	142.4	6.6	4	3170	118.9	7.4
Nutritional deficiencies (260-269)	5	5196	97.4	5.1	5	2965	111.1	5.1	5	2222	83.3	5.2
All other causes		12896	241.8	12.8		7277	272.7	12.6		5605	210.2	13.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b (*Cont.*).

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
CANADA, 1988												
All causes		2705	719.9	100.0		1547	807.3	100.0		1158	629.0	100.0
Symptoms and ill-defined conditions (780-799)		458	121.9	16.9		285	148.7	18.4		173	94.0	14.9
Total number of deaths from defined causes**		2247	598.0	100.0		1262	658.6	100.0		985	535.0	100.0
Certain conditions originating in the perinatal period (760-779)	1	1052	280.0	46.8	1	607	316.8	48.1	1	445	241.7	45.2
Congenital anomalies (740-759)	2	882	234.7	39.3	2	483	252.0	38.3	2	399	216.7	40.5
Accidents (E800-E949, E980-E989)	3	57	15.2	2.5	3	25	13.0	2.0	3	32	17.4	3.2
Influenza and pneumonia (480-487)	4	31	8.3	1.4	5	14	7.3	1.1	4	17	9.2	1.7
Diseases of the heart (390-429)	5	25	6.7	1.1	4	17	8.9	1.3	5	8	4.3	0.8
All other causes		200	53.2	8.9		116	60.5	9.2		84	45.6	8.5
CHILE, 1987												
All causes		5182	1949.8	100.0		2907	2134.0	100.0		2275	1756.1	100.0
Symptoms and ill-defined conditions (780-799)		217	81.6	4.2		135	99.1	4.6		82	63.3	3.6
Total number of deaths from defined causes**		4965	1868.1	100.0		2772	2034.9	100.0		2193	1692.8	100.0
Certain conditions originating in the perinatal period (760-779)	1	1779	669.4	35.8	1	1014	744.4	36.6	1	765	590.5	34.9
Congenital anomalies (740-759)	2	1035	389.4	20.8	2	539	395.7	19.4	2	496	382.9	22.6
Influenza and pneumonia (480-487)	3	839	315.7	16.9	3	483	354.6	17.4	3	356	274.8	16.2
Accidents (E800-E949, E980-E989)	4	688	258.9	13.9	4	375	275.3	13.5	4	313	241.6	14.3
Intestinal infections due to specified organisms and ill defined (007-009)	5	134	50.4	2.7	5	77	56.5	2.8	5	57	44.0	2.6
All other causes		490	184.4	9.9		284	208.5	10.2		206	159.0	9.4
COLOMBIA, 1984												
All causes		13201	1598.5	100.0		7633	1812.3	100.0		5568	1376.0	100.0
Symptoms and ill-defined conditions (780-799)		382	46.3	2.9		232	55.1	3.0		150	37.1	2.7
Total number of deaths from defined causes**		12819	1552.2	100.0		7401	1757.2	100.0		5418	1338.9	100.0
Certain conditions originating in the perinatal period (760-779)	1	6207	751.6	48.4	1	3643	865.0	49.2	1	2564	633.6	47.3
Intestinal infections due to specified organisms and ill defined (007-009)	2	1295	156.8	10.1	2	734	174.3	9.9	2	561	138.6	10.4
Influenza and pneumonia (480-487)	3	1238	149.9	9.7	3	694	164.8	9.4	3	544	134.4	10.0
Congenital anomalies (740-759)	4	1104	133.7	8.6	4	643	152.7	8.7	4	461	113.9	8.5
Accidents (E800-E949, E980-E989)	5	434	52.6	3.4	-	229	54.4	3.1	5	205	50.7	3.8
Nutritional deficiencies (260-269)	-	421	51.0	3.3	5	245	58.2	3.3	-	176	43.5	3.2
All other causes		2120	256.7	16.5		1213	288.0	16.4		907	224.1	16.7
COSTA RICA, 1988												
All causes		1194	1467.3	100.0		711	1693.9	100.0		483	1225.8	100.0
Symptoms and ill-defined conditions (780-799)		37	45.5	3.1		17	40.5	2.4		20	50.8	4.1
Total number of deaths from defined causes**		1157	1421.8	100.0		694	1653.4	100.0		463	1175.1	100.0
Certain conditions originating in the perinatal period (760-779)	1	539	662.4	46.6	1	341	812.4	49.1	1	198	502.5	42.8
Congenital anomalies (740-759)	2	319	392.0	27.6	2	183	436.0	26.4	2	136	345.2	29.4
Influenza and pneumonia (480-487)	3	118	145.0	10.2	3	66	157.2	9.5	3	52	132.0	11.2
Intestinal infections due to specified organisms and ill defined (007-009)	4	51	62.7	4.4	4	29	69.1	4.2	4	22	55.8	4.8
Nutritional deficiencies (260-269)	5	19	23.3	1.6	5	14	33.4	2.0	-	5	12.7	1.1
Accidents (E800-E949, E980-E989)	-	16	19.7	1.4	-	8	19.1	1.2	5	8	20.3	1.7
All other causes		95	116.7	8.2		53	126.3	7.6		42	106.8	9.1
CUBA, 1988												
All causes		2235	1189.4	100.0		1286	1332.6	100.0		949	1038.2	100.0
Symptoms and ill-defined conditions (780-799)		13	6.9	0.6		8	8.3	0.6		5	5.5	0.5
Total number of deaths from defined causes**		2222	1182.5	100.0		1278	1324.3	100.0		944	1032.8	100.0

* Equivalent to A-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b (*Cont.*).

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
CUBA, 1988 (cont.)												
Certain conditions originating in the perinatal period (760-779).....	1	967	514.6	43.5	1	579	600.0	45.3	1	388	424.5	41.1
Congenital anomalies (740-759)	2	571	303.9	25.7	2	316	327.5	24.7	2	255	279.0	27.0
Influenza and pneumonia (480-487)	3	183	97.4	8.2	3	113	117.1	8.8	3	70	76.6	7.4
Intestinal infections due to specified organisms and ill defined (007-009).	4	89	47.4	4.0	4	51	52.8	4.0	4	38	41.6	4.0
All accidents and violence (E800-E999)	5	83	44.2	3.7	5	46	47.7	3.6	5	37	40.5	3.9
All other causes		329	175.1	14.8		173	179.3	13.5		156	170.7	16.5
DOMINICAN REPUBLIC, 1985												
All causes		6411	5663.4	100.0		3443	5938.2	100.0		2966	5374.9	100.0
Symptoms and ill-defined conditions (780-799)		379	334.8	5.9		219	377.7	6.4		160	289.8	5.4
Total number of deaths from defined causes**		6032	5328.6	100.0		3224	5560.4	100.0		2808	5085.1	100.0
Certain conditions originating in the perinatal period (760-779).....	1	2735	2416.1	45.3	1	1514	2611.2	47.0	1	1221	2211.2	43.5
Intestinal infections due to specified organisms and ill defined (007-009).	2	1080	954.1	17.9	2	562	969.3	17.4	2	518	938.1	18.4
Influenza and pneumonia (480-487)	3	425	375.4	7.0	3	205	353.6	6.4	3	220	398.4	7.8
Congenital anomalies (740-759)	4	354	312.7	5.9	4	186	320.8	5.8	4	168	304.2	6.0
Meningitis (320-322)	5	171	151.1	2.8	5	90	155.2	2.8	-	81	146.7	2.9
Nutritional deficiencies (260-269) ...	-	170	150.2	2.8	-	86	148.3	2.7	5	84	152.1	3.0
All other causes		1097	969.1	18.2		581	1002.1	18.0		516	934.4	18.4
ECUADOR, 1987												
All causes		9761	4773.7	100.0		5416	5214.5	100.0		4345	4318.6	100.0
Symptoms and ill-defined conditions (780-799)		1005	491.5	10.3		530	510.3	9.8		475	472.1	10.9
Total number of deaths from defined causes**		8756	4282.2	100.0		4886	4704.2	100.0		3870	3846.5	100.0
Certain conditions originating in the perinatal period (760-779).....	1	2944	1439.8	33.6	1	1722	1657.9	35.2	1	1222	1214.6	31.6
Intestinal infections due to specified organisms and ill defined (007-009).	2	1744	852.9	19.9	2	949	913.7	19.4	2	795	790.2	20.5
Influenza and pneumonia (480-487)	3	902	441.1	10.3	3	520	500.7	10.6	3	382	379.7	9.9
Bronchitis, emphysema and asthma (490-493)	4	769	376.1	8.8	4	410	394.7	8.4	4	359	356.8	9.3
Congenital anomalies (740-759)	5	533	260.7	6.1	5	276	265.7	5.6	5	257	255.4	6.6
All other causes		1864	911.6	21.3		1009	971.5	20.7		855	849.8	22.1
EL SALVADOR, 1984												
All causes		4994	3439.3	100.0		2778	3677.7	100.0		2216	3180.9	100.0
Symptoms and ill-defined conditions (780-799)		32	22.0	0.6		15	19.9	0.5		17	24.4	0.8
Total number of deaths from defined causes**		4962	3417.3	100.0		2763	3657.8	100.0		2199	3156.5	100.0
Certain conditions originating in the perinatal period (760-779).....	1	2898	1995.8	58.4	1	1640	2171.1	59.4	1	1258	1805.8	57.2
Intestinal infections due to specified organisms and ill defined (007-009).	2	841	579.2	16.9	2	465	615.6	16.8	2	376	539.7	17.1
Bronchitis, emphysema and asthma (490-493)	3	333	229.3	6.7	3	190	251.5	6.9	3	143	205.3	6.5
Influenza and pneumonia (480-487)	4	203	139.8	4.1	4	111	146.9	4.0	4	92	132.1	4.2
Congenital anomalies (740-759)	5	141	97.1	2.8	5	68	90.0	2.5	5	73	104.8	3.3
All other causes		546	376.0	11.0		289	382.6	10.5		257	368.9	11.7
GUADELOUPE, 1981												
All causes		140	2158.5	100.0		80	2454.0	100.0		60	1859.9	100.0
Symptoms and ill-defined conditions (780-799)		15	231.3	10.7		6	184.0	7.5		9	279.0	15.0
Total number of deaths from defined causes**		125	1927.2	100.0		74	2269.9	100.0		51	1580.9	100.0
Certain conditions originating in the perinatal period (760-779).....	1	67	1033.0	53.6	1	40	1227.0	54.1	1	27	836.9	52.9
Congenital anomalies (740-759)	2	24	370.0	19.2	2	15	460.1	20.3	2	9	279.0	17.6
Intestinal infections due to specified organisms and ill defined (007-009).	3	11	169.6	8.8	3	7	214.7	9.5	3	4	124.0	7.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b (*Cont.*).

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
GUADELOUPE, 1981 (cont.)												
Accidents (E800-E949, E980-E989)	4	4	61.7	3.2	5	2	61.3	2.7	4	2	62.0	3.9
Meningitis (320-322)	5	3	46.3	2.4	4	3	92.0	4.1	-	-	-	-
Cerebrovascular disease (430-438)	-	2	30.8	1.6	5	2	61.3	2.7	-	-	-	-
Diseases of the heart (390-429)	-	2	30.8	1.6	-	1	30.7	1.4	5	1	31.0	2.0
Syphilis (090-097)	-	2	30.8	1.6	-	1	30.7	1.4	5	1	31.0	2.0
Meningococcal infection (036)	-	1	15.4	0.8	-	-	-	-	5	1	31.0	2.0
All other causes		9	138.8	7.2		3	92.0	4.1		6	186.0	11.8
GUATEMALA, 1984												
All causes		20444	6550.6	100.0		11036	6963.0	100.0		9408	6125.0	100.0
Symptoms and ill-defined conditions (780-799)		1248	399.9	6.1		636	401.3	5.8		612	398.4	6.5
Total number of deaths from defined causes**		19196	6150.7	100.0		10400	6561.8	100.0		8796	5726.6	100.0
Certain conditions originating in the perinatal period (760-779).....	1	9684	3102.9	50.4	1	5544	3497.9	53.3	1	4140	2695.3	47.1
Influenza and pneumonia (480-487)	2	3144	1007.4	16.4	2	1692	1067.5	16.3	2	1452	945.3	16.5
Intestinal infections due to specified organisms and ill defined (007-009).	3	2480	794.6	12.9	3	1212	764.7	11.7	3	1268	825.5	14.4
Whooping cough (033)	4	616	197.4	3.2	4	292	184.2	2.8	4	324	210.9	3.7
Congenital anomalies (740-759)	5	560	179.4	2.9	5	264	166.6	2.5	5	296	192.7	3.4
All other causes		2712	869.0	14.1		1396	880.8	13.4		1316	856.8	15.0
GUYANA, 1984												
All causes		549	3618.7	100.0		305	3915.8	100.0		244	3305.3	100.0
Symptoms and ill-defined conditions (780-799)		29	191.2	5.3		11	141.2	3.6		18	243.8	7.4
Total number of deaths from defined causes**		520	3427.6	100.0		294	3774.6	100.0		226	3061.5	100.0
Nutritional deficiencies (260-269) ...	1	153	1008.5	29.4	1	90	1155.5	30.6	1	63	853.4	27.9
Certain conditions originating in the perinatal period (760-779).....	2	93	613.0	17.9	2	51	654.8	17.3	2	42	569.0	18.6
Influenza and pneumonia (480-487)	3	41	270.3	7.9	3	21	269.6	7.1	3	20	270.9	8.8
Anemias (280-285)	4	22	145.0	4.2	4	15	192.6	5.1	4	7	94.8	3.1
Congenital anomalies (740-759)	5	10	65.9	1.9	5	5	64.2	1.7	5	5	67.7	2.2
All other causes		201	1324.9	38.7		112	1437.9	38.1		89	1205.6	39.4
HONDURAS, 1981												
All causes		3697	2296.0	100.0		2084	2531.2	100.0		1613	2049.9	100.0
Symptoms and ill-defined conditions (780-799)		1167	724.8	31.6		678	823.5	32.5		489	621.4	30.3
Total number of deaths from defined causes**		2530	1571.2	100.0		1406	1707.7	100.0		1124	1428.4	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	872	541.5	34.5	1	493	598.8	35.1	1	379	481.6	33.7
Certain conditions originating in the perinatal period (760-779).....	2	598	371.4	23.6	2	348	422.7	24.8	2	250	317.7	22.2
Influenza and pneumonia (480-487)	3	222	137.9	8.8	3	115	139.7	8.2	3	107	136.0	9.5
Bronchitis, emphysema and asthma (490-493)	4	188	116.8	7.4	4	106	128.7	7.5	4	82	104.2	7.3
Whooping cough (033)	5	117	72.7	4.6	5	64	77.7	4.6	5	53	67.4	4.7
All other causes		533	331.0	21.1		280	340.1	19.9		253	321.5	22.5
JAMAICA, 1984												
All causes		889	1653.9	100.0		528	1926.0	100.0		361	1370.6	100.0
Symptoms and ill-defined conditions (780-799)		70	130.2	7.9		44	160.5	8.3		26	98.7	7.2
Total number of deaths from defined causes**		819	1523.7	100.0		484	1765.5	100.0		335	1271.9	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	244	453.9	29.8	1	133	485.2	27.5	1	111	421.4	33.1
Certain conditions originating in the perinatal period (760-779).....	2	210	390.7	25.6	2	130	474.2	26.9	2	80	303.7	23.9
Nutritional deficiencies (260-269) ...	3	112	208.4	13.7	3	71	259.0	14.7	3	41	155.7	12.2
Congenital anomalies (740-759)	4	68	126.5	8.3	4	46	167.8	9.5	5	22	83.5	6.6
Influenza and pneumonia (480-487)	5	55	102.3	6.7	5	31	113.1	6.4	4	24	91.1	7.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b (*Cont.*).

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
JAMAICA, 1984 (cont.)												
All other causes		130	241.9	15.9		73	266.3	15.1		57	216.4	17.0
MEXICO, 1986												
All causes		60516	2356.8	100.0		32850	2508.5	100.0		26250	2086.3	100.0
Symptoms and ill-defined conditions (780-799)		3119	121.5	5.2		952	72.7	2.9		751	59.7	2.9
Total number of deaths from defined causes**		57397	2235.3	100.0		31898	2435.8	100.0		25499	2026.6	100.0
Certain conditions originating in the perinatal period (760-779)	1	16716	651.0	29.1	1	9755	744.9	30.6	1	6961	553.2	27.3
Intestinal infections due to specified organisms and ill defined (007-009)	2	12961	504.8	22.6	2	6945	530.3	21.8	2	6016	478.1	23.6
Influenza and pneumonia (480-487)	3	8949	348.5	15.6	3	4924	376.0	15.4	3	4025	319.9	15.8
Congenital anomalies (740-759)	4	5147	200.4	9.0	4	2682	204.8	8.4	4	2465	195.9	9.7
Nutritional deficiencies (260-269)	5	1242	48.4	2.2	-	641	48.9	2.0	5	601	47.8	2.4
Bronchitis, emphysema and asthma (490-493)	-	1181	46.0	2.1	5	667	50.9	2.1	-	514	40.9	2.0
All other causes		11201	436.2	19.5		6284	479.9	19.7		4917	390.8	19.3
PANAMA, 1987												
All causes		1121	1944.6	100.0		641	2170.5	100.0		480	1707.3	100.0
Symptoms and ill-defined conditions (780-799)		92	159.6	8.2		53	179.5	8.3		39	138.7	8.1
Total number of deaths from defined causes**		1029	1785.0	100.0		588	1991.1	100.0		441	1568.6	100.0
Certain conditions originating in the perinatal period (760-779)	1	523	907.2	50.8	1	300	1015.8	51.0	1	223	793.2	50.6
Congenital anomalies (740-759)	2	173	300.1	16.8	2	107	362.3	18.2	2	66	234.8	15.0
Intestinal infections due to specified organisms and ill defined (007-009)	3	66	114.5	6.4	3	36	121.9	6.1	3	30	106.7	6.8
Influenza and pneumonia (480-487)	4	58	100.6	5.6	4	28	94.8	4.8	3	30	106.7	6.8
Accidents (E800-E949, E980-E989)	5	37	64.2	3.6	5	19	64.3	3.2	4	18	64.0	4.1
Bronchitis, emphysema and asthma (490-493)	-	23	39.9	2.2	-	12	40.6	2.0	5	11	39.1	2.5
All other causes		149	258.5	14.5		86	291.2	14.6		63	224.1	14.3
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		2150	4007.4	100.0		1151	4108.2	100.0		999	3897.2	100.0
Symptoms and ill-defined conditions (780-799)		314	585.3	14.6		169	603.2	14.7		145	565.7	14.5
Total number of deaths from defined causes**		1836	3422.1	100.0		982	3505.0	100.0		854	3331.5	100.0
Certain conditions originating in the perinatal period (760-779)	1	530	987.9	28.9	1	308	1099.3	31.4	1	222	866.0	26.0
Intestinal infections due to specified organisms and ill defined (007-009)	2	391	728.8	21.3	2	207	738.8	21.1	2	184	717.8	21.5
Influenza and pneumonia (480-487)	3	249	464.1	13.6	3	124	442.6	12.6	3	125	487.6	14.6
Congenital anomalies (740-759)	4	124	231.1	6.8	4	69	246.3	7.0	4	55	214.6	6.4
Nutritional deficiencies (260-269)	5	68	126.7	3.7	5	38	135.6	3.9	-	30	117.0	3.5
Meningitis (320-322)	-	53	98.8	2.9	-	14	50.0	1.4	5	39	152.1	4.6
All other causes		421	784.7	22.9		222	792.4	22.6		199	776.3	23.3
PERU, 1983												
All causes		23282	3379.1	100.0		12468	3552.1	100.0		10814	3199.4	100.0
Symptoms and ill-defined conditions (780-799)		1123	163.0	4.8		621	176.9	5.0		502	148.5	4.6
Total number of deaths from defined causes**		22159	3216.1	100.0		11847	3375.2	100.0		10312	3050.9	100.0
Certain conditions originating in the perinatal period (760-779)	1	6275	910.7	28.3	1	3499	996.9	29.5	1	2776	821.3	26.9
Influenza and pneumonia (480-487)	2	4610	669.1	20.8	2	2454	699.1	20.7	2	2156	637.9	20.9
Intestinal infections due to specified organisms and ill defined (007-009)	3	4024	584.0	18.2	3	2064	588.0	17.4	3	1960	579.9	19.0
Bronchitis, emphysema and asthma (490-493)	4	1163	168.8	5.2	4	642	182.9	5.4	4	521	154.1	5.1
Nutritional deficiencies (260-269)	5	786	114.1	3.5	5	412	117.4	3.5	5	374	110.7	3.6
All other causes		5301	769.4	23.9		2776	790.9	23.4		2525	747.0	24.5

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b (*Cont.*).

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PUERTO RICO, 1987												
All causes		913	1417.9	100.0		516	1568.8	100.0		397	1260.3	100.0
Symptoms and ill-defined conditions (780-799)		14	21.7	1.5		10	30.4	1.9		4	12.7	1.0
Total number of deaths from defined causes**		899	1396.1	100.0		506	1538.4	100.0		393	1247.6	100.0
Certain conditions originating in the perinatal period (760-779)	1	515	799.8	57.3	1	303	921.2	59.9	1	212	673.0	53.9
Congenital anomalies (740-759)	2	169	262.5	18.8	2	92	279.7	18.2	2	77	244.4	19.6
Influenza and pneumonia (480-487)	3	60	93.2	6.7	3	37	112.5	7.3	3	23	73.0	5.9
Diseases of the heart (390-429)	4	17	26.4	1.9	4	9	27.4	1.8	5	8	25.4	2.0
Accidents (E800-E949, E980-E989)	5	16	24.8	1.8	5	7	21.3	1.4	4	9	28.6	2.3
All other causes		122	189.5	13.6		58	176.3	11.5		64	203.2	16.3
SURINAME, 1985												
All causes		313	2674.5	100.0		191	3303.4	100.0		122	2060.5	100.0
Symptoms and ill-defined conditions (780-799)		27	230.7	8.6		17	294.0	8.9		10	168.9	8.2
Total number of deaths from defined causes**		286	2443.8	100.0		174	3009.3	100.0		112	1891.6	100.0
Certain conditions originating in the perinatal period (760-779)	1	135	1153.6	47.2	1	90	1556.6	51.7	1	45	760.0	40.2
Intestinal infections due to specified organisms and ill defined (007-009)	2	43	367.4	15.0	3	25	432.4	14.4	2	18	304.0	16.1
Congenital anomalies (740-759)	3	40	341.8	14.0	2	26	449.7	14.9	3	14	236.4	12.5
Influenza and pneumonia (480-487)	4	14	119.6	4.9	4	9	155.7	5.2	4	5	84.4	4.5
Nutritional deficiencies (260-269)	5	8	68.4	2.8	5	4	69.2	2.3	5	4	67.6	3.6
Meningitis (320-322)	-	4	34.2	1.4	-	-	-	-	5	4	67.6	3.6
All other causes		42	358.9	14.7		20	345.9	11.5		22	371.6	19.6
TRINIDAD AND TOBAGO, 1986												
All causes		355	1113.3	100.0		185	1147.2	100.0		170	1078.7	100.0
Symptoms and ill-defined conditions (780-799)		12	37.6	3.4		7	43.4	3.8		5	31.7	2.9
Total number of deaths from defined causes**		343	1075.7	100.0		178	1103.8	100.0		165	1047.0	100.0
Certain conditions originating in the perinatal period (760-779)	1	202	633.5	58.9	1	115	713.1	64.6	1	87	552.0	52.7
Congenital anomalies (740-759)	2	55	172.5	16.0	2	23	142.6	12.9	2	32	203.0	19.4
Influenza and pneumonia (480-487)	3	29	90.9	8.5	3	15	93.0	8.4	3	14	88.8	8.5
Accidents (E800-E949, E980-E989)	4	13	40.8	3.8	5	4	24.8	2.2	4	9	57.1	5.5
Intestinal infections due to specified organisms and ill defined (007-009)	5	7	22.0	2.0	4	5	31.0	2.8	5	2	12.7	1.2
Anemias (280-285)	-	3	9.4	0.9	-	1	6.2	0.6	5	2	12.7	1.2
Meningitis (320-322)	-	2	6.3	0.6	-	-	-	-	5	2	12.7	1.2
All other causes		32	100.4	9.3		15	93.0	8.4		17	107.9	10.3
UNITED STATES, 1987												
All causes		38408	1003.1	100.0		21798	1111.0	100.0		16610	889.7	100.0
Symptoms and ill-defined conditions (780-799)		6137	160.3	16.0		3685	187.8	16.9		2452	131.3	14.8
Total number of deaths from defined causes**		32271	842.8	100.0		18113	923.2	100.0		14158	758.3	100.0
Certain conditions originating in the perinatal period (760-779)	1	18070	471.9	56.0	1	10348	527.4	57.1	1	7722	413.6	54.5
Congenital anomalies (740-759)	2	7884	205.9	24.4	2	4232	215.7	23.4	2	3652	195.6	25.8
Accidents (E800-E949, E980-E989)	3	1007	26.3	3.1	3	556	28.3	3.1	3	451	24.2	3.2
Diseases of the heart (390-429)	4	952	24.9	3.0	4	546	27.8	3.0	4	406	21.7	2.9
Influenza and pneumonia (480-487)	5	674	17.6	2.1	5	381	19.4	2.1	5	293	15.7	2.1
All other causes		3684	96.2	11.4		2050	104.5	11.3		1634	87.5	11.5
URUGUAY, 1987												
All causes		1280	2395.0	100.0		721	2645.3	100.0		556	2123.1	100.0
Symptoms and ill-defined conditions (780-799)		102	190.9	8.0		56	205.5	7.8		46	175.7	8.3
Total number of deaths from defined causes**		1178	2204.2	100.0		665	2439.8	100.0		510	1947.5	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10b (*Cont.*).

Five leading causes of death among children under 1 year, according to proportional mortality and rates per 100,000 live births, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, under one year				Male, under one year				Female, under one year			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
URUGUAY, 1987 (cont.)												
Certain conditions originating in the perinatal period (760-779).....	1	604	1130.2	51.3	1	346	1269.4	52.0	1	256	977.5	50.2
Congenital anomalies (740-759)	2	199	372.4	16.9	2	114	418.3	17.1	2	84	320.8	16.5
Nutritional deficiencies (260-269) ...	3	78	145.9	6.6	3	40	146.8	6.0	3	38	145.1	7.5
Accidents (E800-E949, E980-E989)	4	54	101.0	4.6	4	33	121.1	5.0	5	21	80.2	4.1
Influenza and pneumonia (480-487)	5	53	99.2	4.5	5	24	88.1	3.6	4	29	110.7	5.7
All other causes		190	355.5	16.1		108	396.2	16.2		82	313.1	16.1
VENEZUELA, 1987												
All causes		12823	2481.4	100.0		7245	2749.0	100.0		5578	2202.8	100.0
Symptoms and ill-defined conditions (780-799)		1266	245.0	9.9		706	267.9	9.7		560	221.2	10.0
Total number of deaths from defined causes**		11557	2236.4	100.0		6539	2481.1	100.0		5018	1981.7	100.0
Certain conditions originating in the perinatal period (760-779).....	1	5795	1121.4	50.1	1	3350	1271.1	51.2	1	2445	965.6	48.7
Intestinal infections due to specified organisms and ill defined (007-009).	2	1529	295.9	13.2	2	845	320.6	12.9	2	684	270.1	13.6
Congenital anomalies (740-759)	3	1353	261.8	11.7	3	736	279.3	11.3	3	617	243.7	12.3
Influenza and pneumonia (480-487)	4	794	153.6	6.9	4	459	174.2	7.0	4	335	132.3	6.7
Accidents (E800-E949, E980-E989)	5	404	78.2	3.5	5	220	83.5	3.4	5	184	72.7	3.7
All other causes		1682	325.5	14.6		929	352.5	14.2		753	297.4	15.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10c.

Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 1 - 4 years				Male, 1 - 4 years				Female, 1 - 4 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		2985	106.5	100.0		1637	115.1	100.0		1325	96.0	100.0
Symptoms and ill-defined conditions (780-799)		204	7.5	6.8		102	7.2	6.2		99	7.2	7.5
Total number of deaths from defined causes**		2781	99.2	100.0		1535	107.9	100.0		1226	88.8	100.0
Accidents (E800-E949, E980-E989)	1	666	23.8	23.9	1	408	28.7	26.6	1	254	18.4	20.7
Diseases of the heart (390-429)	2	321	11.5	11.5	2	180	12.7	11.7	2	138	10.0	11.3
Influenza and pneumonia (480-487)	3	212	7.6	7.6	3	118	8.3	7.7	4	93	6.7	7.6
Malignant neoplasms (140-208)	4	205	7.3	7.4	4	112	7.9	7.3	5	90	6.5	7.3
Congenital anomalies (740-759)	5	204	7.3	7.3	5	110	7.7	7.2	3	94	6.8	7.7
All other causes		1173	41.8	42.2		807	42.7	39.5		557	40.3	45.4
BRAZIL (AREA OF INFORMATION), 1986												
All causes		24616	163.3	100.0		13092	172.6	100.0		11506	153.5	100.0
Symptoms and ill-defined conditions (780-799)		8129	53.9	33.0		4199	55.4	32.1		3928	52.4	34.1
Total number of deaths from defined causes**		16487	109.3	100.0		8893	117.3	100.0		7578	101.1	100.0
Influenza and pneumonia (480-487)	1	3311	22.0	20.1	1	1719	22.7	19.3	1	1589	21.2	21.0
Accidents (E800-E949, E980-E989)	2	2812	18.7	17.1	2	1704	22.5	19.2	3	1105	14.7	14.6
Intestinal infections due to specified organisms and ill defined (007-009)	3	2391	15.9	14.5	3	1239	16.3	13.9	2	1150	15.3	15.2
Nutritional deficiencies (260-269)	4	1138	7.5	6.9	4	585	7.7	6.6	4	552	7.4	7.3
Malignant neoplasms (140-208)	5	721	4.8	4.4	5	386	5.1	4.3	-	333	4.4	4.4
Measles (055)	-	697	4.6	4.2	-	357	4.7	4.0	5	339	4.5	4.5
All other causes		5417	35.9	32.9		2903	38.3	32.6		2510	33.5	33.1
CANADA, 1988												
All causes		605	39.1	100.0		343	43.0	100.0		262	34.9	100.0
Symptoms and ill-defined conditions (780-799)		33	2.1	5.5		19	2.4	5.5		14	1.9	5.3
Total number of deaths from defined causes**		572	36.9	100.0		324	40.6	100.0		248	33.0	100.0
Accidents (E800-E949, E980-E989)	1	208	13.4	36.4	1	131	16.4	40.4	1	77	10.3	31.0
Congenital anomalies (740-759)	2	102	6.6	17.8	2	54	6.8	16.7	2	48	6.4	19.4
Malignant neoplasms (140-208)	3	66	4.3	11.5	3	35	4.4	10.8	3	31	4.1	12.5
Diseases of the heart (390-429)	4	18	1.2	3.1	5	8	1.0	2.5	4	10	1.3	4.0
Influenza and pneumonia (480-487)	5	17	1.1	3.0	4	10	1.3	3.1	5	7	0.9	2.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	11	0.7	1.9	-	4	0.5	1.2	5	7	0.9	2.8
All other causes		150	9.7	26.2		82	10.3	25.3		68	9.1	27.4
CHILE, 1987												
All causes		906	85.6	100.0		543	100.4	100.0		363	70.2	100.0
Symptoms and ill-defined conditions (780-799)		61	5.8	6.7		38	7.0	7.0		23	4.4	6.3
Total number of deaths from defined causes**		845	79.9	100.0		505	93.3	100.0		340	65.8	100.0
Accidents (E800-E949, E980-E989)	1	320	30.2	37.9	1	204	37.7	40.4	1	116	22.4	34.1
Influenza and pneumonia (480-487)	2	144	13.6	17.0	2	89	16.5	17.6	2	55	10.6	16.2
Congenital anomalies (740-759)	3	69	6.5	8.2	3	36	6.7	7.1	3	33	6.4	9.7
Malignant neoplasms (140-208)	4	49	4.6	5.8	4	31	5.7	6.1	4	18	3.5	5.3
Meningitis (320-322)	5	28	2.6	3.3	5	16	3.0	3.2	5	12	2.3	3.5
All other causes		235	22.2	27.8		129	23.8	25.5		106	20.5	31.2
COLOMBIA, 1984												
All causes		9745	344.0	100.0		5179	360.6	100.0		4566	326.9	100.0
Symptoms and ill-defined conditions (780-799)		701	24.7	7.2		381	26.5	7.4		320	22.9	7.0
Total number of deaths from defined causes**		9044	319.2	100.0		4798	334.1	100.0		4246	304.0	100.0
Intestinal infections due to specified organisms and ill defined (007-009)	1	2046	72.2	22.6	1	1091	76.0	22.7	1	955	68.4	22.5
Influenza and pneumonia (480-487)	2	1286	45.4	14.2	3	650	45.3	13.5	2	636	45.5	15.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10c (*Cont.*).

Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 1 - 4 years				Male, 1 - 4 years				Female, 1 - 4 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
COLOMBIA, 1984 (cont.)												
Accidents (E800-E949, E980-E989)	3	1171	41.3	12.9	2	701	48.8	14.6	3	470	33.6	11.1
Nutritional deficiencies (260-269) ...	4	673	23.8	7.4	4	325	22.6	6.8	4	348	24.9	8.2
Bronchitis, emphysema and asthma (490-493)	5	545	19.2	6.0	5	270	18.8	5.6	5	275	19.7	6.5
All other causes		3323	117.3	36.7		1761	122.6	36.7		1562	111.8	36.8
COSTA RICA, 1988												
All causes		262	81.7	100.0		158	96.3	100.0		104	66.5	100.0
Symptoms and ill-defined conditions (780-799)		7	2.2	2.7		2	1.2	1.3		5	3.2	4.8
Total number of deaths from defined causes**		255	79.5	100.0		156	95.1	100.0		99	63.3	100.0
Accidents (E800-E949, E980-E989)	1	51	15.9	20.0	1	37	22.5	23.7	2	14	8.9	14.1
Congenital anomalies (740-759)	2	45	14.0	17.6	2	24	14.6	15.4	1	21	13.4	21.2
Influenza and pneumonia (480-487)	3	26	8.1	10.2	4	12	7.3	7.7	2	14	8.9	14.1
Malignant neoplasms (140-208)	3	26	8.1	10.2	3	18	11.0	11.5	5	8	5.1	8.1
Intestinal infections due to specified organisms and ill defined (007-009).	4	25	7.8	9.8	3	18	11.0	11.5	4	7	4.5	7.1
Diseases of the heart (390-429)	5	9	2.8	3.5	-	2	1.2	1.3	4	7	4.5	7.1
Bronchitis, emphysema and asthma (490-493)	-	7	2.2	2.7	5	5	3.0	3.2	-	2	1.3	2.0
Meningitis (320-322)	-	7	2.2	2.7	5	5	3.0	3.2	-	2	1.3	2.0
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	5	1.6	2.0	-	2	1.2	1.3	5	3	1.9	3.0
All other causes		54	16.8	21.2		33	20.1	21.2		21	13.4	21.2
CUBA, 1988												
All causes		515	81.1	100.0		286	88.1	100.0		229	73.8	100.0
Symptoms and ill-defined conditions (780-799)		3	0.5	0.6		1	0.3	0.3		2	0.6	0.9
Total number of deaths from defined causes**		512	80.6	100.0		285	87.8	100.0		227	73.1	100.0
All accidents and violence (E800-E999)	1	168	26.4	32.8	1	109	33.6	38.2	1	59	19.0	26.0
Congenital anomalies (740-759)	2	75	11.8	14.6	2	35	10.8	12.3	2	40	12.9	17.6
Meningococcal infection (036)	3	45	7.1	8.8	3	25	7.7	8.8	4	20	6.4	8.8
Malignant neoplasms (140-208)	4	44	6.9	8.6	4	23	7.1	8.1	3	21	6.8	9.3
Influenza and pneumonia (480-487)	5	35	5.5	6.8	5	22	6.8	7.7	5	13	4.2	5.7
All other causes		145	22.8	28.3		71	21.9	24.9		74	23.8	32.6
DOMINICAN REPUBLIC, 1985												
All causes		1961	263.9	100.0		1011	268.0	100.0		950	259.6	100.0
Symptoms and ill-defined conditions (780-799)		201	27.0	10.2		106	28.1	10.5		95	26.0	10.0
Total number of deaths from defined causes**		1760	236.8	100.0		905	239.9	100.0		855	233.7	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	388	52.2	22.0	1	209	55.4	23.1	1	179	48.9	20.9
Influenza and pneumonia (480-487)	2	274	36.9	15.6	2	126	33.4	13.9	2	148	40.4	17.3
Nutritional deficiencies (260-269) ...	3	221	29.7	12.6	3	117	31.0	12.9	3	104	28.4	12.2
Accidents (E800-E949, E980-E989)	4	97	13.1	5.5	4	60	15.9	6.6	5	37	10.1	4.3
Measles (055)	5	89	12.0	5.1	5	46	12.2	5.1	4	43	11.8	5.0
All other causes		691	93.0	39.3		347	92.0	38.3		344	94.0	40.2
ECUADOR, 1987												
All causes		4626	374.2	100.0		2362	376.6	100.0		2264	371.6	100.0
Symptoms and ill-defined conditions (780-799)		595	48.1	12.9		301	48.0	12.7		294	48.3	13.0
Total number of deaths from defined causes**		4031	326.0	100.0		2061	328.6	100.0		1970	323.4	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	1236	100.0	30.7	1	617	98.4	29.9	1	619	101.6	31.4
Influenza and pneumonia (480-487)	2	448	36.2	11.1	3	218	34.8	10.6	2	230	37.8	11.7
Accidents (E800-E949, E980-E989)	3	420	34.0	10.4	2	255	40.7	12.4	5	165	27.1	8.4
Bronchitis, emphysema and asthma (490-493)	4	413	33.4	10.2	4	192	30.6	9.3	3	221	36.3	11.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10c (*Cont.*).

Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 1 - 4 years				Male, 1 - 4 years				Female, 1 - 4 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ECUADOR, 1987 (cont.)												
Nutritional deficiencies (260-269) ...	5	379	30.7	9.4	4	192	30.6	9.3	4	187	30.7	9.5
Measles (055)	-	161	13.0	4.0	5	91	14.5	4.4	-	70	11.5	3.6
All other causes		974	78.8	24.2		496	79.1	24.1		478	78.5	24.3
EL SALVADOR, 1984												
All causes		2037	314.8	100.0		1074	325.9	100.0		963	303.3	100.0
Symptoms and ill-defined conditions (780-799)		791	122.3	38.8		421	127.8	39.2		370	116.5	38.4
Total number of deaths from defined causes**		1246	192.6	100.0		653	198.2	100.0		593	186.8	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	385	59.5	30.9	1	222	67.4	34.0	1	163	51.3	27.5
Bronchitis, emphysema and asthma (490-493)	2	132	20.4	10.6	2	73	22.2	11.2	2	59	18.6	9.9
Measles (055)	3	105	16.2	8.4	4	52	15.8	8.0	4	53	16.7	8.9
Nutritional deficiencies (260-269) ...	4	102	15.8	8.2	5	45	13.7	6.9	3	57	18.0	9.6
Accidents (E800-E949, E980-E989)	5	93	14.4	7.5	3	54	16.4	8.3	-	39	12.3	6.6
Influenza and pneumonia (480-487)	-	85	13.1	6.8	-	38	11.5	5.8	5	47	14.8	7.9
All other causes		344	53.2	27.6		169	51.3	25.9		175	55.1	29.5
GUATEMALA, 1984												
All causes		11960	1091.8	100.0		5908	1059.0	100.0		6052	1126.0	100.0
Symptoms and ill-defined conditions (780-799)		1344	122.7	11.2		708	126.9	12.0		636	118.3	10.5
Total number of deaths from defined causes**		10616	969.1	100.0		5200	932.1	100.0		5416	1007.6	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	3780	345.1	35.6	1	1900	340.6	36.5	1	1880	349.8	34.7
Influenza and pneumonia (480-487)	2	2440	222.7	23.0	2	1140	204.3	21.9	2	1300	241.9	24.0
Nutritional deficiencies (260-269) ...	3	812	74.1	7.6	3	384	68.8	7.4	3	428	79.6	7.9
Measles (055)	4	632	57.7	6.0	4	264	47.3	5.1	4	368	68.5	6.8
Whooping cough (033)	5	472	43.1	4.4	5	232	41.6	4.5	5	240	44.7	4.4
All other causes		2480	226.4	23.4		1280	229.4	24.6		1200	223.3	22.2
GUYANA, 1984												
All causes		201	202.6	100.0		112	223.6	100.0		89	181.3	100.0
Symptoms and ill-defined conditions (780-799)		12	12.1	6.0		7	14.0	6.3		5	10.2	5.6
Total number of deaths from defined causes**		189	190.5	100.0		105	209.6	100.0		84	171.1	100.0
Nutritional deficiencies (260-269) ...	1	42	42.3	22.2	1	27	53.9	25.7	1	15	30.5	17.9
Influenza and pneumonia (480-487)	2	18	18.1	9.5	2	10	20.0	9.5	2	8	16.3	9.5
Accidents (E800-E949, E980-E989)	3	12	12.1	6.3	3	6	12.0	5.7	3	6	12.2	7.1
Anemias (280-285)	4	10	10.1	5.3	-	2	4.0	1.9	2	8	16.3	9.5
Congenital anomalies (740-759)	5	8	8.1	4.2	4	4	8.0	3.8	4	4	8.1	4.8
Chronic liver disease and cirrhosis (571)	-	7	7.1	3.7	5	3	6.0	2.9	4	4	8.1	4.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	6	6.0	3.2	4	4	8.0	3.8	-	2	4.1	2.4
Diseases of the heart (390-429)	-	4	4.0	2.1	5	3	6.0	2.9	-	1	2.0	1.2
Bronchitis, emphysema and asthma (490-493)	-	3	3.0	1.6	-	-	-	-	5	3	6.1	3.6
All other causes		79	79.6	41.8		46	91.8	43.8		33	67.2	39.3
HONDURAS, 1981												
All causes		2529	436.0	100.0		1307	449.0	100.0		1222	422.8	100.0
Symptoms and ill-defined conditions (780-799)		844	145.5	33.4		425	146.0	32.5		419	145.0	34.3
Total number of deaths from defined causes**		1685	290.5	100.0		882	303.0	100.0		803	277.9	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	606	104.5	36.0	1	333	114.4	37.8	1	273	94.5	34.0
Measles (055)	2	154	26.5	9.1	2	86	29.5	9.8	3	68	23.5	8.5
Influenza and pneumonia (480-487)	3	152	26.2	9.0	3	80	27.5	9.1	2	72	24.9	9.0
Bronchitis, emphysema and asthma (490-493)	4	93	16.0	5.5	-	39	13.4	4.4	4	54	18.7	6.7

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10c (*Cont.*).

Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 1 - 4 years				Male, 1 - 4 years				Female, 1 - 4 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
HONDURAS, 1981 (cont.)												
Whooping cough (033)	5	85	14.7	5.0	5	44	15.1	5.0	5	41	14.2	5.1
All accidents and violence (E800-E999)	-	83	14.3	4.9	4	53	18.2	6.0	-	30	10.4	3.7
Anemias (280-285)	-	58	10.0	3.4	-	17	5.8	1.9	5	41	14.2	5.1
All other causes		454	78.3	26.9		230	79.0	26.1		224	77.5	27.9
JAMAICA, 1984												
All causes		483	198.6	100.0		248	201.5	100.0		235	195.7	100.0
Symptoms and ill-defined conditions (780-799)		44	18.1	9.1		32	26.0	12.9		12	10.0	5.1
Total number of deaths from defined causes**		439	180.5	100.0		216	175.5	100.0		223	185.7	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	113	46.5	25.7	1	52	42.2	24.1	1	61	50.8	27.4
Nutritional deficiencies (260-269)	2	72	29.6	16.4	2	38	30.9	17.6	2	34	28.3	15.2
Influenza and pneumonia (480-487)	3	51	21.0	11.6	4	19	15.4	8.8	3	32	26.6	14.3
Accidents (E800-E949, E980-E989)	4	39	16.0	8.9	3	24	19.5	11.1	4	15	12.5	6.7
Congenital anomalies (740-759)	5	20	8.2	4.6	-	13	10.6	6.0	5	7	5.8	3.1
Meningitis (320-322)	5	20	8.2	4.6	5	14	11.4	6.5	-	6	5.0	2.7
Bronchitis, emphysema and asthma (490-493)	-	8	3.3	1.8	-	1	0.8	0.5	5	7	5.8	3.1
All other causes		116	47.7	26.4		55	44.7	25.5		61	50.8	27.4
MEXICO, 1986												
All causes		19266	199.3	100.0		9911	201.2	100.0		9112	192.2	100.0
Symptoms and ill-defined conditions (780-799)		1482	15.3	7.7		600	12.2	6.1		639	13.5	7.0
Total number of deaths from defined causes**		17784	184.0	100.0		9311	189.1	100.0		8473	178.7	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	5317	55.0	29.9	1	2756	56.0	29.6	1	2561	54.0	30.2
Accidents (E800-E949, E980-E989)	2	2691	27.8	15.1	2	1552	31.5	16.7	2	1139	24.0	13.4
Influenza and pneumonia (480-487)	3	2157	22.3	12.1	3	1110	22.5	11.9	3	1047	22.1	12.4
Congenital anomalies (740-759)	4	640	6.6	3.6	4	312	6.3	3.4	4	328	6.9	3.9
Nutritional deficiencies (260-269)	5	575	5.9	3.2	5	297	6.0	3.2	-	278	5.9	3.3
Bronchitis, emphysema and asthma (490-493)	-	537	5.6	3.0	-	246	5.0	2.6	5	291	6.1	3.4
All other causes		5867	60.7	33.0		3038	61.7	32.6		2829	59.7	33.4
PANAMA, 1987												
All causes		406	173.7	100.0		219	182.5	100.0		187	164.3	100.0
Symptoms and ill-defined conditions (780-799)		49	21.0	12.1		23	19.2	10.5		26	22.8	13.9
Total number of deaths from defined causes**		357	152.7	100.0		196	163.3	100.0		161	141.5	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	60	25.7	16.8	1	37	30.8	18.9	2	23	20.2	14.3
Accidents (E800-E949, E980-E989)	2	52	22.2	14.6	2	28	23.3	14.3	1	24	21.1	14.9
Influenza and pneumonia (480-487)	3	40	17.1	11.2	3	24	20.0	12.2	4	16	14.1	9.9
Nutritional deficiencies (260-269)	4	34	14.5	9.5	4	14	11.7	7.1	3	20	17.6	12.4
Congenital anomalies (740-759)	5	23	9.8	6.4	4	14	11.7	7.1	5	9	7.9	5.6
Bronchitis, emphysema and asthma (490-493)	-	17	7.3	4.8	5	9	7.5	4.6	-	8	7.0	5.0
Measles (055)	-	11	4.7	3.1	-	2	1.7	1.0	5	9	7.9	5.6
All other causes		120	51.3	33.6		68	56.7	34.7		52	45.7	32.3
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		761	265.0	100.0		388	266.1	100.0		373	263.8	100.0
Symptoms and ill-defined conditions (780-799)		121	42.1	15.9		58	39.8	14.9		63	44.6	16.9
Total number of deaths from defined causes**		640	222.8	100.0		330	226.3	100.0		310	219.2	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	224	78.0	35.0	1	127	87.1	38.5	1	97	68.6	31.3
Influenza and pneumonia (480-487)	2	119	41.4	18.6	2	54	37.0	16.4	2	65	46.0	21.0
Nutritional deficiencies (260-269)	3	41	14.3	6.4	4	19	13.0	5.8	3	22	15.6	7.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10c (*Cont.*).

Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 1 - 4 years				Male, 1 - 4 years				Female, 1 - 4 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PARAGUAY (AREA OF INFORMATION), 1986 (cont.)												
Accidents (E800-E949, E980-E989)	4	39	13.6	8.1	3	25	17.1	7.6	4	14	9.9	4.5
Meningitis (320-322)	5	27	9.4	4.2	5	15	10.3	4.5	5	12	8.5	3.8
All other causes		190	66.2	29.7		90	61.7	27.3		100	70.7	32.3
PERU, 1983												
All causes		12788	564.9	100.0		6449	560.0	100.0		6339	570.1	100.0
Symptoms and ill-defined conditions (780-799)		695	30.7	5.4		348	30.2	5.4		347	31.2	5.5
Total number of deaths from defined causes**		12093	534.2	100.0		6101	529.7	100.0		5992	538.9	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	3057	135.1	25.3	1	1498	130.1	24.6	1	1559	140.2	26.0
Influenza and pneumonia (480-487)	2	2736	120.9	22.6	2	1382	120.0	22.7	2	1354	121.8	22.6
Nutritional deficiencies (260-269) ...	3	911	40.2	7.5	3	448	38.9	7.3	3	463	41.6	7.7
Bronchitis, emphysema and asthma (490-493)	4	789	34.9	6.5	4	395	34.3	6.5	4	394	35.4	6.6
Measles (055)	5	497	22.0	4.1	5	245	21.3	4.0	5	252	22.7	4.2
All other causes		4103	181.3	33.9		2133	185.2	35.0		1970	177.2	32.8
PUERTO RICO, 1987												
All causes		106	36.4	100.0		57	38.2	100.0		49	34.5	100.0
Total number of deaths from defined causes**		106	36.4	100.0		57	38.2	100.0		49	34.5	100.0
Accidents (E800-E949, E980-E989)	1	23	7.9	21.7	1	12	8.0	21.1	1	11	7.7	22.4
Congenital anomalies (740-759)	2	15	5.2	14.2	2	11	7.4	19.3	4	4	2.8	8.2
Influenza and pneumonia (480-487)	3	13	4.5	12.3	3	8	5.4	14.0	3	5	3.5	10.2
Malignant neoplasms (140-208)	4	9	3.1	8.5	5	3	2.0	5.3	2	6	4.2	12.2
Diseases of the heart (390-429)	4	9	3.1	8.5	4	6	4.0	10.5	5	3	2.1	6.1
Meningitis (320-322)	5	6	2.1	5.7	-	2	1.3	3.5	4	4	2.8	8.2
All other causes		31	10.6	29.2		15	10.1	26.3		16	11.3	32.7
UNITED STATES, 1987												
All causes		7473	51.6	100.0		4261	57.5	100.0		3212	45.4	100.0
Symptoms and ill-defined conditions (780-799)		305	2.1	4.1		161	2.2	3.8		144	2.0	4.5
Total number of deaths from defined causes**		7168	49.5	100.0		4100	55.3	100.0		3068	43.4	100.0
Accidents (E800-E949, E980-E989)	1	2997	20.7	41.8	1	1840	24.8	44.9	1	1157	16.4	37.7
Congenital anomalies (740-759)	2	924	6.4	12.9	2	492	6.6	12.0	2	432	6.1	14.1
Malignant neoplasms (140-208)	3	548	3.8	7.6	3	300	4.0	7.3	3	248	3.5	8.1
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	334	2.3	4.7	5	164	2.2	4.0	4	170	2.4	5.5
Diseases of the heart (390-429)	5	323	2.2	4.5	4	167	2.3	4.1	5	156	2.2	5.1
All other causes		2042	14.1	28.5		1137	15.3	27.7		905	12.8	29.5
URUGUAY, 1987												
All causes		191	85.5	100.0		103	90.6	100.0		88	80.3	100.0
Symptoms and ill-defined conditions (780-799)		19	8.5	9.9		10	8.8	9.7		9	8.2	10.2
Total number of deaths from defined causes**		172	77.0	100.0		93	81.8	100.0		79	72.0	100.0
Accidents (E800-E949, E980-E989)	1	42	18.8	24.4	1	24	21.1	25.8	1	18	16.4	22.8
Congenital anomalies (740-759)	2	32	14.3	18.6	2	19	16.7	20.4	2	13	11.9	16.5
Malignant neoplasms (140-208)	3	14	6.3	8.1	3	10	8.8	10.8	4	4	3.6	5.1
Influenza and pneumonia (480-487)	3	14	6.3	8.1	4	7	6.2	7.5	3	7	6.4	8.9
Intestinal infections due to specified organisms and ill defined (007-009).	4	8	3.6	4.7	5	5	4.4	5.4	5	3	2.7	3.8
Measles (055)	5	5	2.2	2.9	-	2	1.8	2.2	5	3	2.7	3.8
Meningococcal infection (036)	-	4	1.8	2.3	-	1	0.9	1.1	5	3	2.7	3.8
All other causes		53	23.7	30.8		25	22.0	26.9		28	25.5	35.4
VENEZUELA, 1987												
All causes		2982	138.1	100.0		1510	137.1	100.0		1472	139.1	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10c (*Cont.*).

Five leading causes of death among children 1 to 4 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 1 - 4 years				Male, 1 - 4 years				Female, 1 - 4 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
VENEZUELA, 1987 (cont.)												
Symptoms and ill-defined conditions (780-799)		534	24.7	17.9		270	24.5	17.9		264	24.9	17.9
Total number of deaths from defined causes**		2448	113.3	100.0		1240	112.6	100.0		1208	114.1	100.0
Accidents (E800-E949, E980-E989)	1	549	25.4	22.4	1	316	28.7	25.5	1	233	22.0	19.3
Intestinal infections due to specified organisms and ill defined (007-009).	2	394	18.2	16.1	2	206	18.7	16.6	3	188	17.8	15.6
Influenza and pneumonia (480-487)	3	390	18.1	15.9	3	193	17.5	15.6	2	197	18.6	16.3
Nutritional deficiencies (260-269) ...	4	122	5.6	5.0	4	57	5.2	4.6	5	65	6.1	5.4
Congenital anomalies (740-759)	5	120	5.6	4.9	-	48	4.4	3.9	4	72	6.8	6.0
Malignant neoplasms (140-208)	-	105	4.9	4.3	5	54	4.9	4.4	-	51	4.8	4.2
All other causes		768	35.6	31.4		366	33.2	29.5		402	38.0	33.3

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10d.

Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 5 - 14 years				Male, 5 - 14 years				Female, 5 - 14 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		2364	39.2	100.0		1390	45.4	100.0		920	31.0	100.0
Symptoms and ill-defined conditions (780-799)		63	1.0	2.7		29	0.9	2.1		32	1.1	3.5
Total number of deaths from defined causes**		2301	38.1	100.0		1361	44.5	100.0		888	29.9	100.0
Accidents (E800-E949, E980-E989)	1	920	15.2	40.0	1	634	20.7	46.6	1	280	9.4	31.5
Malignant neoplasms (140-208)	2	308	5.1	13.4	2	167	5.5	12.3	2	129	4.3	14.5
Diseases of the heart (390-429)	3	216	3.6	9.4	3	112	3.7	8.2	3	86	2.9	9.7
Congenital anomalies (740-759)	4	86	1.4	3.7	5	36	1.2	2.6	4	50	1.7	5.6
Influenza and pneumonia (480-487)	5	74	1.2	3.2	-	31	1.0	2.3	5	42	1.4	4.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	61	1.0	2.7	4	40	1.3	2.9	-	20	0.7	2.3
All other causes		636	10.5	27.6		341	11.1	25.1		281	9.5	31.6
BRAZIL (AREA OF INFORMATION), 1986												
All causes		16468	51.5	100.0		9898	61.7	100.0		6559	41.1	100.0
Symptoms and ill-defined conditions (780-799)		2731	8.5	16.6		1545	9.6	15.6		1185	7.4	18.1
Total number of deaths from defined causes**		13737	42.9	100.0		8353	52.1	100.0		5374	33.7	100.0
Accidents (E800-E949, E980-E989)	1	6339	19.8	46.1	1	4325	27.0	51.8	1	2008	12.6	37.4
Malignant neoplasms (140-208)	2	1184	3.7	8.6	2	675	4.2	8.1	2	509	3.2	9.5
Influenza and pneumonia (480-487)	3	853	2.7	6.2	3	459	2.9	5.5	3	393	2.5	7.3
Diseases of the heart (390-429)	4	557	1.7	4.1	4	276	1.7	3.3	4	281	1.8	5.2
Meningitis (320-322)	5	348	1.1	2.5	-	180	1.1	2.2	5	167	1.0	3.1
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	343	1.1	2.5	5	235	1.5	2.8	-	108	0.7	2.0
All other causes		4113	12.9	29.9		2203	13.7	26.4		1908	12.0	35.5
CANADA, 1988												
All causes		837	22.8	100.0		536	28.4	100.0		301	16.8	100.0
Symptoms and ill-defined conditions (780-799)		23	0.6	2.7		19	1.0	3.5		4	0.2	1.3
Total number of deaths from defined causes**		814	22.1	100.0		517	27.4	100.0		297	16.6	100.0
Accidents (E800-E949, E980-E989)	1	385	10.5	47.3	1	269	14.2	52.0	1	116	6.5	39.1
Malignant neoplasms (140-208)	2	144	3.9	17.7	2	91	4.8	17.6	2	53	3.0	17.8
Congenital anomalies (740-759)	3	68	1.8	8.4	3	31	1.6	6.0	3	37	2.1	12.5
Suicide (E950-E959)	4	28	0.8	3.4	4	24	1.3	4.6	-	4	0.2	1.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	14	0.4	1.7	5	9	0.5	1.7	-	5	0.3	1.7
Bronchitis, emphysema and asthma (490-493)	5	14	0.4	1.7	-	7	0.4	1.4	5	7	0.4	2.4
Diseases of the heart (390-429)	5	14	0.4	1.7	-	4	0.2	0.8	4	10	0.6	3.4
All other causes		147	4.0	18.1		82	4.3	15.9		65	3.6	21.9
CHILE, 1987												
All causes		844	34.2	100.0		523	41.7	100.0		321	26.5	100.0
Symptoms and ill-defined conditions (780-799)		33	1.3	3.9		18	1.4	3.4		15	1.2	4.7
Total number of deaths from defined causes**		811	32.9	100.0		505	40.2	100.0		306	25.3	100.0
Accidents (E800-E949, E980-E989)	1	378	15.3	46.6	1	281	22.4	55.6	1	97	8.0	31.7
Malignant neoplasms (140-208)	2	102	4.1	12.6	2	58	4.6	11.5	2	44	3.6	14.4
Influenza and pneumonia (480-487)	3	60	2.4	7.4	3	31	2.5	6.1	3	29	2.4	9.5
Congenital anomalies (740-759)	4	34	1.4	4.2	4	19	1.5	3.8	4	15	1.2	4.9
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	5	22	0.9	2.7	5	10	0.8	2.0	5	12	1.0	3.9
All other causes		215	8.7	26.5		106	8.4	21.0		109	9.0	35.6
COLOMBIA, 1984												
All causes		3817	57.3	100.0		2300	68.2	100.0		1517	46.1	100.0
Symptoms and ill-defined conditions (780-799)		267	4.0	7.0		150	4.4	6.5		117	3.6	7.7

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10d (*Cont.*).

Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 5 - 14 years				Male, 5 - 14 years				Female, 5 - 14 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
COLOMBIA, 1984 (cont.)												
Total number of deaths from defined causes**		3550	53.3	100.0		2150	63.8	100.0		1400	42.6	100.0
Accidents (E800-E949, E980-E989)	1	1363	20.5	38.4	1	967	28.7	45.0	1	396	12.0	28.3
Malignant neoplasms (140-208)	2	304	4.6	8.6	2	161	4.8	7.5	2	143	4.3	10.2
Influenza and pneumonia (480-487)	3	184	2.8	5.2	3	94	2.8	4.4	3	90	2.7	6.4
Diseases of the heart (390-429)	4	137	2.1	3.9	-	67	2.0	3.1	4	70	2.1	5.0
Intestinal infections due to specified organisms and ill defined (007-009).	5	134	2.0	3.8	4	81	2.4	3.8	5	53	1.6	3.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	108	1.6	3.0	5	80	2.4	3.7	-	28	0.9	2.0
All other causes		1320	19.8	37.2		700	20.8	32.6		620	18.8	44.3
COSTA RICA, 1988												
All causes		179	27.5	100.0		107	32.3	100.0		72	22.6	100.0
Symptoms and ill-defined conditions (780-799)		3	0.5	1.7		3	0.9	2.8		-	-	-
Total number of deaths from defined causes**		176	27.1	100.0		104	31.4	100.0		72	22.6	100.0
Accidents (E800-E949, E980-E989)	1	59	9.1	33.5	1	36	10.9	34.6	1	23	7.2	31.9
Malignant neoplasms (140-208)	2	31	4.8	17.6	2	17	5.1	16.3	2	14	4.4	19.4
Congenital anomalies (740-759)	3	13	2.0	7.4	3	7	2.1	6.7	3	6	1.9	8.3
Diseases of the heart (390-429)	4	6	0.9	3.4	4	4	1.2	3.8	5	2	0.6	2.8
Influenza and pneumonia (480-487)	5	5	0.8	2.8	5	2	0.6	1.9	4	3	0.9	4.2
Chronic liver disease and cirrhosis (571)	-	4	0.6	2.3	4	4	1.2	3.8	-	-	-	-
Cerebrovascular disease (430-438)	-	3	0.5	1.7	5	2	0.6	1.9	-	1	0.3	1.4
Tuberculosis (010-018)	-	2	0.3	1.1	5	2	0.6	1.9	-	-	-	-
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	-	2	0.3	1.1	-	-	-	-	5	2	0.6	2.8
All other causes		51	7.8	29.0		30	9.0	28.8		21	6.6	29.2
CUBA, 1988												
All causes		722	38.6	100.0		460	48.4	100.0		262	28.8	100.0
Symptoms and ill-defined conditions (780-799)		3	0.2	0.4		3	0.3	0.7		-	-	-
Total number of deaths from defined causes**		719	38.7	100.0		457	48.1	100.0		262	28.8	100.0
All accidents and violence (E800-E999)	1	387	20.8	53.8	1	277	29.1	60.6	1	110	12.1	42.0
Malignant neoplasms (140-208)	2	78	4.2	10.8	2	46	4.8	10.1	2	32	3.5	12.2
Congenital anomalies (740-759)	3	59	3.2	8.2	3	32	3.4	7.0	3	27	3.0	10.3
Meningococcal infection (036)	4	24	1.3	3.3	4	13	1.4	2.8	5	11	1.2	4.2
Diseases of the heart (390-429)	5	17	0.9	2.4	5	5	0.5	1.1	4	12	1.3	4.6
All other causes		154	8.3	21.4		84	8.8	18.4		70	7.7	26.7
DOMINICAN REPUBLIC, 1985												
All causes		781	46.4	100.0		419	49.2	100.0		362	43.5	100.0
Symptoms and ill-defined conditions (780-799)		80	4.8	10.2		46	5.4	11.0		34	4.1	9.4
Total number of deaths from defined causes**		701	41.6	100.0		373	43.8	100.0		328	39.5	100.0
Accidents (E800-E949, E980-E989)	1	147	8.7	21.0	1	96	11.3	25.7	1	51	6.1	15.5
Diseases of the heart (390-429)	2	66	3.9	9.4	3	28	3.3	7.5	2	38	4.6	11.6
Influenza and pneumonia (480-487)	3	61	3.6	8.7	2	30	3.5	8.0	3	31	3.7	9.5
Intestinal infections due to specified organisms and ill defined (007-009).	4	41	2.4	5.8	4	20	2.3	5.4	4	21	2.5	6.4
Anemias (280-285)	5	36	2.1	5.1	-	17	2.0	4.6	5	19	2.3	5.8
Malignant neoplasms (140-208)	-	34	2.0	4.9	5	19	2.2	5.1	-	15	1.8	4.6
Nutritional deficiencies (260-269)	-	33	2.0	4.7	-	12	1.4	3.2	4	21	2.5	6.4
All other causes		283	16.8	40.4		151	17.7	40.5		132	15.9	40.2
ECUADOR, 1987												
All causes		2041	79.0	100.0		1148	87.7	100.0		893	70.2	100.0
Symptoms and ill-defined conditions (780-799)		284	11.0	13.9		158	12.1	13.8		126	9.9	14.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10d (Cont.).

Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 5 - 14 years				Male, 5 - 14 years				Female, 5 - 14 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ECUADOR, 1987 (cont.)												
Total number of deaths from defined causes**		1757	68.0	100.0		990	75.6	100.0		767	60.3	100.0
Accidents (E800-E949, E980-E989)	1	611	23.7	34.8	1	402	30.7	40.6	1	209	16.4	27.2
Influenza and pneumonia (480-487)	2	142	5.5	8.1	3	66	5.0	6.7	2	76	6.0	9.9
Malignant neoplasms (140-208)	3	131	5.1	7.5	2	74	5.7	7.5	4	57	4.5	7.4
Intestinal infections due to specified organisms and ill defined (007-009).	4	109	4.2	6.2	4	49	3.7	4.9	3	60	4.7	7.8
Diseases of the heart (390-429)	5	62	2.4	3.5	5	33	2.5	3.3	5	29	2.3	3.8
All other causes		702	27.2	40.0		366	27.9	37.0		336	26.4	43.8
EL SALVADOR, 1984												
All causes		924	71.3	100.0		523	79.6	100.0		401	62.7	100.0
Symptoms and ill-defined conditions (780-799)		236	18.2	25.5		151	23.0	28.9		85	13.3	21.2
Total number of deaths from defined causes**		688	53.1	100.0		372	56.6	100.0		316	49.4	100.0
Accidents (E800-E949, E980-E989)	1	242	18.7	35.2	1	151	23.0	40.6	1	91	14.2	28.8
Intestinal infections due to specified organisms and ill defined (007-009).	2	54	4.2	7.8	2	28	4.3	7.5	2	26	4.1	8.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	36	2.8	5.2	3	24	3.7	6.5	-	12	1.9	3.8
Diseases of the heart (390-429)	4	30	2.3	4.4	4	20	3.0	5.4	-	10	1.6	3.2
Malignant neoplasms (140-208)	4	30	2.3	4.4	5	14	2.1	3.8	4	16	2.5	5.1
Measles (055)	5	28	2.2	4.1	-	13	2.0	3.5	5	15	2.3	4.7
Typhoid fever (002.0)	-	25	1.9	3.6	-	6	0.9	1.6	3	19	3.0	6.0
All other causes		243	18.7	35.3		116	17.7	31.2		127	19.9	40.2
GUATEMALA, 1984												
All causes		3600	166.6	100.0		1892	172.1	100.0		1708	160.9	100.0
Symptoms and ill-defined conditions (780-799)		444	20.5	12.3		224	20.4	11.8		220	20.7	12.9
Total number of deaths from defined causes**		3156	146.1	100.0		1668	151.7	100.0		1488	140.2	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	788	36.5	25.0	1	436	39.7	26.1	2	352	33.2	23.7
Influenza and pneumonia (480-487)	2	708	32.8	22.4	2	332	30.2	19.9	1	376	35.4	25.3
Nutritional deficiencies (260-269)	3	264	12.2	8.4	4	140	12.7	8.4	3	124	11.7	8.3
Accidents (E800-E949, E980-E989)	4	204	9.4	6.5	3	152	13.8	9.1	5	52	4.9	3.5
Measles (055)	5	148	6.8	4.7	5	92	8.4	5.5	4	56	5.3	3.8
All other causes		1044	48.3	33.1		516	46.9	30.9		528	49.7	35.5
GUYANA, 1984												
All causes		146	65.2	100.0		80	70.2	100.0		66	60.0	100.0
Symptoms and ill-defined conditions (780-799)		14	6.3	9.6		7	6.1	8.8		7	6.4	10.6
Total number of deaths from defined causes**		132	59.0	100.0		73	64.1	100.0		59	53.6	100.0
Accidents (E800-E949, E980-E989)	1	29	13.0	22.0	1	19	16.7	26.0	1	10	9.1	16.9
Diseases of the heart (390-429)	2	13	5.8	9.8	2	7	6.1	9.6	2	6	5.5	10.2
Influenza and pneumonia (480-487)	3	8	3.6	6.1	5	3	2.6	4.1	3	5	4.5	8.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	6	2.7	4.5	3	5	4.4	6.8	-	1	0.9	1.7
Cerebrovascular disease (430-438)	5	5	2.2	3.8	5	3	2.6	4.1	5	2	1.8	3.4
Anemias (280-285)	5	5	2.2	3.8	-	2	1.8	2.7	4	3	2.7	5.1
Congenital anomalies (740-759)	-	4	1.8	3.0	5	3	2.6	4.1	-	1	0.9	1.7
Malignant neoplasms (140-208)	-	4	1.8	3.0	4	4	3.5	5.5	-	-	-	-
Appendicitis (540-543)	-	3	1.3	2.3	-	1	0.9	1.4	5	2	1.8	3.4
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	2	0.9	1.5	-	-	-	-	5	2	1.8	3.4
Bronchitis, emphysema and asthma (490-493)	-	2	0.9	1.5	-	-	-	-	5	2	1.8	3.4
All other causes		51	22.8	38.6		26	22.8	35.6		25	22.7	42.4

* Equivalent to R-list published in Health Conditions 81-84
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10d (*Cont.*).

Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 5 - 14 years				Male, 5 - 14 years				Female, 5 - 14 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
HONDURAS, 1981												
All causes		996	91.1	100.0		541	98.7	100.0		455	83.5	100.0
Symptoms and ill-defined conditions (780-799)		323	29.6	32.4		164	29.9	30.3		159	29.2	34.9
Total number of deaths from defined causes**		673	61.6	100.0		377	68.8	100.0		296	54.3	100.0
All accidents and violence (E800-E999)	1	142	13.0	21.1	1	90	16.4	23.9	2	52	9.5	17.6
Intestinal infections due to specified organisms and ill defined (007-009).	2	136	12.4	20.2	2	75	13.7	19.9	1	61	11.2	20.6
Anemias (280-285)	3	45	4.1	6.7	3	27	4.9	7.2	5	18	3.3	6.1
Diseases of the heart (390-429)	4	44	4.0	6.5	4	24	4.4	6.4	4	20	3.7	6.8
Measles (055)	5	39	3.6	5.8	5	17	3.1	4.5	3	22	4.0	7.4
All other causes		267	24.4	39.7		144	26.3	38.2		123	22.6	41.6
JAMAICA, 1984												
All causes		269	49.7	100.0		146	52.8	100.0		123	46.4	100.0
Symptoms and ill-defined conditions (780-799)		40	7.4	14.9		25	9.0	17.1		15	5.7	12.2
Total number of deaths from defined causes**		229	42.3	100.0		121	43.7	100.0		108	40.8	100.0
Accidents (E800-E949, E980-E989)	1	46	8.5	20.1	1	29	10.5	24.0	1	17	6.4	15.7
Malignant neoplasms (140-208)	2	24	4.4	10.5	2	14	5.1	11.6	4	10	3.8	9.3
Diseases of the heart (390-429)	3	23	4.2	10.0	3	11	4.0	9.1	2	12	4.5	11.1
Influenza and pneumonia (480-487)	4	19	3.5	8.3	5	8	2.9	6.6	3	11	4.2	10.2
Intestinal infections due to specified organisms and ill defined (007-009).	5	14	2.6	6.1	4	10	3.6	8.3	-	4	1.5	3.7
Mental disorders (290-319)	-	8	1.5	3.5	-	2	0.7	1.7	5	6	2.3	5.6
All other causes		95	17.5	41.5		47	17.0	38.8		48	18.1	44.4
MEXICO, 1986												
All causes		11972	54.0	100.0		7179	63.6	100.0		4679	42.9	100.0
Symptoms and ill-defined conditions (780-799)		562	2.5	4.7		234	2.1	3.3		214	2.0	4.6
Total number of deaths from defined causes**		11410	51.4	100.0		6945	61.6	100.0		4465	41.0	100.0
Accidents (E800-E949, E980-E989)	1	4405	19.9	38.6	1	3139	27.8	45.2	1	1266	11.6	28.4
Intestinal infections due to specified organisms and ill defined (007-009).	2	922	4.2	8.1	3	462	4.1	6.7	2	460	4.2	10.3
Malignant neoplasms (140-208)	3	916	4.1	8.0	2	519	4.6	7.5	3	397	3.6	8.9
Influenza and pneumonia (480-487)	4	509	2.3	4.5	5	275	2.4	4.0	4	234	2.1	5.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	391	1.8	3.4	4	267	2.5	4.1	-	104	1.0	2.3
Diseases of the heart (390-429)	-	371	1.7	3.3	-	188	1.7	2.7	5	183	1.7	4.1
All other causes		3896	17.6	34.1		2075	18.4	29.9		1821	16.7	40.8
PANAMA, 1987												
All causes		247	44.1	100.0		132	46.2	100.0		115	41.9	100.0
Symptoms and ill-defined conditions (780-799)		35	6.2	14.2		24	8.4	18.2		11	4.0	9.6
Total number of deaths from defined causes**		212	37.8	100.0		108	37.8	100.0		104	37.9	100.0
Accidents (E800-E949, E980-E989)	1	72	12.9	34.0	1	41	14.3	38.0	1	31	11.3	29.8
Malignant neoplasms (140-208)	2	23	4.1	10.8	3	6	2.1	5.6	2	17	6.2	16.3
Intestinal infections due to specified organisms and ill defined (007-009).	3	13	2.3	6.1	3	6	2.1	5.6	4	7	2.6	6.7
Nephritis, nephrotic syndrome and nephrosis (580-589)	3	13	2.3	6.1	4	4	1.4	3.7	3	9	3.3	8.7
Congenital anomalies (740-759)	4	9	1.6	4.2	2	7	2.4	6.5	-	2	0.7	1.9
Bronchitis, emphysema and asthma (490-493)	5	8	1.4	3.8	5	3	1.0	2.8	5	5	1.8	4.8
Meningitis (320-322)	-	5	0.9	2.4	5	3	1.0	2.8	-	2	0.7	1.9
Influenza and pneumonia (480-487)	-	5	0.9	2.4	4	4	1.4	3.7	-	1	0.4	1.0
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	4	0.7	1.9	5	3	1.0	2.8	-	1	0.4	1.0
All other causes		60	10.7	28.3		31	10.8	28.7		29	10.6	27.9

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10d (*Cont.*).

Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 5 - 14 years				Male, 5 - 14 years				Female, 5 - 14 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		347	59.2	100.0		186	62.6	100.0		161	55.7	100.0
Symptoms and ill-defined conditions (780-799)		48	8.2	13.8		21	7.1	11.3		27	9.3	16.8
Total number of deaths from defined causes**		299	51.0	100.0		165	55.6	100.0		134	46.4	100.0
Accidents (E800-E949, E980-E989)	1	95	16.2	31.8	1	58	19.5	35.2	1	37	12.8	27.6
Intestinal infections due to specified organisms and ill defined (007-009).	2	33	5.6	11.0	2	20	6.7	12.1	2	13	4.5	9.7
Influenza and pneumonia (480-487)	3	26	4.4	8.7	3	17	5.7	10.3	4	9	3.1	6.7
Malignant neoplasms (140-208)	4	19	3.2	6.4	4	8	2.7	4.8	3	11	3.8	8.2
Meningitis (320-322)	5	10	1.7	3.3	-	3	1.0	1.8	5	7	2.4	5.2
Diseases of the heart (390-429)	-	9	1.5	3.0	5	5	1.7	3.0	-	4	1.4	3.0
All other causes		107	18.3	35.8		54	18.2	32.7		53	18.3	39.6
PERU, 1983												
All causes		3479	73.7	100.0		1869	78.0	100.0		1610	69.3	100.0
Symptoms and ill-defined conditions (780-799)		219	4.6	6.3		111	4.6	5.9		108	4.7	6.7
Total number of deaths from defined causes**		3260	69.1	100.0		1758	73.3	100.0		1502	64.7	100.0
Influenza and pneumonia (480-487)	1	645	13.7	19.8	2	334	13.9	19.0	1	311	13.4	20.7
Accidents (E800-E949, E980-E989)	2	592	12.5	18.2	1	380	15.8	21.6	2	212	9.1	14.1
Intestinal infections due to specified organisms and ill defined (007-009).	3	257	5.4	7.9	3	137	5.7	7.8	3	120	5.2	8.0
Tuberculosis (010-018)	4	175	3.7	5.4	4	76	3.2	4.3	4	99	4.3	6.6
Bronchitis, emphysema and asthma (490-493)	5	137	2.9	4.2	5	67	2.8	3.8	5	70	3.0	4.7
All other causes		1454	30.8	44.6		764	31.9	43.5		690	29.7	45.9
PUERTO RICO, 1987												
All causes		155	22.5	100.0		98	27.9	100.0		57	16.8	100.0
Symptoms and ill-defined conditions (780-799)		1	0.1	0.6		1	0.3	1.0		-	-	-
Total number of deaths from defined causes**		154	22.3	100.0		97	27.6	100.0		57	16.8	100.0
Accidents (E800-E949, E980-E989)	1	68	9.9	44.2	1	52	14.8	53.6	1	16	4.7	28.1
Malignant neoplasms (140-208)	2	19	2.8	12.3	2	9	2.6	9.3	2	10	3.0	17.5
Diseases of the heart (390-429)	3	9	1.3	5.8	3	4	1.1	4.1	3	5	1.5	8.8
Congenital anomalies (740-759)	4	7	1.0	4.5	3	4	1.1	4.1	5	3	0.9	5.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	4	0.6	2.6	4	3	0.9	3.1	-	1	0.3	1.8
Influenza and pneumonia (480-487)	5	4	0.6	2.6	-	-	-	-	4	4	1.2	7.0
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	-	3	0.4	1.9	4	3	0.9	3.1	-	-	-	-
Cerebrovascular disease (430-438)	-	2	0.3	1.3	5	2	0.6	2.1	-	-	-	-
All other causes		38	5.5	24.7		20	5.7	20.6		18	5.3	31.6
UNITED STATES, 1987												
All causes		8743	25.6	100.0		5579	31.9	100.0		3164	19.0	100.0
Symptoms and ill-defined conditions (780-799)		159	0.5	1.8		96	0.5	1.7		63	0.4	2.0
Total number of deaths from defined causes**		8584	25.1	100.0		5483	31.4	100.0		3101	18.6	100.0
Accidents (E800-E949, E980-E989)	1	4261	12.5	49.6	1	2958	16.9	53.9	1	1303	7.8	42.0
Malignant neoplasms (140-208)	2	1138	3.3	13.3	2	670	3.8	12.2	2	468	2.8	15.1
Congenital anomalies (740-759)	3	448	1.3	5.2	3	265	1.5	4.8	3	183	1.1	5.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	407	1.2	4.7	4	246	1.4	4.5	4	161	1.0	5.2
Diseases of the heart (390-429)	5	325	1.0	3.8	-	179	1.0	3.3	5	146	0.9	4.7
Suicide (E950-E959)	-	251	0.7	2.9	5	199	1.1	3.6	-	52	0.3	1.7
All other causes		1754	5.1	20.4		966	5.5	17.6		788	4.7	25.4
URUGUAY, 1987												
All causes		210	38.7	100.0		129	46.9	100.0		81	30.3	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10d (*Cont.*).

Five leading causes of death among children 5 to 14 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 5 - 14 years				Male, 5 - 14 years				Female, 5 - 14 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
URUGUAY, 1987 (cont.)												
Symptoms and ill-defined conditions (780-799)		12	2.2	5.7		6	2.2	4.7		6	2.2	7.4
Total number of deaths from defined causes**		198	36.5	100.0		123	44.7	100.0		75	28.1	100.0
Accidents (E800-E949, E980-E989)	1	87	16.0	43.9	1	62	22.5	50.4	1	25	9.4	33.3
Malignant neoplasms (140-208)	2	33	6.1	16.7	2	16	5.8	13.0	2	17	6.4	22.7
Congenital anomalies (740-759)	3	17	3.1	8.6	3	13	4.7	10.6	3	4	1.5	5.3
Cerebrovascular disease (430-438)	4	5	0.9	2.5	5	2	0.7	1.6	4	3	1.1	4.0
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	4	5	0.9	2.5	5	2	0.7	1.6	4	3	1.1	4.0
Diseases of the heart (390-429)	5	4	0.7	2.0	4	3	1.1	2.4	-	1	0.4	1.3
Influenza and pneumonia (480-487)	-	3	0.6	1.5	-	1	0.4	0.8	5	2	0.7	2.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	3	0.6	1.5	-	-	-	-	4	3	1.1	4.0
All other causes		41	7.6	20.7		24	8.7	19.5		17	6.4	22.7
VENEZUELA, 1987												
All causes		2008	44.5	100.0		1181	51.3	100.0		827	37.3	100.0
Symptoms and ill-defined conditions (780-799)		243	5.4	12.1		122	5.3	10.3		121	5.5	14.6
Total number of deaths from defined causes**		1765	39.1	100.0		1059	46.0	100.0		706	31.9	100.0
Accidents (E800-E949, E980-E989)	1	790	17.5	44.8	1	548	23.8	51.7	1	242	10.9	34.3
Malignant neoplasms (140-208)	2	207	4.6	11.7	2	110	4.8	10.4	2	97	4.4	13.7
Influenza and pneumonia (480-487)	3	101	2.2	5.7	3	45	2.0	4.2	3	56	2.5	7.9
Congenital anomalies (740-759)	4	63	1.4	3.6	4	34	1.5	3.2	4	29	1.3	4.1
Diseases of the heart (390-429)	5	58	1.3	3.3	5	30	1.3	2.8	5	28	1.3	4.0
All other causes		546	12.1	30.9		292	12.7	27.6		254	11.5	36.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e.

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		4327	90.2	100.0		2816	115.9	100.0		1457	62.0	100.0
Symptoms and ill-defined conditions (780-799)		115	2.4	2.7		55	2.3	2.0		56	2.4	3.8
Total number of deaths from defined causes**		4212	87.8	100.0		2761	113.7	100.0		1411	59.6	100.0
Accidents (E800-E949, E980-E989)	1	1607	33.5	38.2	1	1274	52.5	46.1	1	328	13.9	23.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	462	9.6	11.0	2	388	16.0	14.1	-	62	2.6	4.4
Diseases of the heart (390-429)	3	385	8.0	9.1	3	210	8.6	7.6	2	168	7.1	11.9
Malignant neoplasms (140-208)	4	309	6.4	7.3	4	194	8.0	7.0	3	112	4.7	7.9
Suicide (E950-E959)	5	289	6.0	6.9	5	186	7.7	6.7	4	101	4.3	7.2
Complications of pregnancy, childbirth and puerperium (630-676)	-	96	2.0	2.3	-	-	-	-	5	96	4.1	6.8
All other causes		1064	22.2	25.3		509	21.0	18.4		544	23.0	38.6
BRAZIL (AREA OF INFORMATION), 1986												
All causes		38504	136.6	100.0		28333	200.5	100.0		10149	72.2	100.0
Symptoms and ill-defined conditions (780-799)		3966	14.1	10.3		2520	17.8	8.9		1438	10.2	14.2
Total number of deaths from defined causes**		34538	122.5	100.0		25813	182.6	100.0		8711	62.0	100.0
Accidents (E800-E949, E980-E989)	1	15851	56.2	45.9	1	13184	93.3	51.1	1	2659	18.9	30.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	6863	24.4	19.9	2	6303	44.6	24.4	5	560	4.0	6.4
Diseases of the heart (390-429)	3	1569	5.6	4.5	3	832	5.9	3.2	2	736	5.2	8.4
Malignant neoplasms (140-208)	4	1369	4.9	4.0	4	775	5.5	3.0	4	594	4.2	6.8
Suicide (E950-E959)	5	1016	3.6	2.9	5	685	4.8	2.7	-	331	2.4	3.8
Complications of pregnancy, childbirth and puerperium (630-676)	-	607	2.2	1.8	-	-	-	-	3	607	4.3	7.0
All other causes		7263	25.8	21.0		4034	28.5	15.6		3224	22.9	37.0
CANADA, 1988												
All causes		3253	74.3	100.0		2489	111.6	100.0		764	35.6	100.0
Symptoms and ill-defined conditions (780-799)		123	2.8	3.8		85	3.8	3.4		38	1.8	5.0
Total number of deaths from defined causes**		3130	71.5	100.0		2404	107.7	100.0		726	33.8	100.0
Accidents (E800-E949, E980-E989)	1	1726	39.4	55.1	1	1390	62.3	57.8	1	336	15.7	46.3
Suicide (E950-E959)	2	645	14.7	20.6	2	549	24.6	22.8	2	96	4.5	13.2
Malignant neoplasms (140-208)	3	203	4.6	6.5	3	128	5.7	5.3	3	75	3.5	10.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	86	2.0	2.7	4	55	2.5	2.3	4	31	1.4	4.3
Congenital anomalies (740-759)	5	61	1.4	1.9	5	39	1.7	1.6	5	22	1.0	3.0
All other causes		409	9.3	13.1		243	10.9	10.1		166	7.7	22.9
CHILE, 1987												
All causes		2131	83.3	100.0		1508	116.6	100.0		623	49.2	100.0
Symptoms and ill-defined conditions (780-799)		64	2.5	3.0		32	2.5	2.1		32	2.5	5.1
Total number of deaths from defined causes**		2067	80.8	100.0		1476	114.1	100.0		591	46.7	100.0
Accidents (E800-E949, E980-E989)	1	1085	42.4	52.5	1	912	70.5	61.8	1	173	13.7	29.3
Malignant neoplasms (140-208)	2	169	6.6	8.2	3	110	8.5	7.5	2	59	4.7	10.0
Suicide (E950-E959)	3	154	6.0	7.5	2	116	9.0	7.9	4	38	3.0	6.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	75	2.9	3.6	4	69	5.3	4.7	-	6	0.5	1.0
Diseases of the heart (390-429)	5	62	2.4	3.0	5	36	2.8	2.4	-	26	2.1	4.4
Influenza and pneumonia (480-487)	-	57	2.2	2.8	-	29	2.2	2.0	5	28	2.2	4.7
Complications of pregnancy, childbirth and puerperium (630-676)	-	45	1.8	2.2	-	-	-	-	3	45	3.6	7.6
All other causes		420	16.4	20.3		204	15.8	13.8		216	17.1	36.5
COLOMBIA, 1984												
All causes		9025	145.6	100.0		6646	212.8	100.0		2379	77.4	100.0
Symptoms and ill-defined conditions (780-799)		252	4.1	2.8		146	4.7	2.2		106	3.4	4.5

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e (*Cont.*).

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
COLOMBIA, 1984 (cont.)												
Total number of deaths from defined causes**		8773	141.6	100.0		6500	208.1	100.0		2273	73.9	100.0
Accidents (E800-E949, E980-E989)	1	2913	47.0	33.2	1	2426	77.7	37.3	1	487	15.8	21.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	2572	41.5	29.3	2	2350	75.2	36.2	2	222	7.2	9.8
Malignant neoplasms (140-208)	3	457	7.4	5.2	4	252	8.1	3.9	4	205	6.7	9.0
Suicide (E950-E959)	4	411	6.6	4.7	3	291	9.3	4.5	-	120	3.9	5.3
Diseases of the heart (390-429)	5	387	6.2	4.4	5	219	7.0	3.4	5	168	5.5	7.4
Complications of pregnancy, childbirth and puerperium (630-676)	-	218	3.5	2.5	-	-	-	-	3	218	7.1	9.6
All other causes		1815	29.3	20.7		962	30.8	14.8		853	27.7	37.5
COSTA RICA, 1988												
All causes		389	63.0	100.0		275	87.3	100.0		114	37.6	100.0
Symptoms and ill-defined conditions (780-799)		6	1.0	1.5		4	1.3	1.5		2	0.7	1.8
Total number of deaths from defined causes**		383	62.0	100.0		271	86.0	100.0		112	37.0	100.0
Accidents (E800-E949, E980-E989)	1	151	24.4	39.4	1	129	41.0	47.6	2	22	7.3	19.6
Malignant neoplasms (140-208)	2	58	9.4	15.1	2	35	11.1	12.9	1	23	7.6	20.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	33	5.3	8.6	3	26	8.3	9.6	5	7	2.3	6.3
Suicide (E950-E959)	4	30	4.9	7.8	4	22	7.0	8.1	4	8	2.6	7.1
Diseases of the heart (390-429)	5	22	3.6	5.7	5	12	3.8	4.4	3	10	3.3	8.9
All other causes		89	14.4	23.2		47	14.9	17.3		42	13.9	37.5
CUBA, 1988												
All causes		2534	111.3	100.0		1535	131.6	100.0		999	90.0	100.0
Symptoms and ill-defined conditions (780-799)		13	0.6	0.5		8	0.7	0.5		5	0.5	0.5
Total number of deaths from defined causes**		2521	110.8	100.0		1527	130.9	100.0		994	89.6	100.0
All accidents and violence (E800-E999)	1	1733	76.1	68.7	1	1113	95.4	72.9	1	620	55.9	62.4
Malignant neoplasms (140-208)	2	166	7.3	6.6	2	87	7.5	5.7	2	79	7.1	7.9
Diseases of the heart (390-429)	3	86	3.8	3.4	3	44	3.8	2.9	3	42	3.8	4.2
Congenital anomalies (740-759)	4	71	3.1	2.8	4	40	3.4	2.6	5	31	2.8	3.1
Cerebrovascular disease (430-438)	5	33	1.4	1.3	5	21	1.8	1.4	-	12	1.1	1.2
Complications of pregnancy, childbirth and puerperium (630-676)	5	33	1.4	1.3	-	-	-	-	4	33	3.0	3.3
All other causes		399	17.5	15.8		222	19.0	14.5		177	16.0	17.8
DOMINICAN REPUBLIC, 1985												
All causes		1233	86.4	100.0		738	103.0	100.0		495	69.7	100.0
Symptoms and ill-defined conditions (780-799)		103	7.2	8.4		46	6.4	6.2		57	8.0	11.5
Total number of deaths from defined causes**		1130	79.2	100.0		692	96.6	100.0		438	61.7	100.0
Accidents (E800-E949, E980-E989)	1	335	23.5	29.6	1	279	39.0	40.3	2	56	7.9	12.8
Diseases of the heart (390-429)	2	101	7.1	8.9	3	40	5.6	5.8	1	61	8.6	13.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	95	6.7	8.4	2	80	11.2	11.6	-	15	2.1	3.4
Tuberculosis (010-018)	4	60	4.2	5.3	4	36	5.0	5.2	5	24	3.4	5.5
Complications of pregnancy, childbirth and puerperium (630-676)	5	46	3.2	4.1	-	-	-	-	3	46	6.5	10.5
Malignant neoplasms (140-208)	-	43	3.0	3.8	-	18	2.5	2.6	4	25	3.5	5.7
Suicide (E950-E959)	-	40	2.8	3.5	5	24	3.4	3.5	-	16	2.3	3.7
All other causes		410	28.7	36.3		215	30.0	31.1		195	27.5	44.5
ECUADOR, 1987												
All causes		2696	133.2	100.0		1687	164.8	100.0		1009	101.0	100.0
Symptoms and ill-defined conditions (780-799)		269	13.3	10.0		141	13.8	8.4		128	12.8	12.7
Total number of deaths from defined causes**		2427	119.9	100.0		1546	151.0	100.0		881	88.1	100.0
Accidents (E800-E949, E980-E989)	1	739	36.5	30.4	1	624	60.9	40.4	2	115	11.5	13.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e (*Cont.*).

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ECUADOR, 1987 (cont.)												
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	259	12.8	10.7	2	237	23.1	15.3	-	22	2.2	2.5
Tuberculosis (010-018)	3	164	8.1	6.8	3	87	8.5	5.6	4	77	7.7	8.7
Suicide (E950-E959)	4	157	7.8	6.5	4	78	7.6	5.0	3	79	7.9	9.0
Complications of pregnancy, childbirth and puerperium (630-676)	5	133	6.6	5.5	-	-	-	-	1	133	13.3	15.1
Malignant neoplasms (140-208)	-	124	6.1	5.1	5	62	6.1	4.0	5	62	6.2	7.0
All other causes		851	42.1	35.1		456	44.7	29.6		393	39.3	44.6
EL SALVADOR, 1984												
All causes		2986	316.6	100.0		2417	507.5	100.0		569	121.9	100.0
Symptoms and ill-defined conditions (780-799)		208	22.1	7.0		109	22.9	4.5		99	21.2	17.4
Total number of deaths from defined causes**		2778	294.5	100.0		2308	484.6	100.0		470	100.7	100.0
Accidents (E800-E949, E980-E989)	1	1318	139.7	47.4	1	1230	258.2	53.3	2	88	18.8	18.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	721	76.4	26.0	2	688	144.4	29.8	5	33	7.1	7.0
Suicide (E950-E959)	3	246	26.1	8.9	3	140	29.4	6.1	1	106	22.7	22.6
Diseases of the heart (390-429)	4	87	9.2	3.1	4	48	10.1	2.1	4	39	8.4	8.3
Typhoid fever (002.0)	5	49	5.2	1.8	-	26	5.5	1.1	-	23	4.9	4.9
Complications of pregnancy, childbirth and puerperium (630-676)	-	42	4.5	1.5	-	-	-	-	3	42	9.0	8.9
Mental disorders (290-319)	-	34	3.6	1.2	5	32	6.7	1.4	-	2	0.4	0.4
All other causes		281	29.8	10.1		144	30.2	6.2		137	29.3	29.1
GUATEMALA, 1984												
All causes		3140	209.6	100.0		1912	251.9	100.0		1228	166.2	100.0
Symptoms and ill-defined conditions (780-799)		284	19.0	9.0		156	20.6	8.2		128	17.3	10.4
Total number of deaths from defined causes**		2856	190.7	100.0		1756	231.3	100.0		1100	148.9	100.0
Accidents (E800-E949, E980-E989)	1	948	63.3	33.2	1	816	107.5	46.5	2	132	17.9	12.0
Intestinal infections due to specified organisms and ill defined (007-009).	2	340	22.7	11.9	3	180	23.7	10.3	1	160	21.7	14.5
Influenza and pneumonia (480-487)	3	320	21.4	11.2	2	188	24.8	10.7	2	132	17.9	12.0
Diseases of the heart (390-429)	4	152	10.1	5.3	4	72	9.5	4.1	4	80	10.8	7.3
Nutritional deficiencies (260-269)	5	136	9.1	4.8	5	52	6.9	3.0	3	84	11.4	7.6
Complications of pregnancy, childbirth and puerperium (630-676)	-	56	3.7	2.0	-	-	-	-	5	56	7.6	5.1
All other causes		904	60.4	31.7		448	59.0	25.5		456	61.7	41.5
GUYANA, 1984												
All causes		243	116.2	100.0		152	143.3	100.0		91	88.3	100.0
Symptoms and ill-defined conditions (780-799)		37	17.7	15.2		22	20.7	14.5		15	14.5	16.5
Total number of deaths from defined causes**		206	98.5	100.0		130	122.5	100.0		76	73.7	100.0
Accidents (E800-E949, E980-E989)	1	68	32.5	33.0	1	50	47.1	38.5	1	18	17.5	23.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	19	9.1	9.2	2	15	14.1	11.5	3	4	3.9	5.3
Diseases of the heart (390-429)	3	13	6.2	6.3	3	8	7.5	6.2	2	5	4.8	6.6
Cerebrovascular disease (430-438)	4	11	5.3	5.3	4	6	5.7	4.6	2	5	4.8	6.6
Malignant neoplasms (140-208)	5	9	4.3	4.4	4	6	5.7	4.6	4	3	2.9	3.9
Suicide (E950-E959)	-	7	3.3	3.4	5	4	3.8	3.1	4	3	2.9	3.9
Complications of pregnancy, childbirth and puerperium (630-676)	-	4	1.9	1.9	-	-	-	-	3	4	3.9	5.3
Diabetes mellitus (250)	-	4	1.9	1.9	-	2	1.9	1.5	5	2	1.9	2.6
Anemias (280-285)	-	4	1.9	1.9	-	2	1.9	1.5	5	2	1.9	2.6
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	4	1.9	1.9	-	1	0.9	0.8	4	3	2.9	3.9
All other causes		63	30.1	30.6		36	33.9	27.7		27	26.2	35.5
HONDURAS, 1981												
All causes		1070	146.3	100.0		664	180.6	100.0		406	111.7	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e (*Cont.*).

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
HONDURAS, 1981 (cont.)												
Symptoms and ill-defined conditions (780-799)		249	34.1	23.3		100	27.2	15.1		149	41.0	36.7
Total number of deaths from defined causes**		821	112.3	100.0		564	153.4	100.0		257	70.7	100.0
All accidents and violence (E800-E999)	1	476	65.1	58.0	1	409	111.2	72.5	1	67	18.4	26.1
Diseases of the heart (390-429)	2	57	7.8	6.9	2	29	7.9	5.1	2	28	7.7	10.9
Malignant neoplasms (140-208)	3	30	4.1	3.7	3	12	3.3	2.1	3	18	5.0	7.0
Cerebrovascular disease (430-438)	4	26	3.6	3.2	5	9	2.4	1.6	4	17	4.7	6.6
Intestinal infections due to specified organisms and ill defined (007-009)	5	20	2.7	2.4	4	10	2.7	1.8	-	10	2.8	3.9
Anemias (280-285)	5	20	2.7	2.4	-	3	0.8	0.5	4	17	4.7	6.6
Complications of pregnancy, childbirth and puerperium (630-676)	-	11	1.5	1.3	-	-	-	-	5	11	3.0	4.3
All other causes		181	24.8	22.0		92	25.0	16.3		89	24.5	34.6
JAMAICA, 1984												
All causes		325	58.0	100.0		208	73.4	100.0		117	42.3	100.0
Symptoms and ill-defined conditions (780-799)		45	8.0	13.8		29	10.2	13.9		16	5.8	13.7
Total number of deaths from defined causes**		280	50.0	100.0		179	63.1	100.0		101	36.5	100.0
Accidents (E800-E949, E980-E989)	1	77	13.7	27.5	1	69	24.3	38.5	3	8	2.9	7.9
Malignant neoplasms (140-208)	2	41	7.3	14.6	2	22	7.8	12.3	2	19	6.9	18.8
Diseases of the heart (390-429)	3	40	7.1	14.3	3	19	6.7	10.6	1	21	7.6	20.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	10	1.8	3.6	4	9	3.2	5.0	-	1	0.4	1.0
Nephritis, nephrotic syndrome and nephrosis (580-589)	5	8	1.4	2.9	5	5	1.8	2.8	5	3	1.1	3.0
Complications of pregnancy, childbirth and puerperium (630-676)	-	7	1.2	2.5	-	-	-	-	4	7	2.5	6.9
Bronchitis, emphysema and asthma (490-493)	-	6	1.1	2.1	-	3	1.1	1.7	5	3	1.1	3.0
All other causes		91	16.2	32.5		52	18.3	29.1		39	14.1	38.6
MEXICO, 1986												
All causes		22052	129.6	100.0		15846	183.9	100.0		6083	72.2	100.0
Symptoms and ill-defined conditions (780-799)		646	3.8	2.9		271	3.1	1.7		232	2.8	3.8
Total number of deaths from defined causes**		21406	125.8	100.0		15575	180.8	100.0		5831	69.4	100.0
Accidents (E800-E949, E980-E989)	1	8918	52.4	41.7	1	7571	87.9	48.6	1	1347	16.0	23.1
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	4197	24.7	19.6	2	3882	45.1	24.9	5	315	3.7	5.4
Malignant neoplasms (140-208)	3	1008	5.9	4.7	3	572	6.6	3.7	3	436	5.2	7.5
Diseases of the heart (390-429)	4	796	4.7	3.7	5	397	4.6	2.5	4	399	4.7	6.8
Complications of pregnancy, childbirth and puerperium (630-676)	5	525	3.1	2.5	-	-	-	-	2	525	6.2	9.0
Suicide (E950-E959)	5	525	3.1	2.5	4	408	4.7	2.6	-	117	1.4	2.0
All other causes		5437	32.0	25.4		2745	31.9	17.6		2692	32.0	46.2
PANAMA, 1987												
All causes		451	93.8	100.0		322	132.5	100.0		129	54.2	100.0
Symptoms and ill-defined conditions (780-799)		31	6.4	6.9		13	5.3	4.0		18	7.6	14.0
Total number of deaths from defined causes**		420	87.3	100.0		309	127.1	100.0		111	46.7	100.0
Accidents (E800-E949, E980-E989)	1	181	37.6	43.1	1	156	64.2	50.5	1	25	10.5	22.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	50	10.4	11.9	2	47	19.3	15.2	-	3	1.3	2.7
Malignant neoplasms (140-208)	3	33	6.9	7.9	3	19	7.8	6.1	2	14	5.9	12.6
Suicide (E950-E959)	4	24	5.0	5.7	4	16	6.6	5.2	4	8	3.4	7.2
Diseases of the heart (390-429)	5	19	4.0	4.5	5	10	4.1	3.2	3	9	3.8	8.1
Influenza and pneumonia (480-487)	-	8	1.7	1.9	-	2	0.8	0.6	5	6	2.5	5.4
Complications of pregnancy, childbirth and puerperium (630-676)	-	8	1.7	1.9	-	-	-	-	4	8	3.4	7.2
All other causes		97	20.2	23.1		59	24.3	19.1		38	16.0	34.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e (*Cont.*).

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		493	106.6	100.0		275	118.4	100.0		218	94.7	100.0
Symptoms and ill-defined conditions (780-799)		57	12.3	11.6		31	13.4	11.3		26	11.3	11.9
Total number of deaths from defined causes**		436	94.3	100.0		244	105.1	100.0		192	83.4	100.0
Accidents (E800-E949, E980-E989)	1	145	31.4	33.3	1	103	44.4	42.2	1	42	18.2	21.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	42	9.1	9.6	2	38	16.4	15.6	-	4	1.7	2.1
Complications of pregnancy, childbirth and puerperium (630-676)	3	41	8.9	9.4	-	-	-	-	2	41	17.8	21.4
Malignant neoplasms (140-208)	4	34	7.4	7.8	3	20	8.6	8.2	3	14	6.1	7.3
Suicide (E950-E959)	5	22	4.8	5.0	4	10	4.3	4.1	4	12	5.2	6.3
Diseases of the heart (390-429)	-	18	3.9	4.1	5	9	3.9	3.7	5	9	3.9	4.7
Congenital anomalies (740-759)	-	16	3.5	3.7	-	7	3.0	2.9	5	9	3.9	4.7
All other causes		118	25.5	27.1		57	24.5	23.4		61	26.5	31.8
PERU, 1983												
All causes		3967	104.7	100.0		2240	116.6	100.0		1727	92.5	100.0
Symptoms and ill-defined conditions (780-799)		239	6.3	6.0		117	6.1	5.2		122	6.5	7.1
Total number of deaths from defined causes**		3728	98.4	100.0		2123	110.5	100.0		1605	85.9	100.0
Accidents (E800-E949, E980-E989)	1	1069	28.2	28.7	1	826	43.0	38.9	1	243	13.0	15.1
Tuberculosis (010-018)	2	422	11.1	11.3	2	222	11.6	10.5	2	200	10.7	12.5
Influenza and pneumonia (480-487)	3	324	8.6	8.7	3	174	9.1	8.2	3	150	8.0	9.3
Diseases of the heart (390-429)	4	173	4.6	4.6	5	78	4.1	3.7	5	95	5.1	5.9
Malignant neoplasms (140-208)	5	149	3.9	4.0	-	74	3.9	3.5	-	75	4.0	4.7
Complications of pregnancy, childbirth and puerperium (630-676)	-	136	3.6	3.6	-	-	-	-	4	136	7.3	8.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	115	3.0	3.1	4	97	5.0	4.6	-	18	1.0	1.1
All other causes		1340	35.4	35.9		652	33.9	30.7		688	36.8	42.9
PUERTO RICO, 1987												
All causes		589	84.9	100.0		445	127.5	100.0		144	41.8	100.0
Symptoms and ill-defined conditions (780-799)		3	0.4	0.5		-	-	-		3	0.9	2.1
Total number of deaths from defined causes**		586	84.5	100.0		445	127.5	100.0		141	40.9	100.0
Accidents (E800-E949, E980-E989)	1	245	35.3	41.8	1	199	57.0	44.7	1	46	13.3	32.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	130	18.7	22.2	2	119	34.1	26.7	3	11	3.2	7.8
Malignant neoplasms (140-208)	3	37	5.3	6.3	4	21	6.0	4.7	2	16	4.6	11.3
Suicide (E950-E959)	4	30	4.3	5.1	3	25	7.2	5.6	5	5	1.5	3.5
Diseases of the heart (390-429)	5	22	3.2	3.8	5	15	4.3	3.4	4	7	2.0	5.0
Influenza and pneumonia (480-487)	-	13	1.9	2.2	-	6	1.7	1.3	4	7	2.0	5.0
All other causes		109	15.7	18.6		60	17.2	13.5		49	14.2	34.8
SURINAME, 1985												
All causes		101	112.2	100.0		63	140.0	100.0		38	84.4	100.0
Symptoms and ill-defined conditions (780-799)		9	10.0	8.9		5	11.1	7.9		4	8.9	10.5
Total number of deaths from defined causes**		92	102.2	100.0		58	128.9	100.0		34	75.6	100.0
Suicide (E950-E959)	1	24	26.7	26.1	1	17	37.8	29.3	1	7	15.6	20.6
Accidents (E800-E949, E980-E989)	2	14	15.6	15.2	2	13	28.9	22.4	5	1	2.2	2.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	9	10.0	9.8	3	7	15.6	12.1	4	2	4.4	5.9
Malignant neoplasms (140-208)	4	6	6.7	6.5	4	3	6.7	5.2	3	3	6.7	8.8
Diseases of the heart (390-429)	5	4	4.4	4.3	-	1	2.2	1.7	3	3	6.7	8.8
Complications of pregnancy, childbirth and puerperium (630-676)	5	4	4.4	4.3	-	-	-	-	2	4	8.9	11.8
Cerebrovascular disease (430-438)	-	3	3.3	3.3	-	1	2.2	1.7	4	2	4.4	5.9
Nutritional deficiencies (260-269)	-	3	3.3	3.3	4	3	6.7	5.2	-	-	-	-
Congenital anomalies (740-759)	-	3	3.3	3.3	4	3	6.7	5.2	-	-	-	-

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e (*Cont.*).

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
SURINAME, 1985 (cont.)												
Typhoid fever (002.0)	-	2	2.2	2.2	-	-	-	-	4	2	4.4	5.9
Diabetes mellitus (250)	-	2	2.2	2.2	-	1	2.2	1.7	5	1	2.2	2.9
Influenza and pneumonia (480-487)	-	2	2.2	2.2	5	2	4.4	3.4	-	-	-	-
Mental disorders (290-319)	-	1	1.1	1.1	-	-	-	-	5	1	2.2	2.9
Meningitis (320-322)	-	1	1.1	1.1	-	-	-	-	5	1	2.2	2.9
All other causes		14	15.6	15.2		7	15.6	12.1		7	15.6	20.6
TRINIDAD AND TOBAGO, 1986												
All causes		272	104.8	100.0		170	131.5	100.0		102	78.3	100.0
Symptoms and ill-defined conditions (780-799)		17	6.5	6.3		9	7.0	5.3		8	6.1	7.8
Total number of deaths from defined causes**		255	98.2	100.0		161	124.5	100.0		94	72.1	100.0
Accidents (E800-E949, E980-E989)	1	99	38.1	38.8	1	84	65.0	52.2	1	15	11.5	16.0
Suicide (E950-E959)	2	25	9.6	9.8	2	13	10.1	8.1	2	12	9.2	12.8
Malignant neoplasms (140-208)	3	18	6.9	7.1	4	9	7.0	5.6	3	9	6.9	9.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	15	5.8	5.9	3	11	8.5	6.8	5	4	3.1	4.3
Diseases of the heart (390-429)	5	12	4.6	4.7	-	3	2.3	1.9	3	9	6.9	9.6
Influenza and pneumonia (480-487)	-	7	2.7	2.7	5	5	3.9	3.1	-	2	1.5	2.1
Complications of pregnancy, childbirth and puerperium (630-676)	-	6	2.3	2.4	-	-	-	-	4	6	4.6	6.4
Cerebrovascular disease (430-438)	-	6	2.3	2.4	5	5	3.9	3.1	-	1	0.8	1.1
All other causes		67	25.8	26.3		31	24.0	19.3		36	27.6	38.3
UNITED STATES, 1987												
All causes		38023	99.4	100.0		28231	146.1	100.0		9792	51.7	100.0
Symptoms and ill-defined conditions (780-799)		880	2.3	2.3		603	3.1	2.1		277	1.5	2.8
Total number of deaths from defined causes**		37143	97.1	100.0		27628	143.0	100.0		9515	50.3	100.0
Accidents (E800-E949, E980-E989)	1	19110	50.0	51.4	1	14614	75.6	52.9	1	4496	23.8	47.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	5356	14.0	14.4	2	4223	21.9	15.3	2	1133	6.0	11.9
Suicide (E950-E959)	3	4924	12.9	13.3	3	4109	21.3	14.9	3	815	4.3	8.6
Malignant neoplasms (140-208)	4	1939	5.1	5.2	4	1166	6.0	4.2	4	773	4.1	8.1
Diseases of the heart (390-429)	5	1077	2.8	2.9	5	680	3.5	2.5	5	397	2.1	4.2
All other causes		4737	12.4	12.8		2836	14.7	10.3		1901	10.0	20.0
URUGUAY, 1987												
All causes		358	72.4	100.0		245	97.7	100.0		113	46.4	100.0
Symptoms and ill-defined conditions (780-799)		14	2.8	3.9		10	4.0	4.1		4	1.6	3.5
Total number of deaths from defined causes**		344	69.6	100.0		235	93.7	100.0		109	44.7	100.0
Accidents (E800-E949, E980-E989)	1	174	35.2	50.6	1	139	55.4	59.1	1	35	14.4	32.1
Malignant neoplasms (140-208)	2	32	6.5	9.3	2	22	8.8	9.4	2	10	4.1	9.2
Suicide (E950-E959)	3	25	5.1	7.3	3	18	7.2	7.7	5	7	2.9	6.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	19	3.8	5.5	4	11	4.4	4.7	4	8	3.3	7.3
Diseases of the heart (390-429)	5	15	3.0	4.4	5	6	2.4	2.6	3	9	3.7	8.3
Cerebrovascular disease (430-438)	-	8	1.6	2.3	5	6	2.4	2.6	-	2	0.8	1.8
Influenza and pneumonia (480-487)	-	7	1.4	2.0	5	6	2.4	2.6	-	1	0.4	0.9
All other causes		64	12.9	18.6		27	10.8	11.5		37	15.2	33.9
VENEZUELA, 1987												
All causes		4275	114.1	100.0		3118	163.9	100.0		1157	62.8	100.0
Symptoms and ill-defined conditions (780-799)		240	6.4	5.6		134	7.0	4.3		106	5.8	9.2
Total number of deaths from defined causes**		4035	107.7	100.0		2984	156.8	100.0		1051	57.0	100.0
Accidents (E800-E949, E980-E989)	1	1900	50.7	47.1	1	1610	84.6	54.0	1	290	15.7	27.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	509	13.6	12.6	2	476	25.0	16.0	-	33	1.8	3.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10e (*Cont.*).

Five leading causes of death in the population 15 to 24 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 15 - 24 years				Male, 15 - 24 years				Female, 15 - 24 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
VENEZUELA, 1987 (cont.)												
Malignant neoplasms (140-208)	3	266	7.1	6.6	4	158	8.3	5.3	2	108	5.9	10.3
Suicide (E950-E959)	4	220	5.9	5.5	3	180	9.5	6.0	-	40	2.2	3.8
Diseases of the heart (390-429)	5	123	3.3	3.0	5	66	3.5	2.2	4	57	3.1	5.4
Influenza and pneumonia (480-487)	-	107	2.9	2.7	5	66	3.5	2.2	5	41	2.2	3.9
Complications of pregnancy, childbirth and puerperium (630-676)	-	85	2.3	2.1	-	-	-	-	3	85	4.6	8.1
All other causes		825	22.0	20.4		428	22.5	14.3		397	21.5	37.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f.

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		15727	193.5	100.0		9690	236.3	100.0		5942	147.7	100.0
Symptoms and ill-defined conditions (780-799)		387	4.8	2.5		237	5.8	2.4		148	3.7	2.5
Total number of deaths from defined causes**		15340	188.8	100.0		9453	230.5	100.0		5794	144.0	100.0
Accidents (E800-E949, E980-E989)	1	2871	35.3	18.7	1	2340	57.1	24.8	3	512	12.7	8.8
Diseases of the heart (390-429)	2	2824	34.8	18.4	2	1807	44.1	19.1	2	998	24.8	17.2
Malignant neoplasms (140-208)	3	2747	33.8	17.9	3	1236	30.1	13.1	1	1499	37.3	25.9
Cerebrovascular disease (430-438)	4	1138	14.0	7.4	5	632	15.4	6.7	4	501	12.4	8.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	790	9.7	5.1	4	671	16.4	7.1	-	110	2.7	1.9
Complications of pregnancy, childbirth and puerperium (630-676)	-	254	3.1	1.7	-	-	-	-	5	254	6.3	4.4
All other causes		4716	58.0	30.7		2767	67.5	29.3		1920	47.7	33.1
BAHAMAS, 1987												
All causes		200	289.1	100.0		116	340.5	100.0		67	190.8	100.0
Symptoms and ill-defined conditions (780-799)		5	7.2	2.5		3	8.8	2.6		2	5.7	3.0
Total number of deaths from defined causes**		195	281.8	100.0		113	331.7	100.0		65	185.1	100.0
Accidents (E800-E949, E980-E989)	1	46	66.5	23.6	1	36	105.7	31.9	2	10	28.5	15.4
Malignant neoplasms (140-208)	2	28	40.5	14.4	2	15	44.0	13.3		13	37.0	20.0
Diseases of the heart (390-429)	3	14	20.2	7.2	4	7	20.5	6.2	3	7	19.9	10.8
Chronic liver disease and cirrhosis (571)	4	12	17.3	6.2	3	8	23.5	7.1	4	4	11.4	6.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	8	11.6	4.1	5	6	17.6	5.3	-	2	5.7	3.1
Cerebrovascular disease (430-438)	-	6	8.7	3.1	-	2	5.9	1.8	4	4	11.4	6.2
Influenza and pneumonia (480-487)	-	5	7.2	2.6	-	2	5.9	1.8	5	3	8.5	4.6
Diabetes mellitus (250)	-	4	5.8	2.1	-	1	2.9	0.9	5	3	8.5	4.6
All other causes		72	104.1	36.9		36	105.7	31.9		19	54.1	29.2
BARBADOS, 1988												
All causes		118	165.7	100.0		70	202.3	100.0		48	131.1	100.0
Symptoms and ill-defined conditions (780-799)		2	2.8	1.7		2	5.8	2.9		-	-	-
Total number of deaths from defined causes**		116	162.9	100.0		68	196.5	100.0		48	131.1	100.0
Accidents (E800-E949, E980-E989)	1	22	30.9	19.0	1	20	57.8	29.4	4	2	5.5	4.2
Malignant neoplasms (140-208)	2	20	28.1	17.2	3	4	11.6	5.9	1	16	43.7	33.3
Diseases of the heart (390-429)	3	16	22.5	13.8	2	8	23.1	11.8	2	8	21.9	16.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	8	11.2	6.9	3	4	11.6	5.9	5	4	10.9	8.3
Suicide (E950-E959)	4	8	11.2	6.9	2	8	23.1	11.8	-	-	-	-
Cerebrovascular disease (430-438)	5	4	5.6	3.4	4	3	8.7	4.4	5	1	2.7	2.1
Bronchitis, emphysema and asthma (490-493)	5	4	5.6	3.4	4	3	8.7	4.4	5	1	2.7	2.1
Anemias (280-285)	-	3	4.2	2.6	5	2	5.8	2.9	5	1	2.7	2.1
Influenza and pneumonia (480-487)	-	3	4.2	2.6	-	1	2.9	1.5	4	2	5.5	4.2
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	2	2.8	1.7	-	1	2.9	1.5	5	1	2.7	2.1
Chronic liver disease and cirrhosis (571)	-	2	2.8	1.7	5	2	5.8	2.9	-	-	-	-
Viral hepatitis (070)	-	1	1.4	0.9	-	-	-	-	5	1	2.7	2.1
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	-	1	1.4	0.9	-	-	-	-	5	1	2.7	2.1
All other causes		22	30.9	19.0		12	34.7	17.6		10	27.3	20.8
BRAZIL (AREA OF INFORMATION), 1986												
All causes		105100	287.9	100.0		73466	404.4	100.0		31536	172.0	100.0
Symptoms and ill-defined conditions (780-799)		15104	41.4	14.4		10109	55.6	13.8		4979	27.2	15.8
Total number of deaths from defined causes**		89996	246.6	100.0		63357	348.8	100.0		26557	144.8	100.0
Accidents (E800-E949, E980-E989)	1	25126	68.8	27.9	1	21394	117.8	33.8	3	3705	20.2	14.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
BRAZIL (AREA OF INFORMATION), 1986 (cont.)												
Diseases of the heart (390-429)	2	11547	31.6	12.8	3	7136	39.3	11.3	1	4404	24.0	16.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	9778	26.8	10.9	2	8983	49.5	14.2	-	785	4.3	3.0
Malignant neoplasms (140-208)	4	7806	21.4	8.7	5	3443	19.0	5.4	2	4353	23.7	16.4
Cerebrovascular disease (430-438)	5	6658	18.2	7.4	4	3562	19.6	5.6	4	3089	16.8	11.6
Complications of pregnancy, childbirth and puerperium (630-676)	-	1154	3.2	1.3	-	-	-	-	5	1154	6.3	4.3
All other causes		27927	76.5	31.0		18839	103.7	29.7		9067	49.5	34.1
CANADA, 1988												
All causes		9969	118.6	100.0		6739	160.0	100.0		3230	77.0	100.0
Symptoms and ill-defined conditions (780-799)		293	3.5	2.9		207	4.9	3.1		86	2.0	2.7
Total number of deaths from defined causes**		9676	115.1	100.0		6532	155.1	100.0		3144	74.9	100.0
Accidents (E800-E949, E980-E989)	1	2542	30.2	26.3	1	2030	48.2	31.1	2	512	12.2	16.3
Malignant neoplasms (140-208)	2	2106	25.0	21.8	3	904	21.5	13.8	1	1202	28.6	38.2
Suicide (E950-E959)	3	1544	18.4	16.0	2	1185	28.1	18.1	3	359	8.6	11.4
Diseases of the heart (390-429)	4	1001	11.9	10.3	4	791	18.8	12.1	4	210	5.0	6.7
Cerebrovascular disease (430-438)	5	298	3.6	3.1	-	135	3.2	2.1	5	164	3.9	5.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	240	2.9	2.5	5	161	3.8	2.5	-	79	1.9	2.5
All other causes		1944	23.1	20.1		1326	31.5	20.3		618	14.7	19.7
CHILE, 1987												
All causes		6105	167.8	100.0		4121	228.4	100.0		1984	108.2	100.0
Symptoms and ill-defined conditions (780-799)		193	5.3	3.2		115	6.4	2.8		78	4.3	3.9
Total number of deaths from defined causes**		5912	162.5	100.0		4006	222.0	100.0		1906	104.0	100.0
Accidents (E800-E949, E980-E989)	1	2280	62.7	38.6	1	1955	108.3	48.8	2	325	17.7	17.1
Malignant neoplasms (140-208)	2	999	27.5	16.9	2	417	23.1	10.4	1	582	31.7	30.5
Diseases of the heart (390-429)	3	346	9.5	5.9	5	215	11.9	5.4	3	131	7.1	6.9
Chronic liver disease and cirrhosis (571)	4	286	7.9	4.8	4	218	12.1	5.4	-	68	3.7	3.6
Suicide (E950-E959)	4	286	7.9	4.8	3	237	13.1	5.9	-	49	2.7	2.6
Cerebrovascular disease (430-438)	5	214	5.9	3.6	-	94	5.2	2.3	4	120	6.5	6.3
Complications of pregnancy, childbirth and puerperium (630-676)	-	88	2.4	1.5	-	-	-	-	5	88	4.8	4.6
All other causes		1413	38.8	23.9		870	48.2	21.7		543	29.6	28.5
COLOMBIA, 1984												
All causes		18288	248.8	100.0		12702	341.1	100.0		5586	154.0	100.0
Symptoms and ill-defined conditions (780-799)		599	8.1	3.3		323	8.7	2.5		276	7.6	4.9
Total number of deaths from defined causes**		17689	240.6	100.0		12379	332.4	100.0		5310	146.4	100.0
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	1	4867	66.2	27.5	1	4598	123.5	37.1	-	269	7.4	5.1
Accidents (E800-E949, E980-E989)	2	4290	58.4	24.3	2	3674	98.7	29.7	3	616	17.0	11.6
Diseases of the heart (390-429)	3	1802	24.5	10.2	3	995	26.7	8.0	2	807	22.3	15.2
Malignant neoplasms (140-208)	4	1758	23.9	9.9	4	650	17.5	5.3	1	1108	30.5	20.9
Cerebrovascular disease (430-438)	5	751	10.2	4.2	-	312	8.4	2.5	4	439	12.1	8.3
Complications of pregnancy, childbirth and puerperium (630-676)	-	407	5.5	2.3	-	-	-	-	5	407	11.2	7.7
Suicide (E950-E959)	-	383	5.2	2.2	5	318	8.5	2.6	-	65	1.8	1.2
All other causes		3431	46.7	19.4		1832	49.2	14.8		1599	44.1	30.1
COSTA RICA, 1988												
All causes		1041	136.3	100.0		666	172.6	100.0		375	99.2	100.0
Symptoms and ill-defined conditions (780-799)		8	1.0	0.8		5	1.3	0.8		3	0.8	0.8
Total number of deaths from defined causes**		1033	135.2	100.0		661	171.3	100.0		372	98.4	100.0
Accidents (E800-E949, E980-E989)	1	267	35.0	25.8	1	220	57.0	33.3	2	47	12.4	12.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
COSTA RICA, 1988 (cont.)												
Malignant neoplasms (140-208)	2	223	29.2	21.6	2	87	22.6	13.2	1	136	36.0	36.6
Diseases of the heart (390-429)	3	108	14.1	10.5	3	72	18.7	10.9	3	36	9.5	9.7
Suicide (E950-E959)	4	74	9.7	7.2	4	65	16.8	9.8	-	9	2.4	2.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	54	7.1	5.2	5	48	12.4	7.3	-	6	1.6	1.6
Chronic liver disease and cirrhosis (571)	-	51	6.7	4.9	-	36	9.3	5.4	5	15	4.0	4.0
Cerebrovascular disease (430-438)	-	30	3.9	2.9	-	11	2.9	1.7	4	19	5.0	5.1
All other causes		226	29.6	21.9		122	31.6	18.5		104	27.5	28.0
CUBA, 1988												
All causes		5459	199.5	100.0		3315	238.3	100.0		2144	159.4	100.0
Symptoms and ill-defined conditions (780-799)		42	1.5	0.8		33	2.4	1.0		9	0.7	0.4
Total number of deaths from defined causes**		5417	198.0	100.0		3282	236.0	100.0		2135	158.7	100.0
All accidents and violence (E800-E999)	1	2449	89.5	45.2	1	1785	128.3	54.4	1	664	49.4	31.1
Malignant neoplasms (140-208)	2	804	29.4	14.8	3	343	24.7	10.5	2	461	34.3	21.6
Diseases of the heart (390-429)	3	708	25.9	13.1	2	458	32.9	14.0	3	250	18.6	11.7
Cerebrovascular disease (430-438)	4	269	9.8	5.0	4	131	9.4	4.0	4	138	10.3	6.5
Bronchitis, emphysema and asthma (490-493)	5	118	4.3	2.2	-	41	2.9	1.2	5	77	5.7	3.6
Diabetes mellitus (250)	-	95	3.5	1.8	5	49	3.5	1.5	-	46	3.4	2.2
All other causes		974	35.6	18.0		475	34.2	14.5		499	37.1	23.4
DOMINICAN REPUBLIC, 1985												
All causes		2605	169.9	100.0		1532	199.8	100.0		1073	140.0	100.0
Symptoms and ill-defined conditions (780-799)		287	18.7	11.0		148	19.3	9.7		139	18.1	13.0
Total number of deaths from defined causes**		2318	151.2	100.0		1384	180.5	100.0		934	121.8	100.0
Accidents (E800-E949, E980-E989)	1	523	34.1	22.6	1	441	57.5	31.9	4	82	10.7	8.8
Diseases of the heart (390-429)	2	312	20.3	13.5	2	158	20.6	11.4	1	154	20.1	16.5
Malignant neoplasms (140-208)	3	218	14.2	9.4	5	81	10.6	5.9	2	137	17.9	14.7
Tuberculosis (010-018)	4	187	12.2	8.1	4	99	12.9	7.2	3	88	11.5	9.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	147	9.6	6.3	3	131	17.1	9.5	-	16	2.1	1.7
Cerebrovascular disease (430-438)	-	117	7.6	5.0	-	47	6.1	3.4	5	70	9.1	7.5
All other causes		814	53.1	35.1		427	55.7	30.9		387	50.5	41.4
ECUADOR, 1987												
All causes		5707	242.7	100.0		3628	307.0	100.0		2079	177.7	100.0
Symptoms and ill-defined conditions (780-799)		594	25.3	10.4		315	26.7	8.7		279	23.8	13.4
Total number of deaths from defined causes**		5113	217.4	100.0		3313	280.4	100.0		1800	153.9	100.0
Accidents (E800-E949, E980-E989)	1	1346	57.2	26.3	1	1144	96.8	34.5	3	202	17.3	11.2
Malignant neoplasms (140-208)	2	488	20.8	9.5	5	186	15.7	5.6	1	302	25.8	16.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	478	20.3	9.3	2	447	37.8	13.5	-	31	2.6	1.7
Diseases of the heart (390-429)	4	383	16.3	7.5	3	212	17.9	6.4	4	171	14.6	9.5
Tuberculosis (010-018)	5	340	14.5	6.6	4	210	17.8	6.3	5	130	11.1	7.2
Complications of pregnancy, childbirth and puerperium (630-676)	-	207	8.8	4.0	-	-	-	-	2	207	17.7	11.5
All other causes		1871	79.6	36.6		1114	94.3	33.6		757	64.7	42.1
EL SALVADOR, 1984												
All causes		3891	370.4	100.0		2834	535.6	100.0		1057	202.7	100.0
Symptoms and ill-defined conditions (780-799)		498	47.4	12.8		261	49.3	9.2		237	45.4	22.4
Total number of deaths from defined causes**		3393	323.0	100.0		2573	486.3	100.0		820	157.2	100.0
Accidents (E800-E949, E980-E989)	1	917	87.3	27.0	1	816	154.2	31.7	2	101	19.4	12.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	797	75.9	23.5	2	735	138.9	28.6	4	62	11.9	7.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
EL SALVADOR, 1984 (cont.)												
Mental disorders (290-319)	3	255	24.3	7.5	3	245	46.3	9.5	-	10	1.9	1.2
Diseases of the heart (390-429)	4	215	20.5	6.3	5	121	22.9	4.7	3	94	18.0	11.5
Suicide (E950-E959)	5	182	17.3	5.4	4	145	27.4	5.6	-	37	7.1	4.5
Malignant neoplasms (140-208)	-	160	15.2	4.7	-	54	10.2	2.1	1	106	20.3	12.9
Complications of pregnancy, childbirth and puerperium (630-676)	-	56	5.3	1.7	-	-	-	-	5	56	10.7	6.8
All other causes		811	77.2	23.9		457	86.4	17.8		354	67.9	43.2
GUADELOUPE, 1981												
All causes		186	244.1	100.0		115	314.2	100.0		71	179.3	100.0
Symptoms and ill-defined conditions (780-799)		10	13.1	5.4		5	13.7	4.3		5	12.6	7.0
Total number of deaths from defined causes**		176	231.0	100.0		110	300.5	100.0		66	166.7	100.0
Accidents (E800-E949, E980-E989)	1	63	82.7	35.8	1	45	123.0	40.9	1	18	45.5	27.3
Malignant neoplasms (140-208)	2	19	24.9	10.8	3	9	24.6	8.2	2	10	25.3	15.2
Diseases of the heart (390-429)	3	13	17.1	7.4	5	7	19.1	6.4	3	6	15.2	9.1
Mental disorders (290-319)	4	11	14.4	6.3	4	8	21.9	7.3	5	3	7.6	4.5
Chronic liver disease and cirrhosis (571)	4	11	14.4	6.3	2	10	27.3	9.1	-	1	2.5	1.5
Suicide (E950-E959)	5	8	10.5	4.5	5	7	19.1	6.4	-	1	2.5	1.5
Cerebrovascular disease (430-438)	5	8	10.5	4.5	-	5	13.7	4.5	5	3	7.6	4.5
Diabetes mellitus (250)	-	5	6.6	2.8	-	1	2.7	0.9	4	4	10.1	6.1
All other causes		38	49.9	21.6		18	49.2	16.4		20	50.5	30.3
GUATEMALA, 1984												
All causes		6680	403.1	100.0		4020	483.2	100.0		2660	322.3	100.0
Symptoms and ill-defined conditions (780-799)		632	38.1	9.5		296	35.6	7.4		336	40.7	12.6
Total number of deaths from defined causes**		6048	365.0	100.0		3724	447.6	100.0		2324	281.6	100.0
Accidents (E800-E949, E980-E989)	1	1432	86.4	23.7	1	1272	152.9	34.2	5	160	19.4	6.9
Intestinal infections due to specified organisms and ill defined (007-009)	2	732	44.2	12.1	2	404	48.6	10.8	1	328	39.7	14.1
Influenza and pneumonia (480-487)	3	596	36.0	9.9	3	300	36.1	8.1	2	296	35.9	12.7
Malignant neoplasms (140-208)	4	340	20.5	5.6	-	112	13.5	3.0	3	228	27.6	9.8
Diseases of the heart (390-429)	5	284	17.1	4.7	-	144	17.3	3.9	-	140	17.0	6.0
Tuberculosis (010-018)	-	256	15.4	4.2	5	160	19.2	4.3	-	96	11.6	4.1
Chronic liver disease and cirrhosis (571)	-	228	13.8	3.8	4	184	22.1	4.9	-	44	5.3	1.9
Mental disorders (290-319)	-	176	10.6	2.9	5	160	19.2	4.3	-	16	1.9	0.7
Complications of pregnancy, childbirth and puerperium (630-676)	-	164	9.9	2.7	-	-	-	-	4	164	19.9	7.1
All other causes		1840	111.0	30.4		988	118.8	26.5		852	103.2	36.7
GUYANA, 1984												
All causes		538	222.6	100.0		361	301.1	100.0		177	145.3	100.0
Symptoms and ill-defined conditions (780-799)		44	18.2	8.2		28	23.4	7.8		16	13.1	9.0
Total number of deaths from defined causes**		494	204.4	100.0		333	277.7	100.0		161	132.2	100.0
Accidents (E800-E949, E980-E989)	1	93	38.5	18.8	1	79	65.9	23.7	3	14	11.5	8.7
Diseases of the heart (390-429)	2	75	31.0	15.2	2	46	38.4	13.8	1	29	23.8	18.0
Malignant neoplasms (140-208)	3	35	14.5	7.1	-	15	12.5	4.5	2	20	16.4	12.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	33	13.7	6.7	3	29	24.2	8.7	-	4	3.3	2.5
Chronic liver disease and cirrhosis (571)	5	32	13.2	6.5	4	27	22.5	8.1	-	5	4.1	3.1
Cerebrovascular disease (430-438)	-	29	12.0	5.9	5	24	20.0	7.2	-	5	4.1	3.1
Diabetes mellitus (250)	-	15	6.2	3.0	-	8	6.7	2.4	5	7	5.7	4.3
Complications of pregnancy, childbirth and puerperium (630-676)	-	12	5.0	2.4	-	-	-	-	4	12	9.9	7.5
All other causes		170	70.3	34.4		105	87.6	31.5		65	53.4	40.4

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
HONDURAS, 1981												
All causes		2038	259.3	100.0		1299	329.2	100.0		739	188.8	100.0
Symptoms and ill-defined conditions (780-799)		433	55.1	21.2		180	45.6	13.9		253	64.6	34.2
Total number of deaths from defined causes**		1605	204.2	100.0		1119	283.6	100.0		486	124.1	100.0
All accidents and violence (E800-E999)	1	814	103.5	50.7	1	746	189.1	66.7	2	68	17.4	14.0
Diseases of the heart (390-429)	2	156	19.8	9.7	2	81	20.5	7.2	1	75	19.2	15.4
Malignant neoplasms (140-208)	3	87	11.1	5.4	-	20	5.1	1.8	3	67	17.1	13.8
Cerebrovascular disease (430-438)	4	64	8.1	4.0	5	25	6.3	2.2	4	39	10.0	8.0
Intestinal infections due to specified organisms and ill defined (007-009)	5	38	4.8	2.4	-	18	4.6	1.6	-	20	5.1	4.1
Chronic liver disease and cirrhosis (571)	-	34	4.3	2.1	4	29	7.3	2.6	-	5	1.3	1.0
Mental disorders (290-319)	-	33	4.2	2.1	3	31	7.9	2.8	-	2	0.5	0.4
Anemias (280-285)	-	27	3.4	1.7	-	5	1.3	0.4	5	22	5.6	4.5
All other causes		352	44.8	21.9		164	41.6	14.7		188	48.0	38.7
JAMAICA, 1984												
All causes		794	159.6	100.0		467	192.7	100.0		327	128.2	100.0
Symptoms and ill-defined conditions (780-799)		97	19.5	12.2		57	23.5	12.2		40	15.7	12.2
Total number of deaths from defined causes**		697	140.1	100.0		410	169.2	100.0		287	112.5	100.0
Malignant neoplasms (140-208)	1	162	32.6	23.2	2	62	25.6	15.1	1	100	39.2	34.8
Accidents (E800-E949, E980-E989)	2	115	23.1	16.5	1	96	39.6	23.4	3	19	7.4	6.6
Diseases of the heart (390-429)	3	84	16.9	12.1	3	41	16.9	10.0	2	43	16.9	15.0
Cerebrovascular disease (430-438)	4	54	10.9	7.7	4	39	16.1	9.5	4	15	5.9	5.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	24	4.8	3.4	5	22	9.1	5.4	-	2	0.8	0.7
Diabetes mellitus (250)	-	18	3.6	2.6	-	11	4.5	2.7	5	7	2.7	2.4
All other causes		240	48.3	34.4		139	57.4	33.9		101	39.6	35.2
MARTINIQUE, 1985												
All causes		119	139.7	100.0		71	170.7	100.0		48	110.1	100.0
Symptoms and ill-defined conditions (780-799)		15	17.6	12.6		12	28.8	16.9		3	6.9	6.3
Total number of deaths from defined causes**		104	122.1	100.0		59	141.8	100.0		45	103.2	100.0
Accidents (E800-E949, E980-E989)	1	25	29.3	24.0	1	19	45.7	32.2	3	6	13.8	13.3
Malignant neoplasms (140-208)	2	19	22.3	18.3	3	5	12.0	8.5	1	14	32.1	31.1
Diseases of the heart (390-429)	3	14	16.4	13.5	2	7	16.8	11.9	2	7	16.1	15.6
Cerebrovascular disease (430-438)	4	7	8.2	6.7	4	3	7.2	5.1	4	4	9.2	8.9
Mental disorders (290-319)	5	6	7.0	5.8	3	5	12.0	8.5	-	1	2.3	2.2
Suicide (E950-E959)	-	5	5.9	4.8	5	2	4.8	3.4	5	3	6.9	6.7
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	-	3	3.5	2.9	5	2	4.8	3.4	-	1	2.3	2.2
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	3	3.5	2.9	4	3	7.2	5.1	-	-	-	-
All other causes		22	25.8	21.2		13	31.3	22.0		9	20.6	20.0
MEXICO, 1986												
All causes		50753	269.4	100.0		35375	377.4	100.0		15114	159.7	100.0
Symptoms and ill-defined conditions (780-799)		1408	7.5	2.8		610	6.5	1.7		534	5.6	3.5
Total number of deaths from defined causes**		49345	262.0	100.0		34765	370.9	100.0		14580	154.1	100.0
Accidents (E800-E949, E980-E989)	1	13975	74.2	28.3	1	12102	129.1	34.8	2	1873	19.8	12.8
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	7209	38.3	14.6	2	6728	71.8	19.4	-	481	5.1	3.3
Chronic liver disease and cirrhosis (571)	3	4031	21.4	8.2	3	3403	36.3	9.8	5	628	6.6	4.3
Malignant neoplasms (140-208)	4	3828	20.3	7.8	-	1326	14.1	3.8	1	2502	26.4	17.2
Diseases of the heart (390-429)	5	3323	17.6	6.7	4	1844	19.7	5.3	3	1479	15.6	10.1
Mental disorders (290-319)	-	1524	8.1	3.1	5	1429	15.2	4.1	-	95	1.0	0.7
Complications of pregnancy, childbirth and puerperium (630-676)	-	1101	5.8	2.2	-	-	-	-	4	1101	11.6	7.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
MEXICO, 1986 (cont.)												
All other causes		14354	76.2	29.1		7933	84.6	22.8		6421	67.9	44.0
PANAMA, 1987												
All causes		927	161.3	100.0		614	208.8	100.0		313	111.5	100.0
Symptoms and ill-defined conditions (780-799)		55	9.6	5.9		29	9.9	4.7		26	9.3	8.3
Total number of deaths from defined causes**		872	151.7	100.0		585	198.9	100.0		287	102.3	100.0
Accidents (E800-E949, E980-E989)	1	266	46.3	30.5	1	241	81.9	41.2	3	25	8.9	8.7
Malignant neoplasms (140-208)	2	130	22.6	14.9	3	48	16.3	8.2	1	82	29.2	28.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	3	86	15.0	9.9	2	76	25.8	13.0	-	10	3.6	3.5
Diseases of the heart (390-429)	4	79	13.7	9.1	4	40	13.6	6.8	2	39	13.9	13.6
Tuberculosis (010-018)	5	39	6.8	4.5	-	24	8.2	4.1	4	15	5.3	5.2
Suicide (E950-E959)	-	34	5.9	3.9	5	25	8.5	4.3	-	9	3.2	3.1
Complications of pregnancy, childbirth and puerperium (630-676)	-	14	2.4	1.6	-	-	-	-	5	14	5.0	4.9
All other causes		224	39.0	25.7		131	44.5	22.4		93	33.1	32.4
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		1084	197.1	100.0		610	223.0	100.0		474	171.4	100.0
Symptoms and ill-defined conditions (780-799)		142	25.8	13.1		66	24.1	10.8		76	27.5	16.0
Total number of deaths from defined causes**		942	171.3	100.0		544	198.9	100.0		398	143.9	100.0
Accidents (E800-E949, E980-E989)	1	170	30.9	18.0	1	148	54.1	27.2	5	22	8.0	5.5
Malignant neoplasms (140-208)	2	124	22.5	13.2	4	46	16.8	8.5	2	78	28.2	19.6
Diseases of the heart (390-429)	3	113	20.5	12.0	3	61	22.3	11.2	3	52	18.8	13.1
Complications of pregnancy, childbirth and puerperium (630-676)	4	89	16.2	9.4	-	-	-	-	1	89	32.2	22.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	77	14.0	8.2	2	74	27.1	13.6	-	3	1.1	0.8
Cerebrovascular disease (430-438)	-	60	10.9	6.4	5	33	12.1	6.1	4	27	9.8	6.8
All other causes		309	56.2	32.8		182	66.5	33.5		127	45.9	31.9
PERU, 1983												
All causes		7828	173.1	100.0		4222	184.9	100.0		3606	161.1	100.0
Symptoms and ill-defined conditions (780-799)		465	10.3	5.9		210	9.2	5.0		255	11.4	7.1
Total number of deaths from defined causes**		7363	162.8	100.0		4012	175.7	100.0		3351	149.7	100.0
Accidents (E800-E949, E980-E989)	1	1482	32.8	20.1	1	1210	53.0	30.2	5	272	12.2	8.1
Tuberculosis (010-018)	2	983	21.7	13.4	2	562	24.6	14.0	1	421	18.8	12.6
Malignant neoplasms (140-208)	3	605	13.4	8.2	5	199	8.7	5.0	3	406	18.1	12.1
Influenza and pneumonia (480-487)	4	599	13.2	8.1	3	299	13.1	7.5	4	300	13.4	9.0
Diseases of the heart (390-429)	5	490	10.8	6.7	4	230	10.1	5.7	-	260	11.6	7.8
Complications of pregnancy, childbirth and puerperium (630-676)	-	409	9.0	5.6	-	-	-	-	2	409	18.3	12.2
All other causes		2795	61.8	38.0		1512	66.2	37.7		1283	57.3	38.3
PUERTO RICO, 1987												
All causes		2369	248.6	100.0		1781	398.8	100.0		588	116.2	100.0
Symptoms and ill-defined conditions (780-799)		12	1.3	0.5		8	1.8	0.4		4	0.8	0.7
Total number of deaths from defined causes**		2357	247.4	100.0		1773	397.0	100.0		584	115.4	100.0
Accidents (E800-E949, E980-E989)	1	467	49.0	19.8	1	393	88.0	22.2	2	74	14.6	12.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	2	269	28.2	11.4	2	239	53.5	13.5	4	30	5.9	5.1
Diseases of the heart (390-429)	3	242	25.4	10.3	3	168	37.6	9.5	2	74	14.6	12.7
Malignant neoplasms (140-208)	4	196	20.6	8.3	-	76	17.0	4.3	1	120	23.7	20.5
Chronic liver disease and cirrhosis (571)	5	148	15.5	6.3	4	129	28.9	7.3	-	19	3.8	3.3
Suicide (E950-E959)	-	111	11.6	4.7	5	96	21.5	5.4	-	15	3.0	2.6
Influenza and pneumonia (480-487)	-	93	9.8	3.9	-	60	13.4	3.4	3	33	6.5	5.7

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PUERTO RICO, 1987 (cont.)												
Cerebrovascular disease (430-438)	-	44	4.6	1.9	-	23	5.2	1.3	5	21	4.1	3.6
All other causes		787	82.6	33.4		589	131.9	33.2		198	39.1	33.9
SURINAME, 1985												
All causes		201	245.1	100.0		141	361.5	100.0		60	139.5	100.0
Symptoms and ill-defined conditions (780-799)		9	11.0	4.5		8	20.5	5.7		1	2.3	1.7
Total number of deaths from defined causes**		192	234.1	100.0		133	341.0	100.0		59	137.2	100.0
Accidents (E800-E949, E980-E989)	1	43	52.4	22.4	1	35	89.7	26.3	3	8	18.6	13.6
Diseases of the heart (390-429)	2	32	39.0	16.7	2	23	59.0	17.3	2	9	20.9	15.3
Suicide (E950-E959)	3	26	31.7	13.5	2	23	59.0	17.3	5	3	7.0	5.1
Malignant neoplasms (140-208)	4	17	20.7	8.9	5	4	10.3	3.0	1	13	30.2	22.0
Diabetes mellitus (250)	5	11	13.4	5.7	3	7	17.9	5.3	4	4	9.3	6.8
Chronic liver disease and cirrhosis (571)	-	9	11.0	4.7	3	7	17.9	5.3	-	2	4.7	3.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	-	8	9.8	4.2	4	6	15.4	4.5	-	2	4.7	3.4
Influenza and pneumonia (480-487)	-	5	6.1	2.6	5	4	10.3	3.0	-	1	2.3	1.7
Mental disorders (290-319)	-	4	4.9	2.1	5	4	10.3	3.0	-	-	-	-
All other causes		37	45.1	19.3		20	51.3	15.0		17	39.5	28.8
TRINIDAD AND TOBAGO, 1986												
All causes		731	219.5	100.0		467	281.3	100.0		264	158.1	100.0
Symptoms and ill-defined conditions (780-799)		28	8.4	3.8		18	10.8	3.9		10	6.0	3.8
Total number of deaths from defined causes**		703	211.1	100.0		449	270.5	100.0		254	152.1	100.0
Accidents (E800-E949, E980-E989)	1	146	43.8	20.8	1	121	72.9	26.9	3	25	15.0	9.8
Diseases of the heart (390-429)	2	96	28.8	13.7	2	59	35.5	13.1	2	37	22.2	14.6
Malignant neoplasms (140-208)	3	72	21.6	10.2	5	27	16.3	6.0	1	45	26.9	17.7
Suicide (E950-E959)	4	51	15.3	7.3	4	36	21.7	8.0	5	15	9.0	5.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	49	14.7	7.0	3	43	25.9	9.6	-	6	3.6	2.4
Diabetes mellitus (250)	-	32	9.6	4.6	-	13	7.8	2.9	4	19	11.4	7.5
All other causes		257	77.2	36.6		150	90.4	33.4		107	64.1	42.1
UNITED STATES, 1987												
All causes		131164	169.0	100.0		91082	236.1	100.0		40082	102.7	100.0
Symptoms and ill-defined conditions (780-799)		4396	5.7	3.4		3058	7.9	3.4		1338	3.4	3.3
Total number of deaths from defined causes**		126768	163.3	100.0		88024	228.1	100.0		38744	99.2	100.0
Accidents (E800-E949, E980-E989)	1	28997	37.4	22.9	1	22592	58.6	25.7	2	6405	16.4	16.5
Malignant neoplasms (140-208)	2	20305	26.2	16.0	4	9231	23.9	10.5	1	11074	28.4	28.6
Diseases of the heart (390-429)	3	16077	20.7	12.7	2	11900	30.8	13.5	3	4177	10.7	10.8
Suicide (E950-E959)	4	11787	15.2	9.3	3	9247	24.0	10.5	4	2540	6.5	6.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	10271	13.2	8.1	5	7934	20.6	9.0	5	2337	6.0	6.0
All other causes		39331	50.7	31.0		27120	70.3	30.8		12211	31.3	31.5
URUGUAY, 1987												
All causes		1329	174.1	100.0		813	214.1	100.0		516	134.5	100.0
Symptoms and ill-defined conditions (780-799)		70	9.2	5.3		37	9.7	4.6		33	8.6	6.4
Total number of deaths from defined causes**		1259	164.9	100.0		776	204.4	100.0		483	125.9	100.0
Accidents (E800-E949, E980-E989)	1	304	39.8	24.1	1	250	65.8	32.2	3	54	14.1	11.2
Malignant neoplasms (140-208)	2	295	38.6	23.4	2	138	36.3	17.8	1	157	40.9	32.5
Diseases of the heart (390-429)	3	173	22.7	13.7	3	114	30.0	14.7	2	59	15.4	12.2
Cerebrovascular disease (430-438)	4	82	10.7	6.5	5	40	10.5	5.2	4	42	10.9	8.7
Suicide (E950-E959)	5	59	7.7	4.7	4	43	11.3	5.5	5	16	4.2	3.3
All other causes		346	45.3	27.5		191	50.3	24.6		155	40.4	32.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10f (*Cont.*).

Five leading causes of death in the population 25 to 44 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 25 - 44 years				Male, 25 - 44 years				Female, 25 - 44 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
VENEZUELA, 1987												
All causes		9235	196.3	100.0		6047	254.0	100.0		3188	137.1	100.0
Symptoms and ill-defined conditions (780-799)		761	16.2	8.2		427	17.9	7.1		334	14.4	10.5
Total number of deaths from defined causes**		8474	180.1	100.0		5620	236.1	100.0		2854	122.8	100.0
Accidents (E800-E949, E980-E989)	1	2663	56.6	31.4	1	2295	96.4	40.8	2	368	15.8	12.9
Malignant neoplasms (140-208)	2	1066	22.7	12.6	4	393	16.5	7.0	1	673	29.0	23.6
Diseases of the heart (390-429)	3	894	19.0	10.5	3	569	23.9	10.1	3	325	14.0	11.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	4	710	15.1	8.4	2	656	27.6	11.7	-	54	2.3	1.9
Cerebrovascular disease (430-438)	5	370	7.9	4.4	-	166	7.0	3.0	4	204	8.8	7.1
Suicide (E950-E959)	-	281	6.0	3.3	5	225	9.5	4.0	-	56	2.4	2.0
Complications of pregnancy, childbirth and puerperium (630-676)	-	196	4.2	2.3	-	-	-	-	5	196	8.4	6.9
All other causes		2294	48.8	27.1		1316	55.3	23.4		978	42.1	34.3

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g.

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		55320	976.9	100.0		36581	1328.0	100.0		18535	637.3	100.0
Symptoms and ill-defined conditions (780-799)		935	16.5	1.7		619	22.5	1.7		312	10.7	1.7
Total number of deaths from defined causes**		54385	960.3	100.0		35962	1305.5	100.0		18223	626.5	100.0
Diseases of the heart (390-429)	1	16832	297.2	30.9	1	12077	438.4	33.6	2	4687	161.1	25.7
Malignant neoplasms (140-208)	2	14909	263.3	27.4	2	8797	319.4	24.5	1	6075	208.9	33.3
Cerebrovascular disease (430-438)	3	5784	102.1	10.6	3	3668	133.2	10.2	3	2096	72.1	11.5
Accidents (E800-E949, E980-E989)	4	2672	47.2	4.9	4	2056	74.6	5.7	4	604	20.8	3.3
Chronic liver disease and cirrhosis (571)	5	1682	29.7	3.1	5	1312	47.6	3.6	-	363	12.5	2.0
Diabetes mellitus (250)	-	1241	21.9	2.3	-	661	24.0	1.8	5	579	19.9	3.2
All other causes		11265	198.9	20.7		7391	268.3	20.6		3819	131.3	21.0
BAHAMAS, 1987												
All causes		379	1144.0	100.0		229	1451.2	100.0		141	812.7	100.0
Symptoms and ill-defined conditions (780-799)		6	18.1	1.6		3	19.0	1.3		3	17.3	2.1
Total number of deaths from defined causes**		373	1125.9	100.0		226	1432.2	100.0		138	795.4	100.0
Malignant neoplasms (140-208)	1	102	307.9	27.3	1	63	399.2	27.9	1	39	224.8	28.3
Diseases of the heart (390-429)	2	77	232.4	20.6	2	47	297.8	20.8	2	30	172.9	21.7
Accidents (E800-E949, E980-E989)	3	29	87.5	7.8	3	23	145.8	10.2	-	6	34.6	4.3
Cerebrovascular disease (430-438)	4	27	81.5	7.2	5	14	88.7	6.2	4	13	74.9	9.4
Chronic liver disease and cirrhosis (571)	5	25	75.5	6.7	4	17	107.7	7.5	5	8	46.1	5.8
Diabetes mellitus (250)	-	22	66.4	5.9	-	8	50.7	3.5	3	14	80.7	10.1
All other causes		91	274.7	24.4		54	342.2	23.9		28	161.4	20.3
BARBADOS, 1988												
All causes		316	885.2	100.0		185	1209.2	100.0		131	642.2	100.0
Symptoms and ill-defined conditions (780-799)		7	19.6	2.2		6	39.2	3.2		1	4.9	0.8
Total number of deaths from defined causes**		309	865.5	100.0		179	1169.9	100.0		130	637.3	100.0
Malignant neoplasms (140-208)	1	92	257.7	29.8	2	45	294.1	25.1	1	47	230.4	36.2
Diseases of the heart (390-429)	2	68	190.5	22.0	1	46	300.7	25.7	2	22	107.8	16.9
Cerebrovascular disease (430-438)	3	30	84.0	9.7	3	15	98.0	8.4	3	15	73.5	11.5
Diabetes mellitus (250)	4	23	64.4	7.4	5	8	52.3	4.5	3	15	73.5	11.5
Accidents (E800-E949, E980-E989)	5	16	44.8	5.2	4	13	85.0	7.3	-	3	14.7	2.3
Chronic liver disease and cirrhosis (571)	-	11	30.8	3.6	-	7	45.8	3.9	5	4	19.6	3.1
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	10	28.0	3.2	-	4	26.1	2.2	4	6	29.4	4.6
All other causes		59	165.3	19.1		41	268.0	22.9		18	88.2	13.8
BELIZE, 1986												
All causes		109	492.8	100.0		65	604.1	100.0		44	387.3	100.0
Symptoms and ill-defined conditions (780-799)		5	22.6	4.6		2	18.6	3.1		3	26.4	6.8
Total number of deaths from defined causes**		104	470.2	100.0		63	585.5	100.0		41	360.9	100.0
Cerebrovascular disease (430-438)	1	17	76.9	16.3	3	8	74.3	12.7	1	9	79.2	22.0
Diseases of the heart (390-429)	1	17	76.9	16.3	1	13	120.8	20.6	4	4	35.2	9.8
Malignant neoplasms (140-208)	2	14	63.3	13.5	4	7	65.1	11.1	2	7	61.6	17.1
Accidents (E800-E949, E980-E989)	3	11	49.7	10.6	2	9	83.6	14.3	-	2	17.6	4.9
Chronic liver disease and cirrhosis (571)	4	10	45.2	9.6	-	4	37.2	6.3	3	6	52.8	14.6
Influenza and pneumonia (480-487)	5	7	31.6	6.7	5	5	46.5	7.9	-	2	17.6	4.9
Diabetes mellitus (250)	-	5	22.6	4.8	-	2	18.6	3.2	5	3	26.4	7.3
All other causes		23	104.0	22.1		15	139.4	23.8		8	70.4	19.5
BRAZIL (AREA OF INFORMATION), 1986												
All causes		180990	1040.9	100.0		115175	1340.4	100.0		65673	746.7	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
BRAZIL (AREA OF INFORMATION), 1986 (cont.)												
Symptoms and ill-defined conditions (780-799)		28463	163.7	15.7		18352	213.6	15.9		10084	114.7	15.4
Total number of deaths from defined causes**		152527	877.2	100.0		96823	1126.9	100.0		55589	632.1	100.0
Diseases of the heart (390-429)	1	40608	233.6	26.6	1	25677	298.8	26.5	1	14898	169.4	26.8
Malignant neoplasms (140-208)	2	28611	164.6	18.8	2	15951	185.6	16.5	2	12647	143.8	22.8
Cerebrovascular disease (430-438)	3	22423	129.0	14.7	3	13245	154.1	13.7	3	9150	104.0	16.5
Accidents (E800-E949, E980-E989)	4	12172	70.0	8.0	4	9871	114.9	10.2	5	2293	26.1	4.1
Chronic liver disease and cirrhosis (571)	5	5708	32.8	3.7	5	4695	54.6	4.8	-	1009	11.5	1.8
Diabetes mellitus (250)	-	4905	28.2	3.2	-	2203	25.6	2.3	4	2698	30.7	4.9
All other causes		38100	219.1	25.0		25181	293.1	26.0		12894	146.6	23.2
CANADA, 1988												
All causes		34766	698.8	100.0		22224	905.7	100.0		12542	497.4	100.0
Symptoms and ill-defined conditions (780-799)		500	10.0	1.4		358	14.6	1.6		142	5.6	1.1
Total number of deaths from defined causes**		34266	688.7	100.0		21866	891.1	100.0		12400	491.8	100.0
Malignant neoplasms (140-208)	1	14511	291.7	42.3	1	8048	328.0	36.8	1	6463	256.3	52.1
Diseases of the heart (390-429)	2	9370	188.3	27.3	2	7163	291.9	32.8	2	2207	87.5	17.8
Accidents (E800-E949, E980-E989)	3	1622	32.6	4.7	3	1142	46.5	5.2	4	480	19.0	3.9
Cerebrovascular disease (430-438)	4	1375	27.6	4.0	4	755	30.8	3.5	3	620	24.6	5.0
Chronic liver disease and cirrhosis (571)	5	952	19.1	2.8	5	695	28.3	3.2	5	257	10.2	2.1
All other causes		6436	129.4	18.8		4063	165.6	18.6		2373	94.1	19.1
CHILE, 1987												
All causes		15044	818.1	100.0		9048	1032.2	100.0		5996	623.2	100.0
Symptoms and ill-defined conditions (780-799)		711	38.7	4.7		406	46.3	4.5		305	31.7	5.1
Total number of deaths from defined causes**		14333	779.5	100.0		8642	985.9	100.0		5691	591.5	100.0
Malignant neoplasms (140-208)	1	4332	235.6	30.2	1	2078	237.1	24.0	1	2254	234.3	39.6
Diseases of the heart (390-429)	2	2046	111.3	14.3	2	1319	150.5	15.3	2	727	75.6	12.8
Accidents (E800-E949, E980-E989)	3	1506	81.9	10.5	3	1243	141.8	14.4	5	263	27.3	4.6
Cerebrovascular disease (430-438)	4	1407	76.5	9.8	5	768	87.6	8.9	3	639	66.4	11.2
Chronic liver disease and cirrhosis (571)	5	1257	68.4	8.8	4	935	106.7	10.8	4	322	33.5	5.7
All other causes		3785	205.8	26.4		2299	262.3	26.6		1486	154.4	26.1
COLOMBIA, 1984												
All causes		27575	850.6	100.0		15441	973.1	100.0		12134	733.2	100.0
Symptoms and ill-defined conditions (780-799)		1166	36.0	4.2		623	39.3	4.0		543	32.8	4.5
Total number of deaths from defined causes**		26409	814.6	100.0		14818	933.8	100.0		11591	700.4	100.0
Diseases of the heart (390-429)	1	7151	220.6	27.1	1	4060	255.9	27.4	2	3091	186.8	26.7
Malignant neoplasms (140-208)	2	6032	186.1	22.8	2	2681	169.0	18.1	1	3351	202.5	28.9
Cerebrovascular disease (430-438)	3	2895	89.3	11.0	4	1338	84.3	9.0	3	1557	94.1	13.4
Accidents (E800-E949, E980-E989)	4	1982	61.1	7.5	3	1564	98.6	10.6	4	418	25.3	3.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	1287	39.7	4.9	5	1196	75.4	8.1	-	91	5.5	0.8
Diabetes mellitus (250)	-	693	21.4	2.6	-	278	17.5	1.9	5	415	25.1	3.6
All other causes		6369	196.5	24.1		3701	233.2	25.0		2668	161.2	23.0
COSTA RICA, 1988												
All causes		1950	601.5	100.0		1168	725.5	100.0		782	479.2	100.0
Symptoms and ill-defined conditions (780-799)		18	5.6	0.9		10	6.2	0.9		8	4.9	1.0
Total number of deaths from defined causes**		1932	595.9	100.0		1158	719.3	100.0		774	474.3	100.0
Malignant neoplasms (140-208)	1	626	193.1	32.4	1	322	200.0	27.8	1	304	186.3	39.3
Diseases of the heart (390-429)	2	360	111.0	18.6	2	250	155.3	21.6	2	110	67.4	14.2
Accidents (E800-E949, E980-E989)	3	181	55.8	9.4	3	141	87.6	12.2	5	40	24.5	5.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
COSTA RICA, 1986 (cont.)												
Cerebrovascular disease (430-438)	4	148	45.7	7.7	5	73	45.3	6.3	3	75	46.0	9.7
Diabetes mellitus (250)	5	101	31.2	5.2	-	38	23.6	3.3	4	63	38.6	8.1
Chronic liver disease and cirrhosis (571)	-	97	29.9	5.0	4	75	46.6	6.5	-	22	13.5	2.8
All other causes		419	129.2	21.7		259	160.9	22.4		160	98.0	20.7
CUBA, 1988												
All causes		13116	788.7	100.0		7602	908.7	100.0		5514	667.2	100.0
Symptoms and ill-defined conditions (780-799)		19	1.1	0.1		14	1.7	0.2		5	0.6	0.1
Total number of deaths from defined causes**		13097	787.6	100.0		7588	907.0	100.0		5509	666.6	100.0
Diseases of the heart (390-429)	1	3733	224.5	28.5	1	2331	278.6	30.7	2	1402	169.7	25.4
Malignant neoplasms (140-208)	2	3565	214.4	27.2	2	1847	220.8	24.3	1	1718	207.9	31.2
All accidents and violence (E800-E999)	3	1429	85.9	10.9	3	1086	129.8	14.3	4	343	41.5	6.2
Cerebrovascular disease (430-438)	4	1410	84.8	10.8	4	740	88.5	9.8	3	670	81.1	12.2
Diabetes mellitus (250)	5	565	34.0	4.3	5	225	26.9	3.0	5	340	41.1	6.2
All other causes		2395	144.0	18.3		1359	162.4	17.9		1036	125.4	18.8
DOMINICAN REPUBLIC, 1985												
All causes		4484	689.3	100.0		2562	786.4	100.0		1922	591.9	100.0
Symptoms and ill-defined conditions (780-799)		560	86.1	12.5		266	81.6	10.4		294	90.5	15.3
Total number of deaths from defined causes**		3924	603.2	100.0		2296	704.7	100.0		1628	501.4	100.0
Diseases of the heart (390-429)	1	1080	166.0	27.5	1	649	199.2	28.3	1	431	132.7	26.5
Malignant neoplasms (140-208)	2	613	94.2	15.6	3	266	81.6	11.6	2	347	106.9	21.3
Cerebrovascular disease (430-438)	3	501	77.0	12.8	2	274	84.1	11.9	3	227	69.9	13.9
Chronic liver disease and cirrhosis (571)	4	314	48.3	8.0	5	192	58.9	8.4	4	122	37.6	7.5
Accidents (E800-E949, E980-E989)	5	251	38.6	6.4	4	198	60.8	8.6	-	53	16.3	3.3
Diabetes mellitus (250)	-	171	26.3	4.4	-	72	22.1	3.1	5	99	30.5	6.1
All other causes		994	152.8	25.3		645	198.0	28.1		349	107.5	21.4
ECUADOR, 1987												
All causes		7849	758.5	100.0		4624	904.7	100.0		3225	615.8	100.0
Symptoms and ill-defined conditions (780-799)		893	86.3	11.4		511	100.0	11.1		382	72.9	11.8
Total number of deaths from defined causes**		6956	672.2	100.0		4113	804.7	100.0		2843	542.9	100.0
Malignant neoplasms (140-208)	1	1435	138.7	20.6	2	642	125.6	15.6	1	793	151.4	27.9
Diseases of the heart (390-429)	2	1031	99.6	14.8	3	569	111.3	13.8	2	462	88.2	16.3
Accidents (E800-E949, E980-E989)	3	826	79.8	11.9	1	672	131.5	16.3	5	154	29.4	5.4
Cerebrovascular disease (430-438)	4	568	54.9	8.2	4	318	62.2	7.7	3	250	47.7	8.8
Tuberculosis (010-018)	5	326	31.5	4.7	-	217	42.5	5.3	-	109	20.8	3.8
Chronic liver disease and cirrhosis (571)	-	318	30.7	4.6	5	236	46.2	5.7	-	82	15.7	2.9
Diabetes mellitus (250)	-	281	27.3	4.1	-	120	23.5	2.9	4	162	30.9	5.7
All other causes		2170	209.7	31.2		1339	262.0	32.6		831	158.7	29.2
EL SALVADOR, 1984												
All causes		4821	1024.4	100.0		2980	1291.7	100.0		1841	767.4	100.0
Symptoms and ill-defined conditions (780-799)		1157	245.9	24.0		609	264.0	20.4		548	228.4	29.8
Total number of deaths from defined causes**		3664	778.6	100.0		2371	1027.7	100.0		1293	539.0	100.0
Diseases of the heart (390-429)	1	548	116.4	15.0	2	330	143.0	13.9	2	218	90.9	16.9
Accidents (E800-E949, E980-E989)	2	462	98.2	12.6	1	376	163.0	15.9	4	86	35.8	6.7
Malignant neoplasms (140-208)	3	375	79.7	10.2	5	143	62.0	6.0	1	232	96.7	17.9
Mental disorders (290-319)	4	296	62.9	8.1	3	287	124.4	12.1	-	9	3.8	0.7
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	5	266	56.5	7.3	4	242	104.9	10.2	-	24	10.0	1.9
Cerebrovascular disease (430-438)	-	223	47.4	6.1	-	110	47.7	4.6	3	113	47.1	8.7
Diabetes mellitus (250)	-	116	24.6	3.2	-	56	24.3	2.4	5	60	25.0	4.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
EL SALVADOR, 1984 (cont.)												
All other causes		1378	292.8	37.6		827	358.5	34.9		551	229.7	42.6
FRENCH GUIANA, 1984												
All causes		101	1052.1	100.0		68	1437.6	100.0		33	677.6	100.0
Symptoms and ill-defined conditions (780-799)		5	52.1	5.0		5	105.7	7.4		-	-	-
Total number of deaths from defined causes**		96	1000.0	100.0		63	1331.9	100.0		33	677.6	100.0
Diseases of the heart (390-429)	1	29	302.1	30.2	1	14	296.0	22.2	1	15	308.0	45.5
Malignant neoplasms (140-208)	2	19	197.9	19.8	2	10	211.4	15.9	2	9	184.8	27.3
Chronic liver disease and cirrhosis (571)	3	12	125.0	12.5	3	8	169.1	12.7	3	4	82.1	12.1
Accidents (E800-E949, E980-E989)	4	9	93.8	9.4	4	7	148.0	11.1	4	2	41.1	6.1
Cerebrovascular disease (430-438)	5	7	72.9	7.3	5	6	126.8	9.5	5	1	20.5	3.0
Diabetes mellitus (250)	-	4	41.7	4.2	-	2	42.3	3.2	4	2	41.1	6.1
All other causes		16	166.7	16.7		16	338.3	25.4		-	-	-
GUADELOUPE, 1981												
All causes		470	951.4	100.0		295	1244.7	100.0		175	680.9	100.0
Symptoms and ill-defined conditions (780-799)		14	28.3	3.0		7	29.5	2.4		7	27.2	4.0
Total number of deaths from defined causes**		456	923.1	100.0		288	1215.2	100.0		168	653.7	100.0
Malignant neoplasms (140-208)	1	110	222.7	24.1	1	65	274.3	22.6	1	45	175.1	26.8
Diseases of the heart (390-429)	2	79	159.9	17.3	2	49	206.8	17.0	2	30	116.7	17.9
Accidents (E800-E949, E980-E989)	3	58	117.4	12.7	3	46	194.1	16.0	5	12	46.7	7.1
Mental disorders (290-319)	4	51	103.2	11.2	4	38	160.3	13.2	4	13	50.6	7.7
Cerebrovascular disease (430-438)	5	38	76.9	8.3	5	20	84.4	6.9	3	18	70.0	10.7
Chronic liver disease and cirrhosis (571)	-	29	58.7	6.4	5	20	84.4	6.9	-	9	35.0	5.4
All other causes		91	184.2	20.0		50	211.0	17.4		41	159.5	24.4
GUATEMALA, 1984												
All causes		7904	982.1	100.0		4552	1128.7	100.0		3352	834.9	100.0
Symptoms and ill-defined conditions (780-799)		768	95.4	9.7		416	103.1	9.1		352	87.7	10.5
Total number of deaths from defined causes**		7136	886.7	100.0		4136	1025.5	100.0		3000	747.2	100.0
Intestinal infections due to specified organisms and ill defined (007-009).	1	1016	126.2	14.2	1	612	151.7	14.8	2	404	100.6	13.5
Influenza and pneumonia (480-487)	2	800	99.4	11.2	3	452	112.1	10.9	3	348	86.7	11.6
Diseases of the heart (390-429)	3	788	97.9	11.0	3	452	112.1	10.9	4	336	83.7	11.2
Malignant neoplasms (140-208)	4	780	96.9	10.9	4	300	74.4	7.3	1	480	119.6	16.0
Accidents (E800-E949, E980-E989)	5	576	71.6	8.1	2	484	120.0	11.7	-	92	22.9	3.1
Nutritional deficiencies (260-269)	-	536	66.6	7.5	5	252	62.5	6.1	5	284	70.7	9.5
All other causes		2640	328.0	37.0		1584	392.8	38.3		1056	263.0	35.2
GUYANA, 1984												
All causes		1201	1176.3	100.0		745	1487.0	100.0		456	876.9	100.0
Symptoms and ill-defined conditions (780-799)		67	65.6	5.6		39	77.8	5.2		28	53.8	6.1
Total number of deaths from defined causes**		1134	1110.7	100.0		706	1409.2	100.0		428	823.1	100.0
Diseases of the heart (390-429)	1	306	299.7	27.0	1	196	391.2	27.8	1	110	211.5	25.7
Cerebrovascular disease (430-438)	2	243	238.0	21.4	2	146	291.4	20.7	2	97	186.5	22.7
Malignant neoplasms (140-208)	3	98	96.0	8.6	5	40	79.8	5.7	3	58	111.5	13.6
Diabetes mellitus (250)	4	79	77.4	7.0	-	31	61.9	4.4	4	48	92.3	11.2
Accidents (E800-E949, E980-E989)	5	63	61.7	5.6	3	50	99.8	7.1	5	13	25.0	3.0
Chronic liver disease and cirrhosis (571)	-	49	48.0	4.3	4	42	83.8	5.9	-	7	13.5	1.6
All other causes		296	289.9	26.1		201	401.2	28.5		95	182.7	22.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
HONDURAS, 1981												
All causes		2445	654.1	100.0		1401	751.6	100.0		1044	557.1	100.0
Symptoms and ill-defined conditions (780-799)		611	163.5	25.0		304	163.1	21.7		307	163.8	29.4
Total number of deaths from defined causes**		1834	490.6	100.0		1097	588.5	100.0		737	393.3	100.0
Diseases of the heart (390-429)	1	355	95.0	19.4	2	198	106.2	18.0	1	157	83.8	21.3
All accidents and violence (E800-E999)	2	333	89.1	18.2	1	291	156.1	26.5	4	42	22.4	5.7
Malignant neoplasms (140-208)	3	182	48.7	9.9	3	60	32.2	5.5	2	122	65.1	16.6
Cerebrovascular disease (430-438)	4	97	25.9	5.3	-	47	25.2	4.3	5	50	26.7	6.8
Intestinal infections due to specified organisms and ill defined (007-009).	5	89	23.8	4.9	5	49	26.3	4.5	5	40	21.3	5.4
Chronic liver disease and cirrhosis (571)	-	67	17.9	3.7	4	55	29.5	5.0	-	12	6.4	1.6
All other causes		711	190.2	38.8		397	213.0	36.2		314	167.6	42.6
JAMAICA, 1984												
All causes		2464	948.4	100.0		1289	1064.4	100.0		1175	847.2	100.0
Symptoms and ill-defined conditions (780-799)		286	110.1	11.6		154	127.2	11.9		132	95.2	11.2
Total number of deaths from defined causes**		2178	838.3	100.0		1135	937.2	100.0		1043	752.0	100.0
Malignant neoplasms (140-208)	1	605	232.9	27.8	1	270	223.0	23.8	1	335	241.5	32.1
Diseases of the heart (390-429)	2	483	185.9	22.2	2	256	211.4	22.6	2	227	163.7	21.8
Cerebrovascular disease (430-438)	3	332	127.8	15.2	3	154	127.2	13.6	3	178	128.3	17.1
Diabetes mellitus (250)	4	198	76.2	9.1	4	84	69.4	7.4	4	114	82.2	10.9
Bronchitis, emphysema and asthma (490-493)	5	53	20.4	2.4	5	37	30.6	3.3	-	16	11.5	1.5
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	49	18.9	2.2	-	32	26.4	2.8	5	17	12.3	1.6
All other causes		458	176.3	21.0		302	249.4	26.6		156	112.5	15.0
MARTINIQUE, 1985												
All causes		471	853.3	100.0		282	1101.6	100.0		189	638.5	100.0
Symptoms and ill-defined conditions (780-799)		29	52.5	6.2		17	66.4	6.0		12	40.5	6.3
Total number of deaths from defined causes**		442	800.7	100.0		265	1035.2	100.0		177	598.0	100.0
Malignant neoplasms (140-208)	1	141	255.4	31.9	1	74	289.1	27.9	1	67	226.4	37.9
Diseases of the heart (390-429)	2	70	126.8	15.8	2	40	156.3	15.1	2	30	101.4	16.9
Cerebrovascular disease (430-438)	3	67	121.4	15.2	3	39	152.3	14.7	3	28	94.6	15.8
Accidents (E800-E949, E980-E989)	4	38	68.8	8.6	4	35	136.7	13.2	-	3	10.1	1.7
Chronic liver disease and cirrhosis (571)	5	20	36.2	4.5	5	16	62.5	6.0	-	4	13.5	2.3
Mental disorders (290-319)	-	15	27.2	3.4	-	8	31.3	3.0	4	7	23.6	4.0
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	8	14.5	1.8	-	2	7.8	0.8	5	6	20.3	3.4
All other causes		83	150.4	18.8		51	199.2	19.2		32	108.1	18.1
MEXICO, 1986												
All causes		75666	921.0	100.0		44703	1133.7	100.0		30598	716.2	100.0
Symptoms and ill-defined conditions (780-799)		2169	26.4	2.9		1000	25.4	2.2		804	18.8	2.6
Total number of deaths from defined causes**		73497	894.6	100.0		43703	1108.3	100.0		29794	697.4	100.0
Malignant neoplasms (140-208)	1	11684	142.2	15.9	4	4751	120.5	10.9	1	6933	162.3	23.3
Diseases of the heart (390-429)	2	10263	124.9	14.0	2	5997	152.1	13.7	3	4266	99.9	14.3
Diabetes mellitus (250)	3	8504	103.5	11.6	5	3911	99.2	8.9	2	4593	107.5	15.4
Chronic liver disease and cirrhosis (571)	4	7490	91.2	10.2	3	5842	148.2	13.4	5	1648	38.6	5.5
Accidents (E800-E949, E980-E989)	5	7394	90.0	10.1	1	6047	153.4	13.8	-	1347	31.5	4.5
Cerebrovascular disease (430-438)	-	3611	44.0	4.9	-	1818	46.1	4.2	4	1793	42.0	6.0
All other causes		24551	298.8	33.4		15337	388.9	35.1		9214	215.7	30.9
NETHERLANDS ANTILLES (CURACAO), 1981												
All causes		163	776.2	100.0		91	910.0	100.0		72	654.5	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
NETHERLANDS ANTILLES (CURACAO), 1981 (cont.)												
Symptoms and ill-defined conditions (780-799)		7	33.3	4.3		5	50.0	5.5		2	18.2	2.8
Total number of deaths from defined causes**		156	742.9	100.0		86	860.0	100.0		70	636.4	100.0
Malignant neoplasms (140-208)	1	51	242.9	32.7	1	30	300.0	34.9	1	21	190.9	30.0
Diseases of the heart (390-429)	2	46	219.0	29.5	2	25	250.0	29.1	1	21	190.9	30.0
Cerebrovascular disease (430-438)	3	21	100.0	13.5	3	7	70.0	8.1	2	14	127.3	20.0
Accidents (E800-E949, E980-E989)	4	5	23.8	3.2	4	4	40.0	4.7	5	1	9.1	1.4
Bronchitis, emphysema and asthma (490-493)	5	4	19.0	2.6	-	2	20.0	2.3	4	2	18.2	2.9
Diabetes mellitus (250)	-	3	14.3	1.9	-	-	-	-	3	3	27.3	4.3
Mental disorders (290-319)	-	3	14.3	1.9	5	3	30.0	3.5	-	-	-	-
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	1	4.8	0.6	-	-	-	-	5	1	9.1	1.4
All other causes		22	104.8	14.1		15	150.0	17.4		7	63.6	10.0
PANAMA, 1987												
All causes		1518	575.4	100.0		925	687.7	100.0		593	458.6	100.0
Symptoms and ill-defined conditions (780-799)		92	34.9	6.1		55	40.9	5.9		37	28.6	6.2
Total number of deaths from defined causes**		1426	540.6	100.0		870	646.8	100.0		556	430.0	100.0
Malignant neoplasms (140-208)	1	357	135.3	25.0	1	191	142.0	22.0	1	166	128.4	29.9
Diseases of the heart (390-429)	2	276	104.6	19.4	2	174	129.4	20.0	2	102	78.9	18.3
Cerebrovascular disease (430-438)	3	155	58.8	10.9	4	87	64.7	10.0	3	68	52.6	12.2
Accidents (E800-E949, E980-E989)	4	148	56.1	10.4	3	119	88.5	13.7	4	29	22.4	5.2
Chronic liver disease and cirrhosis (571)	5	55	20.8	3.9	5	36	26.8	4.1	5	19	14.7	3.4
Diabetes mellitus (250)	-	49	18.6	3.4	-	20	14.9	2.3	4	29	22.4	5.2
All other causes		386	146.3	27.1		243	180.7	27.9		143	110.6	25.7
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		2094	904.1	100.0		1232	1096.1	100.0		862	723.2	100.0
Symptoms and ill-defined conditions (780-799)		309	133.4	14.8		177	157.5	14.4		132	110.7	15.3
Total number of deaths from defined causes**		1785	770.7	100.0		1055	938.6	100.0		730	612.4	100.0
Diseases of the heart (390-429)	1	436	188.3	24.4	1	276	245.6	26.2	2	160	134.2	21.9
Malignant neoplasms (140-208)	2	374	161.5	21.0	3	161	143.2	15.3	1	213	178.7	29.2
Cerebrovascular disease (430-438)	3	302	130.4	16.9	2	179	159.3	17.0	3	123	103.2	16.8
Accidents (E800-E949, E980-E989)	4	113	48.8	6.3	4	88	78.3	8.3	5	25	21.0	3.4
Diabetes mellitus (250)	5	75	32.4	4.2	-	34	30.2	3.2	4	41	34.4	5.6
Tuberculosis (010-018)	-	65	28.1	3.6	5	43	38.3	4.1	-	22	18.5	3.0
All other causes		420	181.3	23.5		274	243.8	26.0		146	122.5	20.0
PERU, 1983												
All causes		11448	531.6	100.0		6576	618.3	100.0		4872	446.9	100.0
Symptoms and ill-defined conditions (780-799)		590	27.4	5.2		347	32.6	5.3		243	22.3	5.0
Total number of deaths from defined causes**		10858	504.2	100.0		6229	585.7	100.0		4629	424.6	100.0
Malignant neoplasms (140-208)	1	1773	82.3	16.3	1	735	69.1	11.8	1	1038	95.2	22.4
Diseases of the heart (390-429)	2	1203	55.9	11.1	3	680	63.9	10.9	2	523	48.0	11.3
Influenza and pneumonia (480-487)	3	1107	51.4	10.2	5	644	60.6	10.3	3	463	42.5	10.0
Tuberculosis (010-018)	4	1009	46.8	9.3	4	646	60.7	10.4	4	363	33.3	7.8
Accidents (E800-E949, E980-E989)	5	869	40.3	8.0	2	697	65.5	11.2	-	172	15.8	3.7
Cerebrovascular disease (430-438)	-	530	24.6	4.9	-	283	26.6	4.5	5	247	22.7	5.3
All other causes		4367	202.8	40.2		2544	239.2	40.8		1823	167.2	39.4
PUERTO RICO, 1987												
All causes		4661	833.4	100.0		3102	1190.3	100.0		1559	521.9	100.0
Symptoms and ill-defined conditions (780-799)		14	2.5	0.3		11	4.2	0.4		3	1.0	0.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PUERTO RICO, 1987 (cont.)												
Total number of deaths from defined causes**		4647	830.9	100.0		3091	1186.1	100.0		1556	520.9	100.0
Diseases of the heart (390-429)	1	1365	244.1	29.4	1	887	340.4	28.7	1	478	160.0	30.7
Malignant neoplasms (140-208)	2	1018	182.0	21.9	2	605	232.2	19.6	2	413	138.3	26.5
Chronic liver disease and cirrhosis (571)	3	352	62.9	7.6	3	286	109.7	9.3	4	66	22.1	4.2
Diabetes mellitus (250)	4	283	50.6	6.1	5	143	54.9	4.6	3	140	46.9	9.0
Accidents (E800-E949, E980-E989)	5	277	49.5	6.0	4	225	86.3	7.3	-	52	17.4	3.3
Cerebrovascular disease (430-438)	-	181	32.4	3.9	-	118	45.3	3.8	5	63	21.1	4.0
All other causes		1171	209.4	25.2		827	317.3	26.8		344	115.2	22.1
SAINT LUCIA, 1988												
All causes		195	1393.9	100.0		100	1634.0	100.0		95	1207.1	100.0
Symptoms and ill-defined conditions (780-799)		5	35.7	2.6		4	65.4	4.0		1	12.7	1.1
Total number of deaths from defined causes**		190	1358.1	100.0		96	1568.6	100.0		94	1194.4	100.0
Diseases of the heart (390-429)	1	52	371.7	27.4	1	28	457.5	29.2	1	24	305.0	25.5
Malignant neoplasms (140-208)	2	33	235.9	17.4	2	16	261.4	16.7	2	17	216.0	18.1
Cerebrovascular disease (430-438)	3	21	150.1	11.1	4	6	98.0	6.3	3	15	190.6	16.0
Accidents (E800-E949, E980-E989)	4	11	78.6	5.8	3	7	114.4	7.3	-	4	50.8	4.3
Chronic liver disease and cirrhosis (571)	5	10	71.5	5.3	-	4	65.4	4.2	4	6	76.2	6.4
Diabetes mellitus (250)	-	9	64.3	4.7	-	4	65.4	4.2	5	5	63.5	5.3
Influenza and pneumonia (480-487)	-	6	42.9	3.2	-	1	16.3	1.0	5	5	63.5	5.3
Tuberculosis (010-018)	-	5	35.7	2.6	5	5	81.7	5.2	-	-	-	-
All other causes		43	307.4	22.6		25	408.5	26.0		18	228.7	19.1
ST. VINCENT & THE GRENADINES, 1986												
All causes		112	1183.9	100.0		55	1331.7	100.0		57	1069.4	100.0
Symptoms and ill-defined conditions (780-799)		1	10.6	0.9		1	24.2	1.8		-	-	-
Total number of deaths from defined causes**		111	1173.4	100.0		54	1307.5	100.0		57	1069.4	100.0
Diseases of the heart (390-429)	1	32	338.3	28.8	1	16	387.4	29.6	1	16	300.2	28.1
Malignant neoplasms (140-208)	2	28	296.0	25.2	2	12	290.6	22.2	1	16	300.2	28.1
Diabetes mellitus (250)	3	10	105.7	9.0	5	1	24.2	1.9	2	9	168.9	15.8
Accidents (E800-E949, E980-E989)	4	9	95.1	8.1	3	6	145.3	11.1	4	3	56.3	5.3
Cerebrovascular disease (430-438)	5	6	63.4	5.4	4	2	48.4	3.7	3	4	75.0	7.0
Influenza and pneumonia (480-487)	-	3	31.7	2.7	5	1	24.2	1.9	5	2	37.5	3.5
Bronchitis, emphysema and asthma (490-493)	-	2	21.1	1.8	5	1	24.2	1.9	-	1	18.8	1.8
Chronic liver disease and cirrhosis (571)	-	2	21.1	1.8	4	2	48.4	3.7	-	-	-	-
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	-	1	10.6	0.9	5	1	24.2	1.9	-	-	-	-
Intestinal infections due to specified organisms and ill defined (007-009).	-	1	10.6	0.9	5	1	24.2	1.9	-	-	-	-
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	1	10.6	0.9	5	1	24.2	1.9	-	-	-	-
Mental disorders (290-319)	-	1	10.6	0.9	5	1	24.2	1.9	-	-	-	-
Tuberculosis (010-018)	-	1	10.6	0.9	5	1	24.2	1.9	-	-	-	-
All other causes		14	148.0	12.6		8	193.7	14.8		6	112.6	10.5
SURINAME, 1985												
All causes		537	1118.8	100.0		309	1287.5	100.0		228	950.0	100.0
Symptoms and ill-defined conditions (780-799)		55	114.6	10.2		24	100.0	7.8		31	129.2	13.6
Total number of deaths from defined causes**		482	1004.2	100.0		285	1187.5	100.0		197	820.8	100.0
Diseases of the heart (390-429)	1	135	281.3	28.0	1	91	379.2	31.9	2	44	183.3	22.3
Malignant neoplasms (140-208)	2	73	152.1	15.1	3	27	112.5	9.5	1	46	191.7	23.4
Cerebrovascular disease (430-438)	3	45	93.8	9.3	4	25	104.2	8.8	4	20	83.3	10.2
Accidents (E800-E949, E980-E989)	4	37	77.1	7.7	2	28	116.7	9.8	5	9	37.5	4.6
Diabetes mellitus (250)	5	31	64.6	6.4	-	10	41.7	3.5	3	21	87.5	10.7

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
SURINAME, 1985 (cont.)												
Chronic liver disease and cirrhosis (571)	-	22	45.8	4.6	5	14	58.3	4.9	-	8	33.3	4.1
All other causes		139	289.6	28.8		90	375.0	31.6		49	204.2	24.9
TRINIDAD AND TOBAGO, 1986												
All causes		1875	1255.0	100.0		1087	1505.5	100.0		788	1020.7	100.0
Symptoms and ill-defined conditions (780-799)		12	8.0	0.6		12	16.6	1.1		-	-	-
Total number of deaths from defined causes**		1863	1247.0	100.0		1075	1488.9	100.0		788	1020.7	100.0
Diseases of the heart (390-429)	1	550	368.1	29.5	1	354	490.3	32.9	1	196	253.9	24.9
Diabetes mellitus (250)	2	311	208.2	16.7	2	156	216.1	14.5	3	155	200.8	19.7
Malignant neoplasms (140-208)	3	286	191.4	15.4	3	130	180.1	12.1	2	156	202.1	19.8
Cerebrovascular disease (430-438)	4	203	135.9	10.9	4	110	152.4	10.2	4	93	120.5	11.8
Accidents (E800-E949, E980-E989)	5	80	53.5	4.3	5	66	91.4	6.1	-	14	18.1	1.8
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	31	20.7	1.7	-	15	20.8	1.4	5	16	20.7	2.0
All other causes		402	269.1	21.6		244	338.0	22.7		158	204.7	20.1
UNITED STATES, 1987												
All causes		389244	859.3	100.0		241259	1113.0	100.0		147985	626.5	100.0
Symptoms and ill-defined conditions (780-799)		4746	10.5	1.2		3047	14.1	1.3		1699	7.2	1.1
Total number of deaths from defined causes**		384498	848.8	100.0		238212	1099.0	100.0		146286	619.3	100.0
Malignant neoplasms (140-208)	1	136664	301.7	35.5	2	73902	340.9	31.0	1	62762	265.7	42.9
Diseases of the heart (390-429)	2	123929	273.6	32.2	1	87073	401.7	36.6	2	36856	156.0	25.2
Cerebrovascular disease (430-438)	3	16160	35.7	4.2	4	8644	39.9	3.6	3	7516	31.8	5.1
Accidents (E800-E949, E980-E989)	4	15308	33.8	4.0	3	10852	50.1	4.6	4	4456	18.9	3.0
Chronic liver disease and cirrhosis (571)	5	11696	25.8	3.0	5	8100	37.4	3.4	-	3596	15.2	2.5
Diabetes mellitus (250)	-	8172	18.0	2.1	-	4153	19.2	1.7	5	4019	17.0	2.7
All other causes		72569	160.2	18.9		45488	209.9	19.1		27081	114.6	18.5
URUGUAY, 1987												
All causes		6213	956.2	100.0		4144	1316.6	100.0		2069	617.5	100.0
Symptoms and ill-defined conditions (780-799)		453	69.7	7.3		336	106.8	8.1		117	34.9	5.7
Total number of deaths from defined causes**		5760	886.4	100.0		3808	1209.9	100.0		1952	582.6	100.0
Malignant neoplasms (140-208)	1	2118	326.0	36.8	1	1317	418.4	34.6	1	801	239.1	41.0
Diseases of the heart (390-429)	2	1334	205.3	23.2	2	962	305.6	25.3	2	372	111.0	19.1
Cerebrovascular disease (430-438)	3	496	76.3	8.6	3	291	92.5	7.6	3	205	61.2	10.5
Accidents (E800-E949, E980-E989)	4	348	53.6	6.0	4	272	86.4	7.1	4	76	22.7	3.9
Chronic liver disease and cirrhosis (571)	5	151	23.2	2.6	5	125	39.7	3.3	-	26	7.8	1.3
Diabetes mellitus (250)	-	134	20.6	2.3	-	67	21.3	1.8	5	67	20.0	3.4
All other causes		1179	181.4	20.5		774	245.9	20.3		405	120.9	20.7
VENEZUELA, 1987												
All causes		17004	858.2	100.0		10362	1051.5	100.0		6642	666.9	100.0
Symptoms and ill-defined conditions (780-799)		2127	107.3	12.5		1328	134.8	12.8		799	80.2	12.0
Total number of deaths from defined causes**		14877	750.8	100.0		9034	916.7	100.0		5843	586.7	100.0
Diseases of the heart (390-429)	1	3873	195.5	26.0	1	2510	254.7	27.8	2	1363	136.9	23.3
Malignant neoplasms (140-208)	2	3374	170.3	22.7	2	1561	158.4	17.3	1	1813	182.0	31.0
Accidents (E800-E949, E980-E989)	3	1405	70.9	9.4	3	1142	115.9	12.6	5	263	26.4	4.5
Cerebrovascular disease (430-438)	4	1283	64.8	8.6	4	681	69.1	7.5	3	602	60.4	10.3
Diabetes mellitus (250)	5	801	40.4	5.4	-	393	39.9	4.4	4	408	41.0	7.0
Chronic liver disease and cirrhosis (571)	-	602	30.4	4.0	5	484	49.1	5.4	-	118	11.8	2.0
All other causes		3539	178.6	23.8		2263	229.6	25.0		1276	128.1	21.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10g (*Cont.*).

Five leading causes of death in the population 45 to 64 years, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 45 - 64 years				Male, 45 - 64 years				Female, 45 - 64 years			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
VIRGIN ISLANDS (US), 1980												
All causes		131	1016.3	100.0		79	1293.0	100.0		52	767.0	100.0
Symptoms and ill-defined conditions (780-799)		2	15.5	1.5		-	-	-		2	29.5	3.8
Total number of deaths from defined causes**		129	1000.8	100.0		79	1293.0	100.0		50	737.5	100.0
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	1	10	77.6	7.8	1	9	147.3	11.4	3	1	14.7	2.0
Diseases of the heart (390-429)	2	9	69.8	7.0	2	4	65.5	5.1	1	5	73.7	10.0
Cerebrovascular disease (430-438)	3	6	46.5	4.7	3	2	32.7	2.5	2	4	59.0	8.0
Malignant neoplasms (140-208)	4	4	31.0	3.1	2	4	65.5	5.1	-	-	-	-
Accidents (E800-E949, E980-E989)	5	3	23.3	2.3	3	2	32.7	2.5	3	1	14.7	2.0
Mental disorders (290-319)	5	3	23.3	2.3	3	2	32.7	2.5	3	1	14.7	2.0
Nutritional deficiencies (260-269)	-	1	7.8	0.8	4	1	16.4	1.3	-	-	-	-
All other causes		93	721.5	72.1		55	900.2	69.6		38	560.5	76.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h.

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
ARGENTINA, 1986												
All causes		139671	5319.3	100.0		70138	6210.9	100.0		68985	4609.9	100.0
Symptoms and ill-defined conditions (780-799)		2334	88.9	1.7		1231	109.0	1.8		1093	73.0	1.6
Total number of deaths from defined causes**		137337	5230.5	100.0		68907	6101.9	100.0		67892	4536.9	100.0
Diseases of the heart (390-429)	1	55104	2098.6	40.1	1	26940	2385.6	39.1	1	27959	1868.4	41.2
Malignant neoplasms (140-208)	2	23918	910.9	17.4	2	13251	1173.4	19.2	2	10595	708.0	15.6
Cerebrovascular disease (430-438)	3	17024	648.4	12.4	3	7920	701.3	11.5	3	9039	604.0	13.3
Diabetes mellitus (250)	4	3248	123.7	2.4	-	1364	120.8	2.0	4	1869	124.9	2.8
Nephritis, nephrotic syndrome and nephrosis (580-589)	5	3127	119.1	2.3	4	1641	145.3	2.4	-	1474	98.5	2.2
Influenza and pneumonia (480-487)	-	3120	118.8	2.3	5	1553	137.5	2.3	5	1552	103.7	2.3
All other causes		31796	1210.9	23.2		16238	1437.9	23.6		15404	1029.4	22.7
BAHAMAS, 1987												
All causes		564	4289.0	100.0		271	4954.3	100.0		292	3802.1	100.0
Symptoms and ill-defined conditions (780-799)		21	159.7	3.7		7	128.0	2.6		14	182.3	4.8
Total number of deaths from defined causes**		543	4129.3	100.0		264	4826.3	100.0		278	3619.8	100.0
Diseases of the heart (390-429)	1	152	1155.9	28.0	2	71	1298.0	26.9	1	81	1054.7	29.1
Malignant neoplasms (140-208)	2	128	973.4	23.6	1	82	1499.1	31.1	2	46	599.0	16.5
Cerebrovascular disease (430-438)	3	77	585.6	14.2	3	32	585.0	12.1	3	45	585.9	16.2
Diabetes mellitus (250)	4	42	319.4	7.7	4	15	274.2	5.7	4	27	351.6	9.7
Influenza and pneumonia (480-487)	5	23	174.9	4.2	5	10	182.8	3.8	5	13	169.3	4.7
Accidents (E800-E949, E980-E989)	-	17	129.3	3.1	5	10	182.8	3.8	-	7	91.1	2.5
All other causes		104	790.9	19.2		44	804.4	16.7		59	768.2	21.2
BARBADOS, 1988												
All causes		1611	6125.5	100.0		753	7530.0	100.0		858	5263.8	100.0
Symptoms and ill-defined conditions (780-799)		71	270.0	4.4		30	300.0	4.0		41	251.5	4.8
Total number of deaths from defined causes**		1540	5855.5	100.0		723	7230.0	100.0		817	5012.3	100.0
Diseases of the heart (390-429)	1	419	1593.2	27.2	1	183	1830.0	25.3	1	236	1447.9	28.9
Malignant neoplasms (140-208)	2	299	1136.9	19.4	2	161	1610.0	22.3	2	138	846.6	16.9
Cerebrovascular disease (430-438)	3	235	893.5	15.3	3	102	1020.0	14.1	3	133	816.0	16.3
Diabetes mellitus (250)	4	151	574.1	9.8	4	50	500.0	6.9	4	101	619.6	12.4
Influenza and pneumonia (480-487)	5	47	178.7	3.1	5	23	230.0	3.2	5	24	147.2	2.9
All other causes		389	1479.1	25.3		204	2040.0	28.2		185	1135.0	22.6
BELIZE, 1986												
All causes		342	3518.5	100.0		171	3630.6	100.0		171	3413.2	100.0
Symptoms and ill-defined conditions (780-799)		53	545.3	15.5		27	573.2	15.8		26	519.0	15.2
Total number of deaths from defined causes**		289	2973.3	100.0		144	3057.3	100.0		145	2894.2	100.0
Diseases of the heart (390-429)	1	69	709.9	23.9	1	31	658.2	21.5	1	38	758.5	26.2
Cerebrovascular disease (430-438)	2	37	380.7	12.8	2	21	445.9	14.6	2	16	319.4	11.0
Influenza and pneumonia (480-487)	3	33	339.5	11.4	3	17	360.9	11.8	2	16	319.4	11.0
Malignant neoplasms (140-208)	4	26	267.5	9.0	3	17	360.9	11.8	4	9	179.6	6.2
Diabetes mellitus (250)	5	20	205.8	6.9	4	9	191.1	6.3	3	11	219.6	7.6
Accidents (E800-E949, E980-E989)	-	6	61.7	2.1	5	5	106.2	3.5	-	1	20.0	0.7
Anemias (280-285)	-	2	20.6	0.7	-	-	-	-	5	2	39.9	1.4
All other causes		96	987.7	33.2		44	934.2	30.6		52	1037.9	35.9
BRAZIL (AREA OF INFORMATION), 1986												
All causes		306814	5148.9	100.0		157925	5592.4	100.0		148672	4742.5	100.0
Symptoms and ill-defined conditions (780-799)		73907	1240.3	24.1		38216	1353.3	24.2		35641	1136.9	24.0
Total number of deaths from defined causes**		232907	3908.6	100.0		119709	4239.1	100.0		113031	3605.6	100.0
Diseases of the heart (390-429)	1	76528	1284.3	32.9	1	37917	1342.7	31.7	1	38556	1229.9	34.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
BRAZIL (AREA OF INFORMATION), 1986 (cont.)												
Cerebrovascular disease (430-438)	2	43438	729.0	18.7	2	21209	751.1	17.7	2	22198	708.1	19.6
Malignant neoplasms (140-208)	3	32546	546.2	14.0	3	18229	645.5	15.2	3	14297	456.1	12.6
Influenza and pneumonia (460-487)	4	11305	189.7	4.9	4	5729	202.9	4.8	4	5564	177.5	4.9
Diabetes mellitus (250)	5	8016	134.5	3.4	-	2833	100.3	2.4	5	5177	165.1	4.6
Accidents (E800-E949, E980-E989)	-	6651	111.6	2.9	5	4134	146.4	3.5	-	2512	80.1	2.2
All other causes		54423	913.3	23.4		29658	1050.2	24.8		24727	788.8	21.9
CANADA, 1988												
All causes		137845	5066.7	100.0		70209	6103.0	100.0		67636	4307.5	100.0
Symptoms and ill-defined conditions (780-799)		1690	62.1	1.2		772	67.1	1.1		918	58.5	1.4
Total number of deaths from defined causes**		136155	5004.6	100.0		69437	6035.9	100.0		66718	4249.0	100.0
Diseases of the heart (390-429)	1	47972	1763.3	35.2	1	24209	2104.4	34.9	1	23763	1513.4	35.6
Malignant neoplasms (140-208)	2	33711	1239.1	24.8	2	18891	1642.1	27.2	2	14820	943.8	22.2
Cerebrovascular disease (430-438)	3	12377	454.9	9.1	3	4959	431.1	7.1	3	7418	472.4	11.1
Influenza and pneumonia (460-487)	4	6096	224.1	4.5	4	2997	260.5	4.3	4	3099	197.4	4.6
Diabetes mellitus (250)	5	3133	115.2	2.3	-	1354	117.7	1.9	5	1779	113.3	2.7
Accidents (E800-E949, E980-E989)	-	3078	113.1	2.3	5	1469	127.7	2.1	-	1609	102.5	2.4
All other causes		29788	1094.9	21.9		15558	1352.4	22.4		14230	906.3	21.3
CHILE, 1987												
All causes		40306	5686.5	100.0		19396	6554.9	100.0		20910	5064.2	100.0
Symptoms and ill-defined conditions (780-799)		4449	627.7	11.0		2083	704.0	10.7		2366	573.0	11.3
Total number of deaths from defined causes**		35857	5058.8	100.0		17313	5851.0	100.0		18544	4491.2	100.0
Diseases of the heart (390-429)	1	8876	1252.3	24.8	1	4160	1405.9	24.0	1	4716	1142.2	25.4
Malignant neoplasms (140-208)	2	7419	1046.7	20.7	2	3674	1241.6	21.2	2	3745	907.0	20.2
Cerebrovascular disease (430-438)	3	4857	685.2	13.5	3	2167	732.3	12.5	3	2690	651.5	14.5
Influenza and pneumonia (460-487)	4	3417	482.1	9.5	4	1580	534.0	9.1	4	1837	444.9	9.9
Bronchitis, emphysema and asthma (490-493)	5	1390	196.1	3.9	5	813	274.8	4.7	5	577	139.7	3.1
All other causes		9898	1396.4	27.6		4919	1662.4	28.4		4979	1205.9	26.8
COLOMBIA, 1984												
All causes		53637	4994.1	100.0		27034	5654.5	100.0		26603	4464.3	100.0
Symptoms and ill-defined conditions (780-799)		4408	410.4	8.2		2115	442.4	7.8		2293	384.8	8.6
Total number of deaths from defined causes**		49229	4583.7	100.0		24919	5212.1	100.0		24310	4079.5	100.0
Diseases of the heart (390-429)	1	18034	1679.1	36.6	1	9111	1905.7	36.6	1	8923	1497.4	36.7
Malignant neoplasms (140-208)	2	8000	744.9	16.3	2	4132	864.3	16.6	2	3868	649.1	15.9
Cerebrovascular disease (430-438)	3	6736	627.2	13.7	3	3058	639.6	12.3	3	3678	617.2	15.1
Accidents (E800-E949, E980-E989)	4	1583	147.4	3.2	4	1005	210.2	4.0	-	578	97.0	2.4
Influenza and pneumonia (460-487)	5	1489	138.6	3.0	5	722	151.0	2.9	5	767	128.7	3.2
Diabetes mellitus (250)	-	1262	117.5	2.6	-	449	93.9	1.8	4	813	136.4	3.3
All other causes		12125	1129.0	24.6		6442	1347.4	25.9		5683	953.7	23.4
COSTA RICA, 1988												
All causes		5855	5361.7	100.0		3109	6268.1	100.0		2746	4607.4	100.0
Symptoms and ill-defined conditions (780-799)		167	152.9	2.9		89	179.4	2.9		78	130.9	2.8
Total number of deaths from defined causes**		5688	5208.8	100.0		3020	6088.7	100.0		2668	4476.5	100.0
Diseases of the heart (390-429)	1	1710	1565.9	30.1	1	873	1760.1	28.9	1	837	1404.4	31.4
Malignant neoplasms (140-208)	2	1351	1237.2	23.8	2	788	1588.7	26.1	2	563	944.6	21.1
Cerebrovascular disease (430-438)	3	616	564.1	10.8	3	308	621.0	10.2	3	308	516.8	11.5
Accidents (E800-E949, E980-E989)	4	224	205.1	3.9	4	128	258.1	4.2	4	96	161.1	3.6
Influenza and pneumonia (460-487)	5	187	171.2	3.3	5	91	183.5	3.0	4	96	161.1	3.6
Diabetes mellitus (250)	-	143	131.0	2.5	-	49	98.8	1.6	5	94	157.7	3.5
All other causes		1457	1334.2	25.6		783	1578.6	25.9		674	1130.9	25.3

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
CUBA, 1988												
All causes		43333	5408.5	100.0		23874	5857.2	100.0		19459	4943.9	100.0
Symptoms and ill-defined conditions (780-799)		58	7.2	0.1		30	7.4	0.1		28	7.1	0.1
Total number of deaths from defined causes**		43275	5401.3	100.0		23844	5849.9	100.0		19431	4936.7	100.0
Diseases of the heart (390-429)	1	15394	1921.4	35.6	1	8379	2055.7	35.1	1	7015	1782.3	36.1
Malignant neoplasms (140-208)	2	8310	1037.2	19.2	2	5301	1300.5	22.2	2	3009	764.5	15.5
Cerebrovascular disease (430-438)	3	4790	597.9	11.1	3	2393	587.1	10.0	3	2397	609.0	12.3
Influenza and pneumonia (480-487)	4	2649	330.6	6.1	4	1461	358.4	6.1	4	1188	301.8	6.1
All accidents and violence (E800-E999)	5	2023	252.5	4.7	5	1141	279.9	4.8	-	882	224.1	4.5
Diabetes mellitus (250)	-	1486	185.5	3.4	-	478	117.3	2.0	5	1008	256.1	5.2
All other causes		8623	1076.3	19.9		4691	1150.9	19.7		3932	999.0	20.2
DOMINICA, 1985												
All causes		253	5080.0	100.0		129	6113.7	100.0		124	4290.7	100.0
Symptoms and ill-defined conditions (780-799)		17	340.0	6.7		5	237.0	3.9		12	415.2	9.7
Total number of deaths from defined causes**		236	4720.0	100.0		124	5876.8	100.0		112	3875.4	100.0
Diseases of the heart (390-429)	1	84	1680.0	35.6	1	32	1516.6	25.8	1	52	1799.3	46.4
Malignant neoplasms (140-208)	2	35	700.0	14.8	2	27	1279.6	21.8	3	8	276.8	7.1
Cerebrovascular disease (430-438)	3	25	500.0	10.6	3	14	663.5	11.3	2	11	380.6	9.8
Influenza and pneumonia (480-487)	4	10	200.0	4.2	4	6	284.4	4.8	4	4	138.4	3.6
Diabetes mellitus (250)	4	10	200.0	4.2	-	2	94.8	1.6	3	8	276.8	7.1
Bronchitis, emphysema and asthma (490-493)	5	7	140.0	3.0	5	5	237.0	4.0	5	2	69.2	1.8
All other causes		65	1300.0	27.5		38	1800.9	30.6		27	934.3	24.1
DOMINICAN REPUBLIC, 1985												
All causes		10365	5334.5	100.0		5543	5732.2	100.0		4822	4940.6	100.0
Symptoms and ill-defined conditions (780-799)		2568	1321.7	24.8		1290	1334.0	23.3		1278	1309.4	26.5
Total number of deaths from defined causes**		7797	4012.9	100.0		4253	4398.1	100.0		3544	3631.1	100.0
Diseases of the heart (390-429)	1	2773	1427.2	35.6	1	1406	1454.0	33.1	1	1367	1400.6	38.6
Cerebrovascular disease (430-438)	2	1081	556.4	13.9	2	549	567.7	12.9	2	532	545.1	15.0
Malignant neoplasms (140-208)	3	827	425.6	10.6	3	492	508.8	11.6	3	335	343.2	9.5
Chronic liver disease and cirrhosis (571)	4	356	183.2	4.6	4	217	224.4	5.1	-	139	142.4	3.9
Diabetes mellitus (250)	5	310	159.5	4.0	-	129	133.4	3.0	4	181	185.5	5.1
Influenza and pneumonia (480-487)	-	300	154.4	3.8	-	157	162.4	3.7	5	143	146.5	4.0
Accidents (E800-E949, E980-E989)	-	274	141.0	3.5	5	191	197.5	4.5	-	83	85.0	2.3
All other causes		1876	965.5	24.1		1112	1149.9	26.1		764	782.8	21.6
ECUADOR, 1987												
All causes		18490	5064.4	100.0		9180	5387.3	100.0		9310	4781.7	100.0
Symptoms and ill-defined conditions (780-799)		4040	1106.5	21.8		1803	1058.1	19.6		2237	1148.9	24.0
Total number of deaths from defined causes**		14450	3957.8	100.0		7377	4329.2	100.0		7073	3632.8	100.0
Diseases of the heart (390-429)	1	3597	985.2	24.9	1	1758	1031.7	23.8	1	1839	944.5	26.0
Malignant neoplasms (140-208)	2	2460	673.8	17.0	2	1204	706.6	16.3	2	1256	645.1	17.8
Cerebrovascular disease (430-438)	3	1556	426.2	10.8	3	734	430.8	9.9	3	822	422.2	11.6
Influenza and pneumonia (480-487)	4	981	268.7	6.8	4	463	271.7	6.3	4	518	266.1	7.3
Accidents (E800-E949, E980-E989)	5	650	178.0	4.5	5	434	254.7	5.9	-	216	110.9	3.1
Diabetes mellitus (250)	-	502	137.5	3.5	-	189	110.9	2.6	5	313	160.8	4.4
All other causes		4704	1288.4	32.6		2595	1522.9	35.2		2109	1083.2	29.8
EL SALVADOR, 1984												
All causes		8734	5418.1	100.0		4433	6351.0	100.0		4301	4705.7	100.0
Symptoms and ill-defined conditions (780-799)		3617	2243.8	41.4		1695	2428.4	38.2		1922	2102.8	44.7
Total number of deaths from defined causes**		5117	3174.3	100.0		2738	3922.6	100.0		2379	2602.8	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
EL SALVADOR, 1984 (cont.)												
Diseases of the heart (390-429)	1	1137	705.3	22.2	1	593	849.6	21.7	1	544	595.2	22.9
Cerebrovascular disease (430-438)	2	486	301.5	9.5	2	237	339.5	8.7	2	249	272.4	10.5
Malignant neoplasms (140-208)	3	408	253.1	8.0	4	182	260.7	6.6	3	226	247.3	9.5
Accidents (E800-E949, E980-E989)	4	337	209.1	6.6	3	216	309.5	7.9	5	121	132.4	5.1
Influenza and pneumonia (480-487)	5	260	161.3	5.1	-	138	197.7	5.0	4	122	133.5	5.1
Intestinal infections due to specified organisms and ill defined (007-009).	-	241	149.5	4.7	5	147	210.6	5.4	-	94	102.8	4.0
All other causes		2248	1394.5	43.9		1225	1755.0	44.7		1023	1119.3	43.0
FRENCH GUIANA, 1984												
All causes		210	6501.5	100.0		117	7748.3	100.0		93	5407.0	100.0
Symptoms and ill-defined conditions (780-799)		44	1362.2	21.0		25	1655.6	21.4		19	1104.7	20.4
Total number of deaths from defined causes**		166	5139.3	100.0		92	6092.7	100.0		74	4302.3	100.0
Diseases of the heart (390-429)	1	52	1609.9	31.3	1	25	1655.6	27.2	1	27	1569.8	36.5
Malignant neoplasms (140-208)	2	26	805.0	15.7	2	17	1125.8	18.5	3	9	523.3	12.2
Cerebrovascular disease (430-438)	3	25	774.0	15.1	3	12	794.7	13.0	2	13	755.8	17.6
Bronchitis, emphysema and asthma (490-493)	4	12	371.5	7.2	4	7	463.6	7.6	4	5	290.7	6.8
Chronic liver disease and cirrhosis (571)	5	9	278.6	5.4	5	6	397.4	6.5	-	3	174.4	4.1
Accidents (E800-E949, E980-E989)	-	7	216.7	4.2	-	3	198.7	3.3	5	4	232.6	5.4
All other causes		35	1083.6	21.1		22	1457.0	23.9		13	755.8	17.6
GUADELOUPE, 1981												
All causes		1182	4546.2	100.0		567	5154.5	100.0		615	4100.0	100.0
Symptoms and ill-defined conditions (780-799)		158	607.7	13.4		66	600.0	11.6		92	613.3	15.0
Total number of deaths from defined causes**		1024	3938.5	100.0		501	4554.5	100.0		523	3486.7	100.0
Diseases of the heart (390-429)	1	309	1188.5	30.2	1	136	1236.4	27.1	1	173	1153.3	33.1
Malignant neoplasms (140-208)	2	179	688.5	17.5	2	100	909.1	20.0	3	79	526.7	15.1
Cerebrovascular disease (430-438)	3	151	580.8	14.7	3	63	572.7	12.6	2	88	586.7	16.8
Accidents (E800-E949, E980-E989)	4	62	238.5	6.1	4	36	327.3	7.2	5	26	173.3	5.0
Diabetes mellitus (250)	5	53	203.8	5.2	-	14	127.3	2.8	4	39	260.0	7.5
Mental disorders (290-319)	-	34	130.8	3.3	5	28	254.5	5.6	-	6	40.0	1.1
All other causes		236	907.7	23.0		124	1127.3	24.8		112	746.7	21.4
GUATEMALA, 1984												
All causes		12344	5447.5	100.0		6420	5789.0	100.0		5924	5120.1	100.0
Symptoms and ill-defined conditions (780-799)		2144	946.2	17.4		1100	991.9	17.1		1044	902.3	17.6
Total number of deaths from defined causes**		10200	4501.3	100.0		5320	4797.1	100.0		4880	4217.8	100.0
Diseases of the heart (390-429)	1	1952	861.4	19.1	1	1040	937.8	19.5	1	912	788.2	18.7
Influenza and pneumonia (480-487)	2	1556	686.7	15.3	2	876	789.9	16.5	2	680	587.7	13.9
Intestinal infections due to specified organisms and ill defined (007-009).	3	1224	540.2	12.0	3	628	566.3	11.8	3	596	515.1	12.2
Malignant neoplasms (140-208)	4	1028	453.7	10.1	5	448	404.0	8.4	4	580	501.3	11.9
Nutritional deficiencies (260-269) ...	5	1020	450.1	10.0	4	544	490.5	10.2	5	476	411.4	9.8
All other causes		3420	1509.3	33.5		1784	1608.7	33.5		1636	1414.0	33.5
GUYANA, 1984												
All causes		1675	4490.6	100.0		876	4949.2	100.0		799	4076.5	100.0
Symptoms and ill-defined conditions (780-799)		281	753.4	16.8		119	672.3	13.6		162	826.5	20.3
Total number of deaths from defined causes**		1394	3737.3	100.0		757	4276.8	100.0		637	3250.0	100.0
Diseases of the heart (390-429)	1	428	1147.5	30.7	1	243	1372.9	32.1	1	185	943.9	29.0
Cerebrovascular disease (430-438)	2	292	782.8	20.9	2	148	836.2	19.6	2	144	734.7	22.6
Malignant neoplasms (140-208)	3	128	343.2	9.2	3	67	378.5	8.9	3	61	311.2	9.6
Diabetes mellitus (250)	4	63	168.9	4.5	-	23	129.9	3.0	4	40	204.1	6.3
Influenza and pneumonia (480-487)	4	63	168.9	4.5	4	32	180.8	4.2	5	31	158.2	4.9

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
GUYANA, 1984 (cont.)												
Accidents (E800-E949, E980-E989)	5	40	107.2	2.9	5	29	163.8	3.8	-	11	56.1	1.7
All other causes		380	1018.8	27.3		215	1214.7	28.4		165	841.8	25.9
HONDURAS, 1981												
All causes		5538	5350.7	100.0		2943	5921.5	100.0		2595	4823.4	100.0
Symptoms and ill-defined conditions (780-799)		2711	2619.3	49.0		1397	2810.9	47.5		1314	2442.4	50.6
Total number of deaths from defined causes**		2827	2731.4	100.0		1546	3110.7	100.0		1281	2381.0	100.0
Diseases of the heart (390-429)	1	686	662.8	24.3	1	355	714.3	23.0	1	331	615.2	25.8
Cerebrovascular disease (430-438)	2	269	259.9	9.5	3	137	275.7	8.9	3	132	245.4	10.3
Malignant neoplasms (140-208)	3	238	230.0	8.4	4	101	203.2	6.5	2	137	254.6	10.7
All accidents and violence (E800-E999)	4	200	193.2	7.1	2	161	323.9	10.4	-	38	72.5	3.0
Intestinal infections due to specified organisms and ill defined (007-009).	5	168	162.3	5.9	5	97	195.2	6.3	4	71	132.0	5.5
Bronchitis, emphysema and asthma (490-493)	-	146	141.1	5.2	-	77	154.9	5.0	5	69	128.3	5.4
All other causes		1120	1082.1	39.6		618	1243.5	40.0		502	933.1	39.2
JAMAICA, 1984												
All causes		8364	5936.1	100.0		4097	6503.2	100.0		4267	5477.5	100.0
Symptoms and ill-defined conditions (780-799)		1135	805.5	13.6		551	874.6	13.4		584	749.7	13.7
Total number of deaths from defined causes**		7229	5130.6	100.0		3546	5628.6	100.0		3683	4727.9	100.0
Diseases of the heart (390-429)	1	2094	1486.2	29.0	1	989	1569.8	27.9	1	1105	1418.5	30.0
Cerebrovascular disease (430-438)	2	1539	1092.3	21.3	3	648	1028.6	18.3	2	891	1143.8	24.2
Malignant neoplasms (140-208)	3	1218	864.4	16.8	2	690	1095.2	19.5	3	528	677.8	14.3
Diabetes mellitus (250)	4	484	343.5	6.7	4	175	277.8	4.9	4	309	396.7	8.4
Influenza and pneumonia (480-487)	5	237	168.2	3.3	5	116	184.1	3.3	5	121	155.3	3.3
All other causes		1657	1176.0	22.9		928	1473.0	26.2		729	935.8	19.8
MARTINIQUE, 1985												
All causes		1403	4398.1	100.0		702	5014.3	100.0		701	3916.2	100.0
Symptoms and ill-defined conditions (780-799)		182	570.5	13.0		77	550.0	11.0		105	586.6	15.0
Total number of deaths from defined causes**		1221	3827.6	100.0		625	4464.3	100.0		596	3329.6	100.0
Cerebrovascular disease (430-438)	1	284	890.3	23.3	2	145	1035.7	23.2	2	139	776.5	23.3
Diseases of the heart (390-429)	2	269	843.3	22.0	3	109	778.6	17.4	1	160	893.9	26.8
Malignant neoplasms (140-208)	3	256	802.5	21.0	1	151	1078.6	24.2	3	105	586.6	17.6
Accidents (E800-E949, E980-E989)	4	47	147.3	3.8	4	28	200.0	4.5	5	19	106.1	3.2
Diabetes mellitus (250)	5	46	144.2	3.8	-	16	114.3	2.6	4	30	167.6	5.0
Influenza and pneumonia (480-487)	-	31	97.2	2.5	5	17	121.4	2.7	-	14	78.2	2.3
All other causes		288	902.8	23.6		159	1135.7	25.4		129	720.7	21.6
MEXICO, 1986												
All causes		154305	5366.4	100.0		75112	5821.7	100.0		78411	4946.4	100.0
Symptoms and ill-defined conditions (780-799)		7743	269.3	5.0		3251	252.0	4.3		3710	234.0	4.7
Total number of deaths from defined causes**		146562	5097.1	100.0		71861	5569.8	100.0		74701	4712.4	100.0
Diseases of the heart (390-429)	1	34176	1188.6	23.3	1	15705	1217.3	21.9	1	18471	1165.2	24.7
Malignant neoplasms (140-208)	2	17777	618.2	12.1	2	8907	690.4	12.4	2	8870	559.6	11.9
Diabetes mellitus (250)	3	13054	454.0	8.9	4	5152	399.3	7.2	3	7902	498.5	10.6
Cerebrovascular disease (430-438)	4	12466	433.5	8.5	3	5539	429.3	7.7	4	6927	437.0	9.3
Influenza and pneumonia (480-487)	5	6862	238.6	4.7	-	3367	261.0	4.7	5	3495	220.5	4.7
Accidents (E800-E949, E980-E989)	-	5942	206.6	4.1	5	3775	292.6	5.3	-	2167	136.7	2.9
All other causes		56285	1957.5	38.4		29416	2280.0	40.9		26869	1695.0	36.0
NETHERLANDS ANTILLES (CURACAO), 1981												
All causes		543	5430.0	100.0		238	4760.0	100.0		305	6100.0	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
NETHERLANDS ANTILLES (CURACAO), 1981 (cont.)												
Symptoms and ill-defined conditions (780-799)		72	720.0	15.3		19	380.0	8.0		53	1060.0	17.4
Total number of deaths from defined causes**		471	4710.0	100.0		219	4380.0	100.0		252	5040.0	100.0
Malignant neoplasms (140-208)	1	122	1220.0	25.9	1	61	1220.0	27.9	2	61	1220.0	24.2
Diseases of the heart (390-429)	2	118	1180.0	25.1	2	54	1080.0	24.7	1	64	1280.0	25.4
Cerebrovascular disease (430-438)	3	70	700.0	14.9	3	28	560.0	12.8	3	42	840.0	16.7
Influenza and pneumonia (480-487)	4	23	230.0	4.9	4	9	180.0	4.1	4	14	280.0	5.6
Bronchitis, emphysema and asthma (490-493)	5	9	90.0	1.9	5	8	160.0	3.7	-	1	20.0	0.4
Diabetes mellitus (250)	-	8	80.0	1.7	-	3	60.0	1.4	5	5	100.0	2.0
All other causes		121	1210.0	25.7		56	1120.0	25.6		65	1300.0	25.8
PANAMA, 1987												
All causes		4364	4316.5	100.0		2343	4585.1	100.0		2021	4042.0	100.0
Symptoms and ill-defined conditions (780-799)		392	387.7	9.0		208	407.0	8.9		184	368.0	9.1
Total number of deaths from defined causes**		3972	3928.8	100.0		2135	4178.1	100.0		1837	3674.0	100.0
Diseases of the heart (390-429)	1	1148	1135.5	28.9	1	593	1160.5	27.8	1	555	1110.0	30.2
Cerebrovascular disease (430-438)	2	680	672.6	17.1	3	339	663.4	15.9	2	341	682.0	18.6
Malignant neoplasms (140-208)	3	668	660.7	16.8	2	389	761.3	18.2	3	279	558.0	15.2
Influenza and pneumonia (480-487)	4	174	172.1	4.4	4	96	187.9	4.5	4	78	156.0	4.2
Accidents (E800-E949, E980-E989)	5	136	134.5	3.4	4	96	187.9	4.5	-	40	80.0	2.2
Diabetes mellitus (250)	-	95	94.0	2.4	-	33	64.6	1.5	5	62	124.0	3.4
Bronchitis, emphysema and asthma (490-493)	-	94	93.0	2.4	5	52	101.8	2.4	-	42	84.0	2.3
All other causes		977	966.4	24.6		537	1050.9	25.2		440	880.0	24.0
PARAGUAY (AREA OF INFORMATION), 1986												
All causes		5472	6755.6	100.0		2668	7309.6	100.0		2804	6301.1	100.0
Symptoms and ill-defined conditions (780-799)		1120	1382.7	20.5		504	1380.8	18.9		616	1384.3	22.0
Total number of deaths from defined causes**		4352	5372.8	100.0		2164	5928.8	100.0		2188	4916.9	100.0
Diseases of the heart (390-429)	1	1502	1854.3	34.5	1	737	2019.2	34.1	1	765	1719.1	35.0
Cerebrovascular disease (430-438)	2	933	1151.9	21.4	2	462	1265.8	21.3	2	471	1058.4	21.5
Malignant neoplasms (140-208)	3	500	617.3	11.5	3	261	715.1	12.1	3	239	537.1	10.9
Diabetes mellitus (250)	4	182	224.7	4.2	4	74	202.7	3.4	4	108	242.7	4.9
Influenza and pneumonia (480-487)	5	155	191.4	3.6	5	69	189.0	3.2	5	86	193.3	3.9
All other causes		1080	1333.3	24.8		561	1537.0	25.9		519	1166.3	23.7
PERU, 1983												
All causes		26555	3949.9	100.0		12807	4175.7	100.0		13748	3760.4	100.0
Symptoms and ill-defined conditions (780-799)		2446	363.8	9.2		1065	347.2	8.3		1381	377.7	10.0
Total number of deaths from defined causes**		24109	3586.0	100.0		11742	3828.5	100.0		12367	3382.7	100.0
Influenza and pneumonia (480-487)	1	4351	647.2	18.0	1	1995	650.5	17.0	1	2356	644.4	19.1
Diseases of the heart (390-429)	2	4313	641.5	17.9	2	1985	647.2	16.9	2	2328	636.8	18.8
Malignant neoplasms (140-208)	3	2844	423.0	11.8	3	1466	478.0	12.5	3	1378	376.9	11.1
Cerebrovascular disease (430-438)	4	1570	233.5	6.5	4	775	252.7	6.6	4	795	217.5	6.4
Tuberculosis (010-018)	5	1034	153.8	4.3	5	612	199.5	5.2	-	422	115.4	3.4
Intestinal infections due to specified organisms and ill defined (007-009).	-	834	124.1	3.5	-	355	115.7	3.0	5	479	131.0	3.9
All other causes		9163	1362.9	38.0		4554	1484.8	38.8		4609	1260.7	37.3
PUERTO RICO, 1987												
All causes		15068	5118.2	100.0		7964	5817.4	100.0		7104	4510.5	100.0
Symptoms and ill-defined conditions (780-799)	-	132	44.8	0.9		55	40.2	0.7		77	48.9	1.1
Total number of deaths from defined causes**		14936	5073.4	100.0		7909	5777.2	100.0		7027	4461.6	100.0
Diseases of the heart (390-429)	1	5431	1844.8	36.4	1	2772	2024.8	35.0	1	2659	1688.3	37.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
PUERTO RICO, 1987 (cont.)												
Malignant neoplasms (140-208)	2	2408	817.9	16.1	2	1439	1051.1	18.2	2	959	615.2	13.8
Cerebrovascular disease (430-438)	3	1118	379.8	7.5	4	523	382.0	6.6	3	595	377.8	8.5
Influenza and pneumonia (480-487)	4	982	333.6	6.6	3	535	390.8	6.8	5	447	283.8	6.4
Diabetes mellitus (250)	5	801	272.1	5.4	5	330	241.1	4.2	4	471	299.0	6.7
All other causes		4196	1425.3	28.1		2310	1687.4	29.2		1886	1197.5	26.8
ST. KITTS AND NEVIS, 1985												
All causes		289	7083.3	100.0		121	7333.3	100.0		168	6913.6	100.0
Symptoms and ill-defined conditions (780-799)		36	882.4	12.5		8	484.8	6.6		28	1152.3	16.7
Total number of deaths from defined causes**		253	6201.0	100.0		113	6848.5	100.0		140	5761.3	100.0
Cerebrovascular disease (430-438)	1	89	2181.4	35.2	1	33	2000.0	29.2	1	56	2304.5	40.0
Diseases of the heart (390-429)	2	63	1544.1	24.9	2	31	1878.8	27.4	2	32	1316.9	22.9
Malignant neoplasms (140-208)	3	28	686.3	11.1	3	12	727.3	10.6	3	16	658.4	11.4
Influenza and pneumonia (480-487)	4	16	392.2	6.3	4	7	424.2	6.2	4	9	370.4	6.4
Nutritional deficiencies (260-269) ...	5	6	147.1	2.4	-	1	60.6	0.9	5	5	205.8	3.6
Nephritis, nephrotic syndrome and nephrosis (580-589)	-	5	122.5	2.0	5	4	242.4	3.5	-	1	41.2	0.7
Accidents (E800-E949, E980-E989)	-	4	98.0	1.6	5	4	242.4	3.5	-	-	-	-
All other causes		42	1029.4	16.6		21	1272.7	18.6		21	864.2	15.0
SAINT LUCIA, 1988												
All causes		514	7021.9	100.0		247	7891.4	100.0		267	6372.3	100.0
Symptoms and ill-defined conditions (780-799)		82	1120.2	16.0		29	926.5	11.7		53	1264.9	19.9
Total number of deaths from defined causes**		432	5901.6	100.0		218	6964.9	100.0		214	5107.4	100.0
Diseases of the heart (390-429)	1	139	1898.9	32.2	1	71	2268.4	32.6	1	68	1622.9	31.8
Cerebrovascular disease (430-438)	2	93	1270.5	21.5	2	46	1469.6	21.1	2	47	1121.7	22.0
Malignant neoplasms (140-208)	3	63	860.7	14.6	3	32	1022.4	14.7	3	31	739.9	14.5
Diabetes mellitus (250)	4	28	382.5	6.5	5	10	319.5	4.6	4	18	429.6	8.4
Influenza and pneumonia (480-487)	5	21	286.9	4.9	4	11	351.4	5.0	5	10	238.7	4.7
All other causes		88	1202.2	20.4		48	1533.5	22.0		40	954.7	18.7
ST. VINCENT & THE GRENADINES, 1986												
All causes		332	5876.1	100.0		154	6470.6	100.0		178	5443.4	100.0
Symptoms and ill-defined conditions (780-799)		38	672.6	11.4		16	672.3	10.4		22	672.8	12.4
Total number of deaths from defined causes**		294	5203.5	100.0		138	5798.3	100.0		156	4770.6	100.0
Diseases of the heart (390-429)	1	117	2070.8	39.8	1	51	2142.9	37.0	1	66	2018.3	42.3
Cerebrovascular disease (430-438)	2	52	920.4	17.7	2	24	1008.4	17.4	2	28	856.3	17.9
Malignant neoplasms (140-208)	3	38	672.6	12.9	3	17	714.3	12.3	3	21	642.2	13.5
Diabetes mellitus (250)	4	28	495.6	9.5	4	7	294.1	5.1	3	21	642.2	13.5
Nephritis, nephrotic syndrome and nephrosis (580-589)	5	6	106.2	2.0	5	5	210.1	3.6	-	1	30.6	0.6
Anemias (280-285)	-	5	88.5	1.7	-	1	42.0	0.7	4	4	122.3	2.6
Hyperplasia of prostate (600)	-	5	88.5	1.7	5	5	210.1	3.6	-	-	-	-
Accidents (E800-E949, E980-E989)	-	4	70.8	1.4	-	2	84.0	1.4	5	2	61.2	1.3
All other causes		39	690.3	13.3		26	1092.4	18.8		13	397.6	8.3
SURINAME, 1985												
All causes		980	8125.0	100.0		489	6985.7	100.0		491	5455.6	100.0
Symptoms and ill-defined conditions (780-799)		246	1537.5	25.1		108	1542.9	22.1		138	1533.3	28.1
Total number of deaths from defined causes**		734	4587.5	100.0		381	5442.9	100.0		353	3922.2	100.0
Diseases of the heart (390-429)	1	227	1418.8	30.9	1	106	1542.9	28.3	1	119	1322.2	33.7
Cerebrovascular disease (430-438)	2	103	643.8	14.0	3	49	700.0	12.9	2	54	600.0	15.3
Malignant neoplasms (140-208)	3	89	556.3	12.1	2	50	714.3	13.1	3	39	433.3	11.0
Influenza and pneumonia (480-487)	4	45	281.3	6.1	5	26	371.4	6.8	5	19	211.1	5.4
Diabetes mellitus (250)	5	41	256.3	5.6	-	17	242.9	4.5	4	24	266.7	6.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
SURINAME, 1985 (cont.)												
Bronchitis, emphysema and asthma (490-493)	-	40	250.0	5.4	4	27	385.7	7.1	-	13	144.4	3.7
All other causes		189	1181.3	25.7		104	1485.7	27.3		85	944.4	24.1
TRINIDAD AND TOBAGO, 1986												
All causes		4275	6467.5	100.0		2152	7055.7	100.0		2123	5963.5	100.0
Symptoms and ill-defined conditions (780-799)		120	181.5	2.8		43	141.0	2.0		77	216.3	3.6
Total number of deaths from defined causes**		4155	6285.9	100.0		2109	6914.8	100.0		2046	5747.2	100.0
Diseases of the heart (390-429)	1	1327	2007.6	31.9	1	678	2223.0	32.1	1	649	1823.0	31.7
Cerebrovascular disease (430-438)	2	694	1049.9	16.7	3	322	1055.7	15.3	2	372	1044.9	18.2
Malignant neoplasms (140-208)	3	609	921.3	14.7	2	333	1091.8	15.8	4	276	775.3	13.5
Diabetes mellitus (250)	4	484	732.2	11.6	4	193	632.8	9.2	3	291	817.4	14.2
Influenza and pneumonia (480-487)	5	137	207.3	3.3	5	68	223.0	3.2	5	69	193.8	3.4
All other causes		904	1367.6	21.8		515	1688.5	24.4		369	1092.7	19.0
UNITED STATES, 1987												
All causes		1509666	5060.1	100.0		715339	5902.6	100.0		794347	4483.8	100.0
Symptoms and ill-defined conditions (780-799)		14554	48.8	1.0		6731	55.5	0.9		7823	44.2	1.0
Total number of deaths from defined causes**		1495132	5011.3	100.0		708608	5847.1	100.0		786524	4439.6	100.0
Diseases of the heart (390-429)	1	625701	2097.2	41.8	1	288136	2377.6	40.7	1	337565	1905.4	42.9
Malignant neoplasms (140-208)	2	316199	1059.8	21.1	2	169314	1397.1	23.9	2	146885	829.1	18.7
Cerebrovascular disease (430-438)	3	129784	435.0	8.7	3	46377	399.2	6.8	3	81407	459.5	10.4
Influenza and pneumonia (480-487)	4	60542	202.9	4.0	4	28061	231.5	4.0	4	32481	183.3	4.1
Diabetes mellitus (250)	5	28377	95.1	1.9	-	10907	90.0	1.5	5	17470	98.6	2.2
Accidents (E800-E949, E980-E989)	-	26193	87.8	1.8	5	13457	111.0	1.9	-	12736	71.9	1.6
All other causes		308336	1033.5	20.6		150356	1240.7	21.2		157980	891.7	20.1
URUGUAY, 1987												
All causes		20108	6112.6	100.0		9934	7038.9	100.0		10174	5416.6	100.0
Symptoms and ill-defined conditions (780-799)		1163	353.5	5.8		579	410.3	5.8		584	310.9	5.7
Total number of deaths from defined causes**		18945	5759.1	100.0		9355	6628.6	100.0		9590	5105.7	100.0
Diseases of the heart (390-429)	1	5699	1732.4	30.1	1	2798	1982.6	29.9	1	2901	1544.5	30.3
Malignant neoplasms (140-208)	2	4169	1267.3	22.0	2	2397	1698.4	25.6	3	1772	943.4	18.5
Cerebrovascular disease (430-438)	3	3077	935.4	16.2	3	1192	844.6	12.7	2	1885	1003.6	19.7
Influenza and pneumonia (480-487)	4	519	157.8	2.7	4	232	164.4	2.5	5	287	152.8	3.0
Diabetes mellitus (250)	5	505	153.5	2.7	-	180	127.5	1.9	4	325	173.0	3.4
Accidents (E800-E949, E980-E989)	-	455	138.3	2.4	5	219	155.2	2.3	-	236	125.6	2.5
All other causes		4521	1374.3	23.9		2337	1655.9	25.0		2184	1162.8	22.8
VENEZUELA, 1987												
All causes		32502	5231.0	100.0		16239	5721.8	100.0		16263	4818.4	100.0
Symptoms and ill-defined conditions (780-799)		5512	887.1	17.0		2835	998.9	17.5		2677	793.1	16.5
Total number of deaths from defined causes**		26990	4343.9	100.0		13404	4722.9	100.0		13586	4025.2	100.0
Diseases of the heart (390-429)	1	8904	1433.1	33.0	1	4377	1542.2	32.7	1	4527	1341.3	33.3
Malignant neoplasms (140-208)	2	4382	705.3	16.2	2	2275	801.6	17.0	2	2107	624.3	15.5
Cerebrovascular disease (430-438)	3	3436	553.0	12.7	3	1565	551.4	11.7	3	1871	554.3	13.8
Influenza and pneumonia (480-487)	4	1409	226.8	5.2	4	676	238.2	5.0	5	733	217.2	5.4
Diabetes mellitus (250)	5	1378	221.8	5.1	-	544	191.7	4.1	4	834	247.1	6.1
Accidents (E800-E949, E980-E989)	-	968	155.8	3.6	5	605	213.2	4.5	-	363	107.5	2.7
All other causes		6513	1048.2	24.1		3362	1184.6	25.1		3151	933.6	23.2
VIRGIN ISLANDS (US), 1980												
All causes		231	4459.5	100.0		106	4690.3	100.0		125	4280.8	100.0
Total number of deaths from defined causes**		231	4459.5	100.0		106	4690.3	100.0		125	4280.8	100.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-10h (*Cont.*).

Five leading causes of death in the population 65 years and over, according to proportional mortality and rates per 100,000 population, by sex and country, latest data available.

Country and causes of death (ICD, 9th Revision)*	Total, 65 years and over				Male, 65 years and over				Female, 65 years and over			
	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **	Rank Order	Number	Rate	% **
VIRGIN ISLANDS (US), 1980 (cont.)												
Diseases of the heart (390-429)	1	29	559.8	12.6	1	10	442.5	9.4	1	19	650.7	15.2
Cerebrovascular disease (430-438)	2	19	366.8	8.2	2	8	354.0	7.5	2	11	376.7	8.8
Malignant neoplasms (140-208)	3	4	77.2	1.7	3	3	132.7	2.8	3	1	34.2	0.8
Accidents (E800-E949, E980-E989)	3	4	77.2	1.7	3	3	132.7	2.8	3	1	34.2	0.8
Mental disorders (290-319)	4	3	57.9	1.3	3	3	132.7	2.8	-	-	-	-
Benign neoplasms, carcinoma in situ and other neoplasms (210-239)	5	1	19.3	0.4	4	1	44.2	0.9	-	-	-	-
All other causes		171	3301.2	74.0		78	3451.3	73.6		93	3184.9	74.4

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes.

TABLE III-11.

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
ARGENTINA, 1986			BOTH SEXES				
All causes	98,886	41.0	2,580,772		100.0	9,185.3	26.1
Symptoms and ill-defined conditions (780-799)	2,636	48.3	100,804		3.9	358.8	38.2
Total number of deaths from defined causes**	96,250	40.9	2,479,967		100.0	8,826.5	25.8
Certain conditions originating in the perinatal period (760-779)	9,631	100.0	625,591	1	25.2	2,226.5	65.0
Accidents (E800-E949, E980-E989)	9,304	75.3	314,377	2	12.7	1,118.9	33.8
Diseases of the heart (390-429)	21,182	27.6	294,423	3	11.9	1,047.9	13.9
Malignant neoplasms (140-208)	18,529	43.4	239,140	4	9.6	851.1	12.9
Congenital anomalies (740-759)	2,861	98.0	179,059	5	7.2	637.3	62.6
			MALE				
All causes	62,309	46.6	1,536,216		100.0	10,885.1	24.7
Symptoms and ill-defined conditions (780-799)	1,586	50.6	57,628		3.8	408.3	36.3
Total number of deaths from defined causes**	60,723	46.5	1,478,589		100.0	10,476.8	24.3
Certain conditions originating in the perinatal period (760-779)	5,470	100.0	355,321	1	24.0	2,517.7	65.0
Accidents (E800-E949, E980-E989)	7,004	80.8	227,932	2	15.4	1,615.1	32.5
Diseases of the heart (390-429)	14,707	35.1	189,954	3	12.8	1,346.0	12.9
Malignant neoplasms (140-208)	10,531	44.0	128,436	4	8.7	910.1	12.2
Congenital anomalies (740-759)	1,550	98.2	96,941	5	6.6	686.9	62.5
			FEMALE				
All causes	36,048	34.1	1,026,705		100.0	7,342.0	28.5
Symptoms and ill-defined conditions (780-799)	1,030	45.6	42,284		4.1	302.4	41.1
Total number of deaths from defined causes**	35,018	33.8	984,421		100.0	7,039.7	28.1
Certain conditions originating in the perinatal period (760-779)	4,089	100.0	265,605	1	27.0	1,899.4	65.0
Malignant neoplasms (140-208)	7,931	42.6	109,066	2	11.1	779.9	13.8
Diseases of the heart (390-429)	6,355	18.4	101,580	3	10.3	726.4	16.0
Accidents (E800-E949, E980-E989)	2,247	63.3	84,539	4	8.6	604.5	37.6
Congenital anomalies (740-759)	1,299	98.2	81,341	5	8.3	581.7	62.6
BAHAMAS, 1987			BOTH SEXES				
All causes	837	59.3	24,391		100.0	10,391.5	29.1
Symptoms and ill-defined conditions (780-799)	14	38.9	411		1.7	175.1	29.4
Total number of deaths from defined causes**	823	59.9	23,980		100.0	10,216.4	29.1
Accidents (E800-E949, E980-E989)	138	89.0	5,138	1	21.4	2,189.0	37.2
Malignant neoplasms (140-208)	139	52.1	2,044	2	8.5	870.8	14.7
Diseases of the heart (390-429)	98	39.2	1,426	3	5.9	607.5	14.6
Congenital anomalies (740-759)	21	91.3	1,299	4	5.4	553.4	61.8
Influenza and pneumonia (480-487)	33	58.9	1,182	5	4.9	503.6	35.8
			MALE				
All causes	494	64.1	14,124		100.0	12,061.6	28.6
Symptoms and ill-defined conditions (780-799)	8	50.0	274		1.9	234.0	34.3
Total number of deaths from defined causes**	486	64.4	13,850		100.0	11,827.6	28.5
Accidents (E800-E949, E980-E989)	106	91.4	3,820	1	27.6	3,262.2	36.0
Malignant neoplasms (140-208)	83	50.3	1,197	2	8.6	1,022.2	14.4
Diseases of the heart (390-429)	58	45.0	855	3	6.2	730.2	14.7
Influenza and pneumonia (480-487)	23	69.7	804	4	5.8	686.6	34.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	18	85.7	690	5	5.0	589.2	38.3
			FEMALE				
All causes	310	51.2	9,261		100.0	7,873.5	29.9
Symptoms and ill-defined conditions (780-799)	6	30.0	137		1.5	116.5	22.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
BAHAMAS, 1987 (cont.)			FEMALE				
Total number of deaths from defined causes**	304	52.0	9,124		100.0	7,757.1	30.0
Accidents (E800-E949, E980-E989)	32	82.1	1,319	1	14.5	1,121.4	41.2
Malignant neoplasms (140-208)	56	54.9	847	2	9.3	720.1	15.1
Congenital anomalies (740-759)	11	91.7	678	3	7.4	576.4	61.6
Diseases of the heart (390-429)	40	33.1	572	4	6.3	486.3	14.3
Influenza and pneumonia (480-487)	10	43.5	378	5	4.1	321.4	37.8
BARBADOS, 1988			BOTH SEXES				
All causes	561	25.8	13,577		100.0	...	24.2
Symptoms and ill-defined conditions (780-799)	11	13.4	215		1.6	...	19.5
Total number of deaths from defined causes**	550	26.3	13,362		100.0	...	24.3
Certain conditions originating in the perinatal period (760-779)	44	100.0	2,859	1	21.4	...	65.0
Accidents (E800-E949, E980-E989)	53	63.9	1,628	2	12.2	...	30.7
Malignant neoplasms (140-208)	114	27.6	1,330	3	10.0	...	11.7
Diseases of the heart (390-429)	87	17.2	1,223	4	9.2	...	14.1
Congenital anomalies (740-759)	18	94.7	1,147	5	8.6	...	63.7
			MALE				
All causes	320	29.8	7,413		100.0	...	23.2
Symptoms and ill-defined conditions (780-799)	10	25.0	203		2.7	...	20.3
Total number of deaths from defined causes**	310	30.0	7,210		100.0	...	23.3
Certain conditions originating in the perinatal period (760-779)	22	100.0	1,430	1	19.8	...	65.0
Accidents (E800-E949, E980-E989)	46	75.4	1,419	2	19.7	...	30.8
Diseases of the heart (390-429)	55	23.0	708	3	9.8	...	12.9
Malignant neoplasms (140-208)	50	23.7	480	4	6.7	...	9.6
Congenital anomalies (740-759)	6	85.7	388	5	5.4	...	64.7
			FEMALE				
All causes	241	21.9	6,164		100.0	...	25.6
Symptoms and ill-defined conditions (780-799)	1	2.4	13		0.2	...	12.5
Total number of deaths from defined causes**	240	22.7	6,152		100.0	...	25.6
Certain conditions originating in the perinatal period (760-779)	22	100.0	1,429	1	23.2	...	65.0
Malignant neoplasms (140-208)	64	31.7	850	2	13.8	...	13.3
Congenital anomalies (740-759)	12	100.0	759	3	12.3	...	63.2
Diseases of the heart (390-429)	32	11.9	515	4	8.4	...	16.1
Cerebrovascular disease (430-438)	19	12.5	339	5	5.5	...	17.8
BELIZE, 1986			BOTH SEXES				
All causes	431	54.8	18,012		100.0	11,511.5	41.8
Symptoms and ill-defined conditions (780-799)	28	32.9	1,465		8.1	920.0	52.3
Total number of deaths from defined causes**	403	57.4	16,547		100.0	10,391.5	41.1
Certain conditions originating in the perinatal period (760-779)	51	100.0	3,314	1	20.0	2,081.2	65.0
Accidents (E800-E949, E980-E989)	75	91.5	2,773	2	16.8	1,741.4	37.0
Influenza and pneumonia (480-487)	46	57.5	2,308	3	13.9	1,449.4	50.2
Intestinal infections due to specified organisms and ill defined (007-009)	25	92.6	1,569	4	9.5	985.3	62.8
Nutritional deficiencies (260-269)	14	77.8	745	5	4.5	467.9	53.2
			MALE				
All causes	259	59.3	10,632		100.0	13,333.5	41.1
Symptoms and ill-defined conditions (780-799)	15	34.1	843		7.9	1,057.2	56.2
Total number of deaths from defined causes**	244	62.1	9,789		100.0	12,276.3	40.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
			MALE				
BELIZE, 1986 (cont.)							
Certain conditions originating in the perinatal period (760-779).....	33	100.0	2,145	1	21.9	2,690.0	65.0
Accidents (E800-E949, E980-E989)	57	90.5	1,992	2	20.3	2,498.2	35.0
Influenza and pneumonia (480-487)	25	59.5	1,180	3	12.1	1,479.8	47.2
Intestinal infections due to specified organisms and ill defined (007-009).	17	94.4	1,059	4	10.8	1,328.1	62.3
Nutritional deficiencies (260-269) ...	7	70.0	355	5	3.6	445.2	50.8
			FEMALE				
All causes	172	49.1	7,380		100.0	9,283.4	42.9
Symptoms and ill-defined conditions (780-799)	13	31.7	622		8.4	782.4	47.9
Total number of deaths from defined causes**	159	51.5	6,758		100.0	8,500.9	42.5
Certain conditions originating in the perinatal period (760-779).....	18	100.0	1,170	1	17.3	1,471.8	65.0
Influenza and pneumonia (480-487)	21	55.3	1,128	2	16.7	1,418.9	53.7
Accidents (E800-E949, E980-E989)	18	94.7	781	3	11.6	982.4	43.4
Intestinal infections due to specified organisms and ill defined (007-009).	8	88.9	510	4	7.5	641.5	63.7
Nutritional deficiencies (260-269) ...	7	87.5	389	5	5.8	489.3	55.6
			BOTH SEXES				
BRAZIL (AREA OF INFORMATION), 1986							
All causes	497,889	61.3	17,464,233		100.0	12,986.7	35.1
Symptoms and ill-defined conditions (780-799)	89,497	54.1	3,544,817		20.3	2,636.0	39.6
Total number of deaths from defined causes**	408,392	63.2	13,919,416		100.0	10,350.7	34.1
Certain conditions originating in the perinatal period (760-779).....	45,844	100.0	2,977,924	1	21.4	2,214.4	65.0
Accidents (E800-E949, E980-E989)	63,368	89.0	2,217,716	2	15.9	1,649.1	35.0
Intestinal infections due to specified organisms and ill defined (007-009).	21,881	91.1	1,349,129	3	9.7	1,003.2	61.7
Influenza and pneumonia (480-487)	23,975	67.4	1,197,535	4	8.6	890.5	49.9
Diseases of the heart (390-429)	55,211	41.7	819,807	5	5.9	609.6	14.8
			MALE				
All causes	314,738	66.0	10,706,713		100.0	15,937.9	34.0
Symptoms and ill-defined conditions (780-799)	53,808	57.6	2,027,670		18.9	3,018.4	37.7
Total number of deaths from defined causes**	260,930	68.0	8,679,044		100.0	12,919.6	33.3
Accidents (E800-E949, E980-E989)	51,068	91.0	1,747,489	1	20.1	2,601.3	34.2
Certain conditions originating in the perinatal period (760-779).....	26,597	100.0	1,727,673	2	19.9	2,571.8	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	12,336	92.5	758,437	3	8.7	1,129.0	61.5
Influenza and pneumonia (480-487)	13,988	70.4	675,845	4	7.8	1,006.1	48.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	17,871	95.8	612,862	5	7.1	912.3	34.3
			FEMALE				
All causes	182,448	54.7	6,723,881		100.0	9,990.9	36.9
Symptoms and ill-defined conditions (780-799)	35,606	49.4	1,514,076		22.5	2,249.7	42.5
Total number of deaths from defined causes**	146,842	56.2	5,209,804		100.0	7,741.2	35.5
Certain conditions originating in the perinatal period (760-779).....	18,968	100.0	1,232,119	1	23.7	1,830.8	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	9,521	89.4	589,147	2	11.3	875.4	61.9
Influenza and pneumonia (480-487)	9,953	63.6	519,665	3	10.0	772.2	52.2
Accidents (E800-E949, E980-E989)	12,248	82.1	468,429	4	9.0	696.0	38.2
Diseases of the heart (390-429)	20,765	34.8	322,563	5	6.2	479.3	15.5
			BOTH SEXES				
CANADA, 1988							
All causes	52,135	27.4	949,545		100.0	4,064.4	18.2
Symptoms and ill-defined conditions (780-799)	1,430	45.8	51,128		5.4	218.8	35.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
CANADA, 1988 (cont.)			**BOTH SEXES**				
Total number of deaths from defined causes**	50,705	27.1	898,417		100.0	3,845.6	17.7
Accidents (E800-E949, E980-E989)	6,540	68.0	210,201	1	23.4	899.7	32.1
Malignant neoplasms (140-208)	17,038	33.6	183,223	2	20.4	784.3	10.8
Diseases of the heart (390-429)	10,479	17.9	96,024	3	10.7	411.0	9.2
Suicide (E950-E959)	3,073	87.5	86,453	4	9.6	370.1	28.1
Congenital anomalies (740-759)	1,273	93.3	73,382	5	8.2	314.1	57.6
			MALE				
All causes	33,878	32.5	622,532		100.0	5,287.2	18.4
Symptoms and ill-defined conditions (780-799)	973	55.7	33,645		5.4	285.8	34.6
Total number of deaths from defined causes**	32,905	32.1	588,886		100.0	5,001.5	17.9
Accidents (E800-E949, E980-E989)	4,987	77.2	161,557	1	27.4	1,372.1	32.4
Malignant neoplasms (140-208)	9,209	32.8	93,264	2	15.8	792.1	10.1
Diseases of the heart (390-429)	8,013	24.9	73,648	3	12.5	625.5	9.2
Suicide (E950-E959)	2,400	87.8	68,850	4	11.7	584.8	28.7
Congenital anomalies (740-759)	694	94.2	40,132	5	6.8	340.8	57.8
			FEMALE				
All causes	18,257	21.3	327,014		100.0	2,822.0	17.9
Symptoms and ill-defined conditions (780-799)	457	33.2	17,483		5.3	150.9	38.3
Total number of deaths from defined causes**	17,800	21.1	309,531		100.0	2,671.1	17.4
Malignant neoplasms (140-208)	7,829	34.6	89,958	1	29.1	776.3	11.5
Accidents (E800-E949, E980-E989)	1,553	49.1	48,644	2	15.7	419.8	31.3
Congenital anomalies (740-759)	579	92.3	33,250	3	10.7	286.9	57.4
Certain conditions originating in the perinatal period (760-779)	450	100.0	29,223	4	9.4	252.2	64.9
Diseases of the heart (390-429)	2,466	9.4	22,376	5	7.2	193.1	9.1
CHILE, 1987			**BOTH SEXES**				
All causes	30,212	42.8	837,729		100.0	7,084.9	27.7
Symptoms and ill-defined conditions (780-799)	1,279	22.3	33,361		4.0	282.1	26.1
Total number of deaths from defined causes**	28,933	44.6	804,369		100.0	6,802.8	27.8
Accidents (E800-E949, E980-E989)	6,257	64.9	219,257	1	27.3	1,854.3	35.0
Certain conditions originating in the perinatal period (760-779)	1,779	100.0	115,578	2	14.4	977.5	65.0
Malignant neoplasms (140-208)	5,661	43.3	79,535	3	9.9	672.7	14.0
Influenza and pneumonia (480-487)	1,789	34.3	77,953	4	9.7	659.3	43.6
Congenital anomalies (740-759)	1,243	98.2	76,524	5	9.5	647.2	61.6
			MALE				
All causes	18,650	49.0	515,805		100.0	8,732.1	27.7
Symptoms and ill-defined conditions (780-799)	744	26.3	19,899		3.9	336.9	26.7
Total number of deaths from defined causes**	17,906	50.8	495,906		100.0	8,395.2	27.7
Accidents (E800-E949, E980-E989)	4,970	87.9	166,303	1	33.5	2,815.3	33.5
Certain conditions originating in the perinatal period (760-779)	1,014	100.0	65,876	2	13.3	1,115.2	65.0
Influenza and pneumonia (480-487)	1,105	41.1	45,801	3	9.2	775.4	41.4
Congenital anomalies (740-759)	647	98.3	39,916	4	8.0	675.7	61.7
Malignant neoplasms (140-208)	2,697	42.3	37,841	5	7.6	640.6	14.0
			FEMALE				
All causes	11,562	35.6	321,925		100.0	5,440.6	27.8
Symptoms and ill-defined conditions (780-799)	535	18.4	13,462		4.2	227.5	25.2
Total number of deaths from defined causes**	11,027	37.3	308,463		100.0	5,213.1	28.0
Accidents (E800-E949, E980-E989)	1,287	75.1	52,954	1	17.2	894.9	41.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
			FEMALE				
CHILE, 1987 (cont.)							
Certain conditions originating in the perinatal period (760-779).....	765	100.0	49,702	2	16.1	840.0	65.0
Malignant neoplasms (140-208)	2,964	44.2	41,693	3	13.5	704.6	14.1
Congenital anomalies (740-759)	596	98.0	36,607	4	11.9	618.7	61.4
Influenza and pneumonia (480-487)	684	27.1	32,152	5	10.4	543.4	47.0
			BOTH SEXES				
COLOMBIA, 1984							
All causes	81,651	59.5	2,878,255		100.0	10,616.8	35.3
Symptoms and ill-defined conditions (780-799)	3,367	42.7	121,828		4.2	449.4	36.2
Total number of deaths from defined causes**	78,284	60.5	2,756,426		100.0	10,167.4	35.2
Accidents (E800-E949, E980-E989)	12,153	86.7	461,980	1	16.8	1,704.1	38.0
Certain conditions originating in the perinatal period (760-779).....	6,307	99.4	409,161	2	14.8	1,509.2	64.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	8,886	94.9	293,962	3	10.7	1,084.3	33.1
Intestinal infections due to specified organisms and ill defined (007-009).	3,705	91.2	225,147	4	8.2	830.5	60.8
Influenza and pneumonia (480-487)	3,419	69.1	185,981	5	6.7	686.0	54.4
			MALE				
All causes	49,901	63.8	1,770,230		100.0	12,956.4	35.5
Symptoms and ill-defined conditions (780-799)	1,855	45.8	68,225		3.9	499.3	36.8
Total number of deaths from defined causes**	48,046	64.8	1,702,005		100.0	12,457.1	35.4
Accidents (E800-E949, E980-E989)	9,561	88.5	352,386	1	20.7	2,579.1	36.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	8,260	95.1	271,816	2	16.0	1,989.4	32.9
Certain conditions originating in the perinatal period (760-779).....	3,702	99.4	240,174	3	14.1	1,757.8	64.9
Intestinal infections due to specified organisms and ill defined (007-009).	2,017	92.6	123,271	4	7.2	902.2	61.1
Influenza and pneumonia (480-487)	1,822	71.1	99,077	5	5.8	725.1	54.4
			FEMALE				
All causes	31,750	53.8	1,108,025		100.0	8,239.7	34.9
Symptoms and ill-defined conditions (780-799)	1,512	39.4	53,604		4.8	398.6	35.5
Total number of deaths from defined causes**	30,238	54.8	1,054,421		100.0	7,841.1	34.9
Certain conditions originating in the perinatal period (760-779).....	2,605	99.2	168,987	1	16.0	1,256.7	64.9
Accidents (E800-E949, E980-E989)	2,592	80.5	109,594	2	10.4	815.0	42.3
Intestinal infections due to specified organisms and ill defined (007-009).	1,688	89.5	101,876	3	9.7	757.6	60.4
Influenza and pneumonia (480-487)	1,597	67.0	86,903	4	8.2	646.2	54.4
Malignant neoplasms (140-208)	4,897	55.2	83,212	5	7.9	618.8	17.0
			BOTH SEXES				
COSTA RICA, 1988							
All causes	5,015	45.8	168,439		100.0	6,107.3	33.6
Symptoms and ill-defined conditions (780-799)	79	31.5	3,643		2.2	132.1	46.1
Total number of deaths from defined causes**	4,936	46.2	164,796		100.0	5,975.3	33.4
Certain conditions originating in the perinatal period (760-779).....	543	98.5	35,258	1	21.4	1,278.4	64.9
Congenital anomalies (740-759)	388	98.2	24,598	2	14.9	891.9	63.4
Accidents (E800-E949, E980-E989)	725	75.5	24,549	3	14.9	890.1	33.9
Malignant neoplasms (140-208)	974	41.8	18,079	4	11.0	655.5	18.6
Influenza and pneumonia (480-487)	175	48.1	9,951	5	6.0	360.8	56.9
			MALE				
All causes	3,085	49.5	104,137		100.0	7,441.2	33.8
Symptoms and ill-defined conditions (780-799)	41	31.1	1,803		1.7	128.8	44.0
Total number of deaths from defined causes**	3,044	49.9	102,333		100.0	7,312.2	33.6

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
COSTA RICA, 1988 (cont.)			MALE				
Certain conditions originating in the perinatal period (760-779).....	344	99.4	22,338	1	21.8	1,596.2	64.9
Accidents (E800-E949, E980-E989)	571	80.6	19,040	2	18.6	1,360.5	33.3
Congenital anomalies (740-759)	223	97.8	14,081	3	13.8	1,006.2	63.1
Malignant neoplasms (140-208)	485	38.0	9,142	4	8.9	653.2	18.8
Influenza and pneumonia (480-487)	98	51.6	5,420	5	5.3	387.3	55.3
			FEMALE				
All causes	1,930	41.0	64,302		100.0	4,733.3	33.3
Symptoms and ill-defined conditions (780-799)	38	31.9	1,839		2.9	135.4	48.4
Total number of deaths from defined causes**	1,892	41.2	62,462		100.0	4,597.9	33.0
Certain conditions originating in the perinatal period (760-779).....	199	97.1	12,920	1	20.7	951.0	64.9
Congenital anomalies (740-759)	165	98.8	10,516	2	16.8	774.2	63.7
Malignant neoplasms (140-208)	489	46.4	8,937	3	14.3	657.9	18.3
Accidents (E800-E949, E980-E989)	154	61.1	5,509	4	8.8	405.5	35.8
Influenza and pneumonia (480-487)	77	44.3	4,532	5	7.3	333.6	58.9
CUBA, 1988			BOTH SEXES				
All causes	24,581	36.2	600,382		100.0	6,415.4	24.4
Symptoms and ill-defined conditions (780-799)	93	61.6	3,211		0.5	34.3	34.5
Total number of deaths from defined causes**	24,488	36.1	597,171		100.0	6,381.1	24.4
All accidents and violence (E800-E999)	6,249	75.5	205,573	1	34.4	2,196.7	32.9
Malignant neoplasms (140-208)	4,665	35.9	66,487	2	11.1	710.5	14.3
Certain conditions originating in the perinatal period (760-779).....	973	100.0	63,153	3	10.6	674.8	64.9
Diseases of the heart (390-429)	4,577	22.9	55,106	4	9.2	588.8	12.0
Congenital anomalies (740-759)	913	96.4	51,034	5	8.5	545.3	55.9
			MALE				
All causes	14,484	37.7	356,091		100.0	7,471.8	24.6
Symptoms and ill-defined conditions (780-799)	67	69.1	2,200		0.6	46.2	32.8
Total number of deaths from defined causes**	14,417	37.7	353,892		100.0	7,425.7	24.5
All accidents and violence (E800-E999)	4,416	79.4	140,985	1	39.8	2,958.3	31.9
Certain conditions originating in the perinatal period (760-779).....	584	100.0	37,879	2	10.7	794.8	64.9
Diseases of the heart (390-429)	2,857	25.4	33,991	3	9.6	713.2	11.9
Malignant neoplasms (140-208)	2,348	30.7	32,008	4	9.0	671.6	13.6
Congenital anomalies (740-759)	495	95.9	27,687	5	7.8	581.0	55.9
			FEMALE				
All causes	10,097	34.2	244,290		100.0	5,319.2	24.2
Symptoms and ill-defined conditions (780-799)	26	48.1	1,011		0.4	22.0	38.9
Total number of deaths from defined causes**	10,071	34.1	243,280		100.0	5,297.2	24.2
All accidents and violence (E800-E999)	1,833	67.5	64,588	1	26.5	1,406.3	35.2
Malignant neoplasms (140-208)	2,317	43.5	34,479	2	14.2	750.8	14.9
Certain conditions originating in the perinatal period (760-779).....	389	100.0	25,274	3	10.4	550.3	65.0
Congenital anomalies (740-759)	418	97.0	23,348	4	9.6	508.4	55.9
Diseases of the heart (390-429)	1,720	19.7	21,115	5	8.7	459.8	12.3
DOMINICAN REPUBLIC, 1985			BOTH SEXES				
All causes	17,475	62.8	754,562		100.0	12,269.5	43.2
Symptoms and ill-defined conditions (780-799)	1,610	38.5	58,940		7.8	958.4	36.6
Total number of deaths from defined causes**	15,865	67.0	695,622		100.0	11,311.1	43.8
Certain conditions originating in the perinatal period (760-779).....	2,735	100.0	177,737	1	25.6	2,890.1	65.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
DOMINICAN REPUBLIC, 1985 (cont.)							
			BOTH SEXES				
Intestinal infections due to specified organisms and ill defined (007-009).	1,566	91.3	98,299	2	14.1	1,598.4	62.0
Accidents (E800-E949, E980-E989)	1,393	83.6	50,735	3	7.3	825.0	36.4
Influenza and pneumonia (480-487)	876	74.5	50,654	4	7.3	823.7	57.8
Diseases of the heart (390-429)	1,762	38.9	39,448	5	5.7	641.4	22.4
			MALE				
All causes	9,705	63.6	410,877		100.0	13,272.2	42.3
Symptoms and ill-defined conditions (780-799)	831	39.2	31,730		7.7	1,024.9	38.2
Total number of deaths from defined causes**	8,874	67.6	379,147		100.0	12,247.2	42.7
Certain conditions originating in the perinatal period (760-779).....	1,514	100.0	98,388	1	25.9	3,178.1	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	838	90.9	51,595	2	13.6	1,666.6	61.6
Accidents (E800-E949, E980-E989)	1,097	85.2	38,807	3	10.2	1,253.5	35.4
Influenza and pneumonia (480-487)	432	73.3	24,327	4	6.4	785.8	56.3
Diseases of the heart (390-429)	979	41.0	19,939	5	5.3	644.1	20.4
			FEMALE				
All causes	7,770	61.7	343,685		100.0	11,253.2	44.2
Symptoms and ill-defined conditions (780-799)	779	37.9	27,211		7.9	891.0	34.9
Total number of deaths from defined causes**	6,991	66.3	316,475		100.0	10,362.2	45.3
Certain conditions originating in the perinatal period (760-779).....	1,221	100.0	79,348	1	25.1	2,598.1	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	748	91.7	46,705	2	14.8	1,529.2	62.4
Influenza and pneumonia (480-487)	444	75.6	26,327	3	8.3	862.0	59.3
Diseases of the heart (390-429)	783	36.4	19,509	4	6.2	638.8	24.9
Nutritional deficiencies (260-269) ...	235	75.3	13,768	5	4.4	450.8	58.6
ECUADOR, 1987							
			BOTH SEXES				
All causes	32,680	63.4	1,398,375		100.0	14,825.0	42.8
Symptoms and ill-defined conditions (780-799)	3,640	46.8	155,520		11.1	1,648.8	42.7
Total number of deaths from defined causes**	29,040	66.3	1,242,855		100.0	13,176.2	42.8
Intestinal infections due to specified organisms and ill defined (007-009).	3,250	92.4	200,569	1	16.1	2,126.3	61.7
Certain conditions originating in the perinatal period (760-779).....	2,944	100.0	191,239	2	15.4	2,027.4	65.0
Accidents (E800-E949, E980-E989)	4,081	85.4	152,273	3	12.3	1,614.3	37.3
Influenza and pneumonia (480-487)	1,942	65.9	104,263	4	8.4	1,105.4	53.7
Bronchitis, emphysema and asthma (490-493)	1,351	71.1	80,191	5	6.5	850.1	59.4
			MALE				
All causes	18,865	66.8	789,668		100.0	16,599.6	41.9
Symptoms and ill-defined conditions (780-799)	1,956	51.6	82,015		10.4	1,724.0	41.9
Total number of deaths from defined causes**	16,909	69.2	707,653		100.0	14,875.5	41.9
Accidents (E800-E949, E980-E989)	3,173	87.1	113,592	1	16.1	2,387.8	35.8
Certain conditions originating in the perinatal period (760-779).....	1,722	100.0	111,864	2	15.8	2,351.5	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	1,709	93.1	105,197	3	14.9	2,211.3	61.6
Influenza and pneumonia (480-487)	1,070	69.5	56,443	4	8.0	1,186.5	52.8
Bronchitis, emphysema and asthma (490-493)	700	68.9	40,953	5	5.8	860.9	58.5
			FEMALE				
All causes	13,815	59.2	608,707		100.0	13,019.3	44.1
Symptoms and ill-defined conditions (780-799)	1,684	42.3	73,505		12.1	1,572.2	43.6
Total number of deaths from defined causes**	12,131	62.7	535,202		100.0	11,447.2	44.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
ECUADOR, 1987 (cont.)			FEMALE				
Intestinal infections due to specified organisms and ill defined (007-009).	1,541	91.5	95,372	1	17.8	2,039.9	61.9
Certain conditions originating in the perinatal period (760-779).....	1,222	100.0	79,375	2	14.8	1,697.7	65.0
Influenza and pneumonia (480-487)	872	62.1	47,820	3	8.9	1,022.8	54.8
Bronchitis, emphysema and asthma (490-493)	651	73.6	39,238	4	7.3	839.2	60.3
Accidents (E800-E949, E980-E989)	908	80.2	38,680	5	7.2	827.3	42.6
EL SALVADOR, 1984			BOTH SEXES				
All causes	19,653	68.1	796,699		100.0	17,497.9	40.5
Symptoms and ill-defined conditions (780-799)	2,922	43.4	98,649		12.4	2,166.6	33.8
Total number of deaths from defined causes**	16,731	75.6	698,050		100.0	15,331.3	41.7
Certain conditions originating in the perinatal period (760-779).....	2,898	100.0	186,921	1	26.8	4,105.4	64.5
Accidents (E800-E949, E980-E989)	3,068	88.6	114,447	2	16.4	2,513.6	37.3
Intestinal infections due to specified organisms and ill defined (007-009).	1,457	85.6	84,592	3	12.1	1,857.9	58.1
Homicide, legal intervention and operations of war (E960-E978, E980-E999)	1,628	94.8	62,846	4	9.0	1,380.3	34.4
Bronchitis, emphysema and asthma (490-493)	556	74.9	31,737	5	4.5	697.0	57.1
			MALE				
All causes	12,606	72.8	498,108		100.0	21,672.5	39.5
Symptoms and ill-defined conditions (780-799)	1,566	47.0	53,752		10.8	2,338.7	34.3
Total number of deaths from defined causes**	11,040	78.9	444,356		100.0	19,333.8	40.2
Certain conditions originating in the perinatal period (760-779).....	1,648	100.0	105,780	1	23.8	4,602.5	64.5
Accidents (E800-E949, E980-E989)	2,651	91.0	98,148	2	22.1	4,270.4	37.0
Homicide, legal intervention and operations of war (E960-E978, E980-E999)	1,694	95.0	58,310	3	13.1	2,537.1	34.4
Intestinal infections due to specified organisms and ill defined (007-009).	815	84.5	47,199	4	10.6	2,053.6	57.9
Bronchitis, emphysema and asthma (490-493)	308	77.4	17,882	5	4.0	778.0	58.1
			FEMALE				
All causes	7,047	61.0	298,591		100.0	13,242.7	42.4
Symptoms and ill-defined conditions (780-799)	1,356	40.0	44,897		15.0	1,991.2	33.1
Total number of deaths from defined causes**	5,691	69.8	253,694		100.0	11,251.5	44.6
Certain conditions originating in the perinatal period (760-779).....	1,258	100.0	81,141	1	32.0	3,598.6	64.5
Intestinal infections due to specified organisms and ill defined (007-009).	642	87.0	37,393	2	14.7	1,658.4	58.2
Accidents (E800-E949, E980-E989)	417	76.0	16,300	3	6.4	722.9	39.1
Bronchitis, emphysema and asthma (490-493)	248	72.1	13,855	4	5.5	614.5	55.9
Influenza and pneumonia (480-487)	216	63.5	10,791	5	4.3	478.6	50.0
FRENCH GUIANA, 1984			MALE				
All causes	165	56.3	4,929		100.0	12,818.9	29.9
Symptoms and ill-defined conditions (780-799)	11	30.6	349		7.1	907.6	31.7
Total number of deaths from defined causes**	154	62.3	4,580		100.0	11,911.3	29.7
Accidents (E800-E949, E980-E989)	43	93.5	1,482	1	32.4	3,854.3	34.5
Certain conditions originating in the perinatal period (760-779).....	10	90.9	645	2	14.1	1,677.5	64.5
Suicide (E950-E959)	10	83.3	315	3	6.9	819.2	31.5
Intestinal infections due to specified organisms and ill defined (007-009).	4	66.7	258	4	5.6	671.0	64.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	8	100.0	225	5	4.9	585.2	28.1

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
GUADELOUPE, 1981							
			BOTH SEXES				
All causes	909	43.5	24,039		100.0	7,973.5	26.4
Symptoms and ill-defined conditions (780-799)	45	22.2	1,658		6.9	549.9	36.8
Total number of deaths from defined causes**	864	45.8	22,381		100.0	7,423.6	25.9
Accidents (E800-E949, E980-E989)	178	74.2	5,304	1	23.7	1,759.3	29.8
Certain conditions originating in the perinatal period (760-779)	67	100.0	4,354	2	19.5	1,444.2	65.0
Malignant neoplasms (140-208)	137	43.4	1,858	3	8.3	616.3	13.6
Congenital anomalies (740-759)	28	100.0	1,727	4	7.7	572.8	61.7
Diseases of the heart (390-429)	98	24.1	1,313	5	5.9	435.5	13.4
			MALE				
All causes	565	49.9	14,582		100.0	9,802.4	25.8
Symptoms and ill-defined conditions (780-799)	22	25.0	759		5.2	510.2	34.5
Total number of deaths from defined causes**	543	52.0	13,823		100.0	9,292.1	25.5
Accidents (E800-E949, E980-E989)	135	78.9	3,952	1	28.6	2,656.6	29.3
Certain conditions originating in the perinatal period (760-779)	40	100.0	2,599	2	18.8	1,747.1	65.0
Malignant neoplasms (140-208)	79	44.1	1,038	3	7.5	697.8	13.1
Congenital anomalies (740-759)	16	100.0	1,011	4	7.3	679.6	63.2
Diseases of the heart (390-429)	59	30.3	694	5	5.0	466.5	11.8
			FEMALE				
All causes	344	35.9	9,457		100.0	6,192.1	27.5
Symptoms and ill-defined conditions (780-799)	23	20.0	898		9.5	588.0	39.1
Total number of deaths from defined causes**	321	38.0	8,558		100.0	5,603.5	26.7
Certain conditions originating in the perinatal period (760-779)	27	100.0	1,755	1	20.5	1,149.1	65.0
Accidents (E800-E949, E980-E989)	43	62.3	1,352	2	15.8	885.2	31.4
Malignant neoplasms (140-208)	58	42.3	820	3	9.6	536.9	14.1
Congenital anomalies (740-759)	12	100.0	717	4	8.4	469.5	59.7
Diseases of the heart (390-429)	39	18.4	619	5	7.2	405.3	15.9
GUATEMALA, 1984							
			BOTH SEXES				
All causes	53,728	81.1	2,691,566		100.0	35,754.1	50.1
Symptoms and ill-defined conditions (780-799)	4,720	68.3	227,859		8.5	3,026.8	48.3
Total number of deaths from defined causes**	49,008	82.6	2,463,706		100.0	32,727.3	50.3
Certain conditions originating in the perinatal period (760-779)	9,684	100.0	629,059	1	25.5	8,356.3	65.0
Intestinal infections due to specified organisms and ill defined (007-009)	9,136	88.1	487,795	2	19.8	6,479.7	53.4
Influenza and pneumonia (480-487)	8,008	83.6	435,520	3	17.7	5,785.3	54.4
Accidents (E800-E949, E980-E989)	3,368	90.6	118,149	4	4.8	1,569.5	35.1
Nutritional deficiencies (260-269)	2,476	70.6	114,391	5	4.6	1,519.5	46.2
			MALE				
All causes	29,320	81.8	1,442,561		100.0	37,861.6	49.2
Symptoms and ill-defined conditions (780-799)	2,436	68.5	117,765		8.2	3,090.9	48.3
Total number of deaths from defined causes**	26,884	83.3	1,324,795		100.0	34,770.7	49.3
Certain conditions originating in the perinatal period (760-779)	5,544	100.0	360,134	1	27.2	9,452.1	65.0
Intestinal infections due to specified organisms and ill defined (007-009)	4,744	88.2	247,556	2	18.7	6,497.4	52.2
Influenza and pneumonia (480-487)	4,104	82.3	221,441	3	16.7	5,812.0	54.0
Accidents (E800-E949, E980-E989)	2,860	91.5	98,864	4	7.5	2,594.8	34.6
Nutritional deficiencies (260-269)	1,208	68.6	56,718	5	4.3	1,488.6	47.0
			FEMALE				
All causes	24,408	80.3	1,249,005		100.0	33,594.4	51.2

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
GUATEMALA, 1984 (cont.)			**FEMALE**				
Symptoms and ill-defined conditions (780-799)	2,284	68.1	110,094		8.8	2,961.2	48.2
Total number of deaths from defined causes**	22,124	81.8	1,138,911		100.0	30,633.2	51.5
Certain conditions originating in the perinatal period (760-779).....	4,140	100.0	268,925	1	23.6	7,233.2	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	4,392	88.0	240,238	2	21.1	6,461.7	54.7
Influenza and pneumonia (480-487)	3,904	85.0	214,079	3	18.8	5,758.1	54.8
Nutritional deficiencies (260-269) ...	1,268	72.5	57,674	4	5.1	1,551.3	45.5
Whooping cough (033)	600	99.3	37,859	5	3.3	1,018.3	63.1
GUYANA, 1984			**BOTH SEXES**				
All causes	2,878	60.2	92,873		100.0	10,420.3	32.3
Symptoms and ill-defined conditions (780-799)	203	39.4	6,916		7.4	776.0	34.1
Total number of deaths from defined causes**	2,675	62.7	85,957		100.0	9,644.3	32.1
Nutritional deficiencies (260-269) ...	218	87.6	13,033	1	15.2	1,462.3	59.8
Accidents (E800-E949, E980-E989)	268	84.3	9,045	2	10.5	1,014.8	33.8
Diseases of the heart (390-429)	415	47.4	6,377	3	7.4	715.5	15.4
Certain conditions originating in the perinatal period (760-779).....	95	61.3	6,132	4	7.1	688.0	64.5
Influenza and pneumonia (480-487)	98	56.6	4,765	5	5.5	534.6	48.6
			MALE				
All causes	1,755	63.3	54,767		100.0	12,227.8	31.2
Symptoms and ill-defined conditions (780-799)	114	44.7	3,655		6.7	816.1	32.1
Total number of deaths from defined causes**	1,641	65.1	51,112		100.0	11,411.8	31.1
Nutritional deficiencies (260-269) ...	132	85.7	7,842	1	15.3	1,750.9	59.4
Accidents (E800-E949, E980-E989)	205	85.4	6,628	2	13.0	1,479.8	32.3
Diseases of the heart (390-429)	262	50.4	3,895	3	7.6	869.6	14.9
Certain conditions originating in the perinatal period (760-779).....	52	56.5	3,341	4	6.5	745.9	64.2
Influenza and pneumonia (480-487)	54	58.7	2,482	5	4.9	554.2	46.0
			FEMALE				
All causes	1,123	56.0	38,106		100.0	8,594.4	33.9
Symptoms and ill-defined conditions (780-799)	89	34.2	3,260		8.6	735.3	36.6
Total number of deaths from defined causes**	1,034	59.2	34,845		100.0	7,858.9	33.7
Nutritional deficiencies (260-269) ...	86	90.5	5,191	1	14.9	1,170.8	60.4
Certain conditions originating in the perinatal period (760-779).....	43	68.3	2,791	2	8.0	629.5	64.9
Diseases of the heart (390-429)	153	43.1	2,482	3	7.1	559.8	16.2
Accidents (E800-E949, E980-E989)	63	80.8	2,417	4	6.9	545.1	38.4
Influenza and pneumonia (480-487)	44	54.3	2,283	5	6.6	514.9	51.9
HONDURAS, 1981			**BOTH SEXES**				
All causes	12,775	69.8	583,284		100.0	15,658.1	45.7
Symptoms and ill-defined conditions (780-799)	3,627	57.2	175,400		30.1	4,708.6	48.4
Total number of deaths from defined causes**	9,148	76.4	407,884		100.0	10,949.6	44.6
Intestinal infections due to specified organisms and ill defined (007-009).	1,761	91.3	104,232	1	25.6	2,798.1	59.2
All accidents and violence (E800-E999)	1,861	90.3	64,188	2	15.7	1,723.1	34.5
Certain conditions originating in the perinatal period (760-779).....	602	100.0	39,065	3	9.6	1,048.7	64.9
Influenza and pneumonia (480-487)	464	83.3	26,547	4	6.5	712.6	57.2
Diseases of the heart (390-429)	761	52.6	22,238	5	5.5	597.0	29.2
			MALE				
All causes	7,296	71.3	328,240		100.0	17,551.7	45.0

* Equivalent to A-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
HONDURAS, 1981 (cont.)			MALE				
Symptoms and ill-defined conditions (780-799)	1,851	57.0	91,829		28.0	4,910.3	49.6
Total number of deaths from defined causes**	5,445	77.9	236,411		100.0	12,641.4	43.4
Intestinal infections due to specified organisms and ill defined (007-009).	978	91.0	58,090	1	24.6	3,106.2	59.4
All accidents and violence (E800-E999)	1,595	90.8	53,353	2	22.6	2,852.9	33.5
Certain conditions originating in the perinatal period (760-779).....	351	100.0	22,766	3	9.6	1,217.3	64.9
Influenza and pneumonia (480-487)	235	81.9	13,582	4	5.7	726.3	57.8
Diseases of the heart (390-429)	405	53.3	11,395	5	4.8	609.3	28.1
			FEMALE				
All causes	5,479	67.9	255,044		100.0	13,749.1	46.5
Symptoms and ill-defined conditions (780-799)	1,776	57.5	83,571		32.8	4,505.2	47.1
Total number of deaths from defined causes**	3,703	74.3	171,473		100.0	9,243.9	46.3
Intestinal infections due to specified organisms and ill defined (007-009).	783	91.7	46,142	1	26.9	2,487.5	58.9
Certain conditions originating in the perinatal period (760-779).....	251	100.0	16,298	2	9.5	878.7	64.9
Influenza and pneumonia (480-487)	229	84.8	12,965	3	7.6	698.9	56.6
Diseases of the heart (390-429)	358	51.8	10,843	4	6.3	584.5	30.5
All accidents and violence (E800-E999)	266	87.2	10,834	5	6.3	584.0	40.7
JAMAICA, 1984			BOTH SEXES				
All causes	5,224	38.1	161,124		100.0	7,473.5	30.8
Symptoms and ill-defined conditions (780-799)	582	33.4	16,793		10.4	778.9	28.9
Total number of deaths from defined causes**	4,642	38.8	144,331		100.0	6,694.5	31.1
Intestinal infections due to specified organisms and ill defined (007-009).	402	76.7	23,999	1	16.6	1,113.2	59.7
Certain conditions originating in the perinatal period (760-779).....	218	99.5	14,041	2	9.7	651.3	64.4
Accidents (E800-E949, E980-E989)	337	85.1	13,630	3	9.4	632.2	40.4
Malignant neoplasms (140-208)	841	40.6	13,551	4	9.4	628.5	16.1
Nutritional deficiencies (260-269) ...	215	67.4	12,561	5	8.7	582.6	58.4
			MALE				
All causes	2,886	40.9	91,617		100.0	8,529.5	31.7
Symptoms and ill-defined conditions (780-799)	341	37.6	10,495		11.5	977.1	30.8
Total number of deaths from defined causes**	2,545	41.4	81,123		100.0	7,552.6	31.9
Intestinal infections due to specified organisms and ill defined (007-009).	210	78.9	12,653	1	15.6	1,178.0	60.3
Accidents (E800-E949, E980-E989)	259	85.8	10,117	2	12.5	941.9	39.1
Certain conditions originating in the perinatal period (760-779).....	135	99.3	8,695	3	10.7	809.5	64.4
Nutritional deficiencies (260-269) ...	131	72.0	7,606	4	9.4	708.1	58.1
Malignant neoplasms (140-208)	372	34.8	5,931	5	7.3	552.2	15.9
			FEMALE				
All causes	2,338	35.1	69,507		100.0	6,424.9	29.7
Symptoms and ill-defined conditions (780-799)	241	28.8	6,299		9.1	582.2	26.1
Total number of deaths from defined causes**	2,097	36.0	63,209		100.0	5,842.7	30.1
Intestinal infections due to specified organisms and ill defined (007-009).	192	74.4	11,347	1	18.0	1,048.9	59.1
Malignant neoplasms (140-208)	469	46.7	7,620	2	12.1	704.4	16.2
Certain conditions originating in the perinatal period (760-779).....	83	100.0	5,346	3	8.5	494.2	64.4
Diseases of the heart (390-429)	310	21.8	5,112	4	8.1	472.5	16.5
Nutritional deficiencies (260-269) ...	84	61.3	4,955	5	7.8	458.0	59.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
MARTINIQUE, 1985			BOTH SEXES				
All causes	720	33.6	14,264		100.0	4,823.4	19.8
Symptoms and ill-defined conditions (780-799)	51	21.5	1,026		7.2	346.9	20.1
Total number of deaths from defined causes**	669	35.2	13,238		100.0	4,476.5	19.8
Accidents (E800-E949, E980-E989)	97	66.0	2,798	1	21.1	946.2	28.9
Certain conditions originating in the perinatal period (760-779)	34	97.1	2,198	2	16.6	743.3	64.6
Malignant neoplasms (140-208)	168	39.5	1,859	3	14.0	628.6	11.1
Diseases of the heart (390-429)	90	24.9	1,130	4	8.5	382.1	12.6
Cerebrovascular disease (430-438)	76	21.0	887	5	6.7	299.9	11.7
			MALE				
All causes	434	37.9	8,503		100.0	5,856.6	19.6
Symptoms and ill-defined conditions (780-799)	31	28.2	593		7.0	408.4	19.1
Total number of deaths from defined causes**	403	38.9	7,910		100.0	5,448.2	19.6
Accidents (E800-E949, E980-E989)	81	73.0	2,204	1	27.9	1,518.1	27.2
Certain conditions originating in the perinatal period (760-779)	15	93.8	969	2	12.3	667.4	64.6
Malignant neoplasms (140-208)	83	35.3	778	3	9.8	535.9	9.4
Diseases of the heart (390-429)	50	31.3	580	4	7.3	399.5	11.6
Congenital anomalies (740-759)	10	100.0	515	5	6.5	354.7	51.5
			FEMALE				
All causes	286	28.8	5,761		100.0	3,827.0	20.1
Symptoms and ill-defined conditions (780-799)	20	15.7	433		7.5	287.6	21.7
Total number of deaths from defined causes**	266	30.7	5,328		100.0	3,539.4	20.0
Certain conditions originating in the perinatal period (760-779)	19	100.0	1,229	1	23.1	816.4	64.7
Malignant neoplasms (140-208)	85	44.7	1,082	2	20.3	718.8	12.7
Accidents (E800-E949, E980-E989)	16	44.4	594	3	11.1	394.6	37.1
Diseases of the heart (390-429)	40	19.9	550	4	10.3	365.4	13.8
Cerebrovascular disease (430-438)	32	18.7	385	5	7.2	255.8	12.0
MEXICO, 1986			BOTH SEXES				
All causes	240,225	60.0	8,955,092		100.0	11,410.4	37.3
Symptoms and ill-defined conditions (780-799)	9,386	53.7	414,537		4.6	528.2	44.2
Total number of deaths from defined causes**	230,839	60.3	8,540,555		100.0	10,882.2	37.0
Accidents (E800-E949, E980-E989)	38,526	85.6	1,399,851	1	16.4	1,783.7	36.3
Intestinal infections due to specified organisms and ill defined (007-009)	21,594	82.7	1,264,924	2	14.8	1,611.7	58.6
Certain conditions originating in the perinatal period (760-779)	16,716	87.9	1,078,182	3	12.6	1,373.8	64.5
Influenza and pneumonia (480-487)	14,251	66.9	792,092	4	9.3	1,009.3	55.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	14,821	93.8	481,195	5	5.6	613.1	32.5
			MALE				
All causes	145,864	65.1	5,321,775		100.0	13,490.5	36.5
Symptoms and ill-defined conditions (780-799)	3,667	52.4	151,032		2.8	382.9	41.2
Total number of deaths from defined causes**	142,197	65.5	5,170,743		100.0	13,107.6	36.4
Accidents (E800-E949, E980-E989)	31,067	88.0	1,095,239	1	21.2	2,776.4	35.3
Intestinal infections due to specified organisms and ill defined (007-009)	11,398	84.6	668,857	2	12.9	1,695.5	58.7
Certain conditions originating in the perinatal period (760-779)	9,755	88.1	629,198	3	12.2	1,595.0	64.5
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	13,596	94.2	437,607	4	8.5	1,109.3	32.2
Influenza and pneumonia (480-487)	7,872	69.4	433,388	5	8.4	1,098.6	55.1

* Equivalent to A-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
MEXICO, 1986 (cont.)			**FEMALE**				
All causes	91,816	53.3	3,502,969		100.0	8,974.3	38.2
Symptoms and ill-defined conditions (780-799)	3,174	45.7	133,158		3.8	341.1	42.0
Total number of deaths from defined causes**	88,642	53.6	3,369,812		100.0	8,633.2	38.0
Intestinal infections due to specified organisms and ill defined (007-009).	10,196	80.6	596,067	1	17.7	1,527.1	58.5
Certain conditions originating in the perinatal period (760-779)	6,961	87.6	448,985	2	13.3	1,150.3	64.5
Influenza and pneumonia (460-487)	6,379	64.1	358,704	3	10.6	919.0	56.2
Accidents (E800-E949, E980-E989)	7,459	76.7	304,812	4	9.0	780.4	40.8
Congenital anomalies (740-759)	3,185	93.2	195,279	5	5.8	500.3	61.3
NETHERLANDS ANTILLES (CURACAO), 1981			**BOTH SEXES**				
All causes	350	39.2	10,978		100.0	7,128.6	31.4
Symptoms and ill-defined conditions (780-799)	16	18.2	364		3.3	236.4	22.8
Total number of deaths from defined causes**	334	41.5	10,613		100.0	6,891.6	31.8
Certain conditions originating in the perinatal period (760-779)	69	100.0	4,485	1	42.3	2,912.3	65.0
Accidents (E800-E949, E980-E989)	30	83.3	1,091	2	10.3	708.4	36.4
Congenital anomalies (740-759)	14	100.0	897	3	8.5	582.5	64.1
Malignant neoplasms (140-208)	64	34.4	880	4	8.3	571.4	13.8
Diseases of the heart (390-429)	54	31.4	685	5	6.5	444.8	12.7
			MALE				
All causes	206	46.4	6,429		100.0	8,349.4	31.2
Symptoms and ill-defined conditions (780-799)	10	34.5	170		2.6	220.8	17.0
Total number of deaths from defined causes**	196	47.2	6,259		100.0	8,128.6	31.9
Certain conditions originating in the perinatal period (760-779)	37	100.0	2,405	1	38.4	3,123.4	65.0
Accidents (E800-E949, E980-E989)	27	90.0	1,002	2	16.0	1,301.3	37.1
Congenital anomalies (740-759)	7	100.0	455	3	7.3	590.9	65.0
Diseases of the heart (390-429)	32	37.2	444	4	7.1	576.6	13.9
Malignant neoplasms (140-208)	36	37.1	415	5	6.6	539.0	11.5
			FEMALE				
All causes	144	32.1	4,549		100.0	5,907.8	31.6
Symptoms and ill-defined conditions (780-799)	6	10.2	194		4.3	251.9	32.4
Total number of deaths from defined causes**	138	35.4	4,355		100.0	5,655.8	31.6
Certain conditions originating in the perinatal period (760-779)	32	100.0	2,080	1	47.8	2,701.3	65.0
Malignant neoplasms (140-208)	28	31.5	465	2	10.7	603.9	16.6
Congenital anomalies (740-759)	7	100.0	442	3	10.1	574.0	63.1
Diseases of the heart (390-429)	22	25.6	241	4	5.5	313.0	11.0
Cerebrovascular disease (430-438)	15	26.3	153	5	3.5	198.7	10.2
PANAMA, 1987			**BOTH SEXES**				
All causes	4,670	51.3	172,673		100.0	7,953.1	37.0
Symptoms and ill-defined conditions (780-799)	354	47.1	14,858		8.6	684.3	42.0
Total number of deaths from defined causes**	4,316	51.7	157,815		100.0	7,268.7	36.6
Certain conditions originating in the perinatal period (760-779)	523	100.0	33,981	1	21.5	1,565.1	65.0
Accidents (E800-E949, E980-E989)	756	83.9	27,559	2	17.5	1,269.3	36.5
Congenital anomalies (740-759)	213	100.0	13,497	3	8.6	621.7	63.4
Malignant neoplasms (140-208)	561	45.4	10,413	4	6.6	479.6	18.6
Intestinal infections due to specified organisms and ill defined (007-009).	161	78.5	9,253	5	5.9	426.2	57.5
			MALE				
All causes	2,853	54.3	103,471		100.0	9,345.9	36.3

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
PANAMA, 1987 (cont.)			MALE				
Symptoms and ill-defined conditions (780-799)	197	48.3	8,156		7.9	736.7	41.4
Total number of deaths from defined causes**	2,656	54.9	95,316		100.0	8,609.3	35.9
Accidents (E800-E949, E980-E989)	604	85.3	21,051	1	22.1	1,901.4	34.9
Certain conditions originating in the perinatal period (760-779).....	300	100.0	19,494	2	20.5	1,760.8	65.0
Congenital anomalies (740-759)	131	100.0	8,338	3	8.7	753.1	63.6
Intestinal infections due to specified organisms and ill defined (007-009).	92	76.7	5,276	4	5.5	476.5	57.3
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	148	96.7	5,094	5	5.3	460.1	34.4
			FEMALE				
All causes	1,817	47.1	69,201		100.0	6,503.8	38.1
Symptoms and ill-defined conditions (780-799)	157	45.8	6,702		9.7	629.9	42.7
Total number of deaths from defined causes**	1,660	47.3	62,499		100.0	5,873.9	37.7
Certain conditions originating in the perinatal period (760-779).....	223	100.0	14,488	1	23.2	1,361.6	65.0
Accidents (E800-E949, E980-E989)	152	78.8	6,508	2	10.4	611.6	42.8
Malignant neoplasms (140-208)	288	50.7	5,879	3	9.4	552.5	20.4
Congenital anomalies (740-759)	82	100.0	5,159	4	8.3	484.9	62.9
Intestinal infections due to specified organisms and ill defined (007-009).	69	81.2	3,976	5	6.4	373.7	57.6
PARAGUAY (AREA OF INFORMATION), 1986			BOTH SEXES				
All causes	6,929	54.6	277,974		100.0	12,803.7	40.1
Symptoms and ill-defined conditions (780-799)	991	45.2	39,766		14.3	1,831.6	40.1
Total number of deaths from defined causes**	5,938	56.5	238,208		100.0	10,972.0	40.1
Intestinal infections due to specified organisms and ill defined (007-009).	676	87.5	41,803	1	17.5	1,925.5	61.8
Certain conditions originating in the perinatal period (760-779).....	530	100.0	34,442	2	14.5	1,586.4	65.0
Influenza and pneumonia (480-487)	468	73.8	26,561	3	11.2	1,223.4	56.8
Accidents (E800-E949, E980-E989)	587	83.3	22,135	4	9.3	1,019.6	37.7
Congenital anomalies (740-759)	181	98.4	10,635	5	4.5	489.9	58.8
			MALE				
All causes	3,842	57.6	149,676		100.0	13,745.4	39.0
Symptoms and ill-defined conditions (780-799)	522	48.6	20,405		13.6	1,873.9	39.1
Total number of deaths from defined causes**	3,320	59.3	129,271		100.0	11,871.5	38.9
Intestinal infections due to specified organisms and ill defined (007-009).	368	90.0	22,759	1	17.6	2,090.1	61.8
Certain conditions originating in the perinatal period (760-779).....	308	100.0	20,016	2	15.5	1,838.2	65.0
Accidents (E800-E949, E980-E989)	430	87.6	15,336	3	11.9	1,408.4	35.7
Influenza and pneumonia (480-487)	242	76.8	13,308	4	10.3	1,222.1	55.0
Congenital anomalies (740-759)	97	99.0	5,722	5	4.4	525.5	59.0
			FEMALE				
All causes	3,087	51.2	128,298		100.0	11,856.0	41.6
Symptoms and ill-defined conditions (780-799)	469	41.9	19,361		15.1	1,789.1	41.3
Total number of deaths from defined causes**	2,618	53.3	108,937		100.0	10,066.9	41.6
Intestinal infections due to specified organisms and ill defined (007-009).	308	84.6	19,043	1	17.5	1,759.8	61.8
Certain conditions originating in the perinatal period (760-779).....	222	100.0	14,426	2	13.2	1,333.1	65.0
Influenza and pneumonia (480-487)	226	70.8	13,253	3	12.2	1,224.7	58.6
Accidents (E800-E949, E980-E989)	157	73.4	6,799	4	6.2	628.3	43.3
Malignant neoplasms (140-208)	327	56.5	6,065	5	5.6	560.5	18.5

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
PERU, 1983			BOTH SEXES				
All causes	62,792	67.3	3,016,917		100.0	16,634.0	48.0
Symptoms and ill-defined conditions (780-799)	3,331	50.9	157,930		5.2	870.8	47.4
Total number of deaths from defined causes**	59,461	68.5	2,858,988		100.0	15,763.3	48.1
Influenza and pneumonia (480-487)	10,021	66.3	547,561	1	19.2	3,019.0	54.6
Intestinal infections due to specified organisms and ill defined (007-009).	7,816	85.6	477,146	2	16.7	2,630.8	61.0
Certain conditions originating in the perinatal period (760-779)	6,275	100.0	404,738	3	14.2	2,231.6	64.5
Accidents (E800-E949, E980-E989)	4,509	86.4	167,418	4	5.9	923.1	37.1
Bronchitis, emphysema and asthma (490-493)	2,303	78.9	136,436	5	4.8	752.3	59.2
			MALE				
All causes	33,824	69.5	1,600,982		100.0	17,461.8	47.3
Symptoms and ill-defined conditions (780-799)	1,754	54.5	82,369		5.1	898.4	47.0
Total number of deaths from defined causes**	32,070	70.6	1,518,613		100.0	16,563.4	47.4
Influenza and pneumonia (480-487)	5,267	68.9	286,161	1	18.8	3,121.1	54.1
Intestinal infections due to specified organisms and ill defined (007-009).	3,936	86.8	240,665	2	15.8	2,624.9	61.1
Certain conditions originating in the perinatal period (760-779)	3,499	100.0	225,686	3	14.9	2,461.5	64.5
Accidents (E800-E949, E980-E989)	3,408	86.9	121,680	4	8.0	1,327.2	35.7
Bronchitis, emphysema and asthma (490-493)	1,221	80.6	72,109	5	4.7	786.5	59.1
			FEMALE				
All causes	28,968	64.9	1,415,935		100.0	15,787.9	48.9
Symptoms and ill-defined conditions (780-799)	1,577	47.5	75,561		5.3	842.5	47.9
Total number of deaths from defined causes**	27,391	66.3	1,340,375		100.0	14,945.4	48.9
Influenza and pneumonia (480-487)	4,734	63.5	261,400	1	19.5	2,914.6	55.2
Intestinal infections due to specified organisms and ill defined (007-009).	3,880	84.4	236,481	2	17.6	2,636.8	60.9
Certain conditions originating in the perinatal period (760-779)	2,776	100.0	179,052	3	13.4	1,996.5	64.5
Bronchitis, emphysema and asthma (490-493)	1,082	77.1	64,329	4	4.8	717.3	59.5
Nutritional deficiencies (260-269)	932	78.3	56,539	5	4.2	630.4	60.7
PUERTO RICO, 1987			BOTH SEXES				
All causes	8,793	36.7	207,463		100.0	6,381.7	23.6
Symptoms and ill-defined conditions (780-799)	44	24.9	1,549		0.7	47.6	35.2
Total number of deaths from defined causes**	8,749	36.8	205,914		100.0	6,334.1	23.5
Accidents (E800-E949, E980-E989)	1,096	78.8	34,384	1	16.7	1,057.7	31.4
Certain conditions originating in the perinatal period (760-779)	515	100.0	33,454	2	16.2	1,029.1	65.0
Diseases of the heart (390-429)	1,664	23.4	19,829	3	9.6	610.0	11.9
Malignant neoplasms (140-208)	1,280	34.7	16,532	4	8.0	508.5	12.9
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	479	94.9	15,238	5	7.4	468.7	31.8
			MALE				
All causes	5,999	42.7	140,016		100.0	8,610.5	23.3
Symptoms and ill-defined conditions (780-799)	30	34.9	1,041		0.7	65.5	34.7
Total number of deaths from defined causes**	5,969	42.8	138,976		100.0	8,745.1	23.3
Accidents (E800-E949, E980-E989)	886	82.7	27,476	1	19.8	1,729.1	30.9
Certain conditions originating in the perinatal period (760-779)	303	100.0	19,684	2	14.2	1,238.6	65.0
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	436	95.2	13,730	3	9.9	864.0	31.5
Diseases of the heart (390-429)	1,089	28.0	13,155	4	9.5	827.8	12.1
Malignant neoplasms (140-208)	714	33.1	8,194	5	5.9	515.6	11.5

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
PUERTO RICO, 1987 (cont.)			FEMALE				
All causes	2,794	28.2	67,447		100.0	4,058.9	24.1
Symptoms and ill-defined conditions (780-799)	14	15.4	508		0.8	30.6	36.3
Total number of deaths from defined causes**	2,780	28.3	66,938		100.0	4,028.3	24.1
Certain conditions originating in the perinatal period (760-779)	212	100.0	13,770	1	20.6	828.7	65.0
Malignant neoplasms (140-208)	566	36.8	8,338	2	12.5	501.8	14.7
Accidents (E800-E949, E980-E989)	208	65.8	6,907	3	10.3	415.7	33.2
Diseases of the heart (390-429)	575	17.8	6,675	4	10.0	401.7	11.6
Congenital anomalies (740-759)	95	97.9	5,756	5	8.6	346.4	60.6
SAINT LUCIA, 1988			BOTH SEXES				
All causes	366	41.4	9,242		100.0	7,396.7	25.3
Symptoms and ill-defined conditions (780-799)	9	9.7	252		2.7	201.7	28.1
Total number of deaths from defined causes**	357	45.1	8,990		100.0	7,195.1	25.2
Certain conditions originating in the perinatal period (760-779)	31	100.0	2,014	1	22.4	1,611.9	65.0
Accidents (E800-E949, E980-E989)	35	94.6	1,114	2	12.4	891.6	31.8
Diseases of the heart (390-429)	71	33.5	1,068	3	11.9	854.8	15.0
Influenza and pneumonia (480-487)	16	43.2	565	4	6.3	452.2	35.3
Malignant neoplasms (140-208)	41	39.4	463	5	5.2	370.6	11.3
			MALE				
All causes	209	45.6	5,727		100.0	9,410.3	27.4
Symptoms and ill-defined conditions (780-799)	7	18.9	222		3.9	364.8	31.8
Total number of deaths from defined causes**	202	48.0	5,505		100.0	9,045.5	27.3
Certain conditions originating in the perinatal period (760-779)	16	100.0	1,039	1	18.9	1,707.2	65.0
Accidents (E800-E949, E980-E989)	27	96.4	924	2	16.8	1,518.3	34.2
Diseases of the heart (390-429)	41	36.3	671	3	12.2	1,102.5	16.4
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	8	72.7	235	4	4.3	386.1	29.4
Influenza and pneumonia (480-487)	5	31.3	211	5	3.8	346.7	42.3
			FEMALE				
All causes	157	36.8	3,515		100.0	5,484.6	22.4
Symptoms and ill-defined conditions (780-799)	2	3.6	30		0.9	46.8	15.0
Total number of deaths from defined causes**	155	41.8	3,485		100.0	5,437.8	22.5
Certain conditions originating in the perinatal period (760-779)	15	100.0	975	1	28.0	1,521.3	65.0
Diseases of the heart (390-429)	30	30.3	397	2	11.4	619.5	13.2
Influenza and pneumonia (480-487)	11	52.4	354	3	10.2	552.4	32.1
Malignant neoplasms (140-208)	23	42.6	278	4	8.0	433.8	12.1
Accidents (E800-E949, E980-E989)	8	88.9	190	5	5.5	296.5	23.8
ST. VINCENT & THE GRENADINES, 1986			BOTH SEXES				
All causes	272	43.9	9,280		100.0	9,408.1	34.1
Symptoms and ill-defined conditions (780-799)	8	17.4	358		3.9	362.9	44.8
Total number of deaths from defined causes**	264	46.1	8,921		100.0	9,044.2	33.8
Certain conditions originating in the perinatal period (760-779)	35	100.0	2,274	1	25.5	2,305.4	65.0
Accidents (E800-E949, E980-E989)	27	87.1	914	2	10.2	926.6	33.9
Congenital anomalies (740-759)	14	93.3	886	3	9.9	898.2	63.3
Diseases of the heart (390-429)	44	26.5	685	4	7.7	694.5	15.6
Intestinal infections due to specified organisms and ill defined (007-009)	11	100.0	570	5	6.4	577.9	51.8
			MALE				
All causes	149	48.1	5,187		100.0	10,752.3	34.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
ST. VINCENT & THE GRENADINES, 1986 (cont.)			MALE				
Symptoms and ill-defined conditions (780-799)	5	23.8	168		3.2	348.3	33.5
Total number of deaths from defined causes**	144	49.8	5,020		100.0	10,406.1	34.9
Certain conditions originating in the perinatal period (760-779).....	18	100.0	1,169	1	23.3	2,423.2	64.9
Accidents (E800-E949, E980-E989)	19	90.5	568	2	11.3	1,177.4	29.9
Congenital anomalies (740-759)	7	100.0	450	3	9.0	932.8	64.3
Intestinal infections due to specified organisms and ill defined (007-009).	6	100.0	259	4	5.2	536.9	43.2
Diseases of the heart (390-429)	19	26.4	253	5	5.0	524.5	13.3
			FEMALE				
All causes	123	39.8	4,092		100.0	8,119.5	33.3
Symptoms and ill-defined conditions (780-799)	3	12.0	191		4.7	379.0	63.6
Total number of deaths from defined causes**	120	42.3	3,901		100.0	7,740.5	32.5
Certain conditions originating in the perinatal period (760-779).....	17	100.0	1,105	1	28.3	2,192.6	65.0
Congenital anomalies (740-759)	7	87.5	456	2	11.2	865.1	62.3
Diseases of the heart (390-429)	25	26.6	433	3	11.1	859.2	17.3
Accidents (E800-E949, E980-E989)	8	80.0	347	4	8.9	688.5	43.4
Intestinal infections due to specified organisms and ill defined (007-009).	5	100.0	310	5	7.9	615.1	62.1
SURINAME, 1985			BOTH SEXES				
All causes	1,283	56.4	43,224		100.0	11,983.3	33.7
Symptoms and ill-defined conditions (780-799)	118	32.0	3,913		9.1	1,084.8	33.2
Total number of deaths from defined causes**	1,165	61.1	39,311		100.0	10,898.4	33.7
Certain conditions originating in the perinatal period (760-779).....	135	100.0	8,771	1	22.3	2,431.6	65.0
Accidents (E800-E949, E980-E989)	130	79.8	4,482	2	11.4	1,242.6	34.5
Intestinal infections due to specified organisms and ill defined (007-009).	63	77.8	3,593	3	9.1	996.1	57.0
Congenital anomalies (740-759)	51	100.0	3,041	4	7.7	843.1	59.6
Diseases of the heart (390-429)	178	43.6	2,579	5	6.6	715.0	14.5
			MALE				
All causes	771	60.9	26,008		100.0	14,547.3	33.7
Symptoms and ill-defined conditions (780-799)	62	36.3	2,201		8.5	1,231.1	35.5
Total number of deaths from defined causes**	709	64.8	23,807		100.0	13,316.2	33.6
Certain conditions originating in the perinatal period (760-779).....	90	100.0	5,848	1	24.6	3,271.0	65.0
Accidents (E800-E949, E980-E989)	98	81.7	3,253	2	13.7	1,819.5	33.2
Congenital anomalies (740-759)	34	100.0	2,065	3	8.7	1,155.0	60.7
Intestinal infections due to specified organisms and ill defined (007-009).	35	77.8	1,973	4	8.3	1,103.6	56.4
Diseases of the heart (390-429)	120	52.2	1,754	5	7.4	981.1	14.6
			FEMALE				
All causes	512	50.7	17,216		100.0	9,463.4	33.6
Symptoms and ill-defined conditions (780-799)	56	28.3	1,712		9.9	941.1	30.6
Total number of deaths from defined causes**	456	56.2	15,504		100.0	8,522.4	34.0
Certain conditions originating in the perinatal period (760-779).....	45	100.0	2,923	1	18.9	1,606.7	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	28	77.8	1,620	2	10.4	890.5	57.9
Accidents (E800-E949, E980-E989)	32	74.4	1,229	3	7.9	675.6	38.4
Congenital anomalies (740-759)	17	100.0	976	4	6.3	536.5	57.4
Malignant neoplasms (140-208)	63	61.2	948	5	6.1	521.1	15.0

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
TRINIDAD AND TOBAGO, 1986			**BOTH SEXES**				
All causes	3,406	44.2	81,679		100.0	7,156.1	24.0
Symptoms and ill-defined conditions (780-799)	71	37.2	2,647		3.2	231.9	37.3
Total number of deaths from defined causes**	3,335	44.4	79,033		100.0	6,924.3	23.7
Accidents (E800-E949, E980-E989)	397	81.7	14,002	1	17.7	1,226.8	35.3
Certain conditions originating in the perinatal period (760-779)	202	100.0	13,029	2	16.5	1,141.5	64.5
Diseases of the heart (390-429)	662	33.2	7,648	3	9.7	670.1	11.6
Malignant neoplasms (140-208)	392	39.1	6,004	4	7.6	526.0	15.3
Congenital anomalies (740-759)	86	100.0	4,773	5	6.0	418.2	55.5
			MALE				
All causes	2,008	48.2	47,646		100.0	8,330.8	23.7
Symptoms and ill-defined conditions (780-799)	46	51.7	1,519		3.2	265.6	33.0
Total number of deaths from defined causes**	1,962	48.1	46,127		100.0	8,065.2	23.5
Accidents (E800-E949, E980-E989)	319	85.5	10,996	1	23.8	1,922.6	34.5
Certain conditions originating in the perinatal period (760-779)	115	100.0	7,416	2	16.1	1,297.0	64.5
Diseases of the heart (390-429)	418	38.1	4,506	3	9.8	787.9	10.8
Malignant neoplasms (140-208)	175	34.4	2,601	4	5.6	454.8	14.9
Influenza and pneumonia (480-487)	69	50.4	2,445	5	5.3	427.5	35.4
			FEMALE				
All causes	1,398	39.6	34,033		100.0	5,976.4	24.3
Symptoms and ill-defined conditions (780-799)	25	24.5	1,128		3.3	198.1	45.1
Total number of deaths from defined causes**	1,373	40.1	32,906		100.0	5,778.5	24.0
Certain conditions originating in the perinatal period (760-779)	87	100.0	5,612	1	17.1	985.5	64.5
Malignant neoplasms (140-208)	217	43.9	3,404	2	10.3	597.8	15.7
Diseases of the heart (390-429)	244	27.3	3,142	3	9.5	551.8	12.9
Accidents (E800-E949, E980-E989)	78	69.0	3,006	4	9.1	527.9	38.5
Congenital anomalies (740-759)	45	100.0	2,566	5	7.8	450.6	57.0
UNITED STATES, 1987			**BOTH SEXES**				
All causes	613,055	28.9	11,972,895		100.0	5,557.8	19.4
Symptoms and ill-defined conditions (780-799)	16,623	53.2	635,373		5.4	297.4	38.2
Total number of deaths from defined causes**	596,432	28.5	11,237,522		100.0	5,260.4	18.8
Accidents (E800-E949, E980-E989)	71,680	73.1	2,397,667	1	21.3	1,122.4	33.4
Malignant neoplasms (140-208)	160,695	33.7	1,732,985	2	15.4	811.2	10.8
Diseases of the heart (390-429)	142,683	18.6	1,449,821	3	12.9	678.7	10.2
Certain conditions originating in the perinatal period (760-779)	18,218	100.0	1,182,746	4	10.5	553.7	64.9
Suicide (E950-E959)	24,319	78.0	668,883	5	6.0	313.1	27.5
			MALE				
All causes	392,210	35.4	7,741,971		100.0	7,273.2	19.7
Symptoms and ill-defined conditions (780-799)	10,650	61.1	397,720		5.1	373.6	37.3
Total number of deaths from defined causes**	381,560	35.0	7,344,251		100.0	6,899.6	19.2
Accidents (E800-E949, E980-E989)	53,412	79.7	1,781,545	1	24.3	1,673.7	33.4
Diseases of the heart (390-429)	100,545	25.9	1,031,061	2	14.0	968.6	10.3
Malignant neoplasms (140-208)	85,320	33.5	881,355	3	12.0	828.0	10.3
Certain conditions originating in the perinatal period (760-779)	10,440	100.0	677,743	4	9.2	636.7	64.9
Suicide (E950-E959)	19,005	78.3	533,613	5	7.3	501.3	28.1
			FEMALE				
All causes	220,845	21.8	4,130,924		100.0	3,854.2	18.7
Symptoms and ill-defined conditions (780-799)	5,973	43.2	237,653		5.8	221.7	39.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
UNITED STATES, 1987 (cont.)			FEMALE				
Total number of deaths from defined causes**	214,872	21.5	3,893,271		100.0	3,632.4	18.1
Malignant neoplasms (140-208)	75,375	33.9	851,630	1	21.9	794.6	11.3
Accidents (E800-E949, E980-E989)	18,268	58.9	616,123	2	15.8	574.8	33.7
Certain conditions originating in the perinatal period (760-779)	7,778	100.0	505,003	3	13.0	471.2	64.9
Diseases of the heart (390-429)	42,138	11.1	418,760	4	10.8	390.7	9.9
Congenital anomalies (740-759)	5,181	90.4	296,920	5	7.6	277.0	57.3
URUGUAY, 1987			BOTH SEXES				
All causes	9,581	32.1	207,077		100.0	7,594.5	21.6
Symptoms and ill-defined conditions (780-799)	670	35.9	14,838		7.2	544.2	22.1
Total number of deaths from defined causes**	8,911	31.8	192,238		100.0	7,050.3	21.6
Certain conditions originating in the perinatal period (760-779)	604	100.0	38,958	1	20.3	1,428.8	64.5
Accidents (E800-E949, E980-E989)	1,009	68.3	30,998	2	16.1	1,136.8	30.7
Malignant neoplasms (140-208)	2,494	37.4	28,190	3	14.7	1,033.9	11.3
Congenital anomalies (740-759)	272	96.8	16,363	4	8.5	600.1	60.2
Diseases of the heart (390-429)	1,547	21.2	16,222	5	8.4	594.9	10.5
			MALE				
All causes	6,155	38.0	125,362		100.0	9,208.7	20.4
Symptoms and ill-defined conditions (780-799)	455	43.0	8,820		7.0	647.9	19.4
Total number of deaths from defined causes**	5,700	37.6	116,542		100.0	8,560.9	20.4
Accidents (E800-E949, E980-E989)	780	77.4	23,291	1	20.0	1,710.9	29.9
Certain conditions originating in the perinatal period (760-779)	346	100.0	22,317	2	19.1	1,639.3	64.5
Malignant neoplasms (140-208)	1,505	38.5	15,765	3	13.5	1,158.1	10.5
Diseases of the heart (390-429)	1,098	26.0	11,308	4	9.7	830.7	10.3
Congenital anomalies (740-759)	152	97.4	9,487	5	8.1	696.9	62.4
			FEMALE				
All causes	3,423	25.0	81,522		100.0	5,970.8	23.8
Symptoms and ill-defined conditions (780-799)	215	26.6	6,019		7.4	440.8	28.0
Total number of deaths from defined causes**	3,208	24.9	75,503		100.0	5,529.9	23.5
Certain conditions originating in the perinatal period (760-779)	256	100.0	16,512	1	21.9	1,209.4	64.5
Malignant neoplasms (140-208)	989	35.7	12,426	2	16.5	910.1	12.6
Accidents (E800-E949, E980-E989)	229	48.8	7,707	3	10.2	564.5	33.7
Congenital anomalies (740-759)	119	96.0	6,812	4	9.0	498.9	57.2
Diseases of the heart (390-429)	449	13.3	4,914	5	6.5	359.9	10.9
VENEZUELA, 1987			BOTH SEXES				
All causes	48,327	59.7	1,741,859		100.0	9,882.8	36.0
Symptoms and ill-defined conditions (780-799)	5,171	48.3	178,773		10.3	1,014.3	34.6
Total number of deaths from defined causes**	43,156	61.4	1,563,087		100.0	8,868.5	36.2
Certain conditions originating in the perinatal period (760-779)	5,798	99.9	376,747	1	24.1	2,137.6	65.0
Accidents (E800-E949, E980-E989)	7,711	88.5	287,717	2	18.4	1,632.4	37.3
Intestinal infections due to specified organisms and ill defined (007-009)	2,062	89.8	127,211	3	8.1	721.8	61.7
Congenital anomalies (740-759)	1,689	99.0	103,853	4	6.6	589.2	61.5
Influenza and pneumonia (480-487)	1,966	58.2	96,435	5	6.2	547.1	49.1
			MALE				
All causes	29,463	64.3	1,040,487		100.0	11,646.5	35.3
Symptoms and ill-defined conditions (780-799)	2,987	51.2	98,306		9.4	1,100.4	32.9
Total number of deaths from defined causes**	26,476	66.2	942,181		100.0	10,546.1	35.6

* Equivalent to A-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-11 (*Cont.*).

Five leading causes of death according to years of potential life lost before age 65, by sex and country, latest data available.

Country and causes of death (ICD 9th Revision)*	Deaths 0 - 64 years		Potential years of life lost				
	Number	% all ages	Years lost	Rank order	% **	Per 100,000 pop. 0 - 64	Per death
VENEZUELA, 1987 (cont.)			**MALE**				
Accidents (E800-E949, E980-E989)	6,131	90.7	220,769	1	23.4	2,471.1	36.0
Certain conditions originating in the perinatal period (760-779).....	3,352	99.9	217,812	2	23.1	2,438.0	65.0
Intestinal infections due to specified organisms and ill defined (007-009).	1,125	91.5	69,265	3	7.4	775.3	61.6
Congenital anomalies (740-759)	892	98.7	55,268	4	5.9	618.6	62.0
Influenza and pneumonia (480-487)	1,124	62.3	53,704	5	5.7	601.1	47.8
			FEMALE				
All causes	18,864	53.6	701,372		100.0	8,069.9	37.2
Symptoms and ill-defined conditions (780-799)	2,184	44.9	80,467		11.5	925.8	36.8
Total number of deaths from defined causes**	16,680	55.0	620,905		100.0	7,144.0	37.2
Certain conditions originating in the perinatal period (760-779).....	2,446	99.9	158,934	1	25.6	1,828.7	65.0
Accidents (E800-E949, E980-E989)	1,580	81.1	66,947	2	10.8	770.3	42.4
Intestinal infections due to specified organisms and ill defined (007-009).	937	87.8	57,946	3	9.3	666.7	61.8
Malignant neoplasms (140-208)	2,750	56.6	49,021	4	7.9	564.0	17.8
Congenital anomalies (740-759)	797	99.4	48,585	5	7.8	559.0	61.0
VIRGIN ISLANDS (US), 1980			**BOTH SEXES**				
All causes	308	57.0	9,312		100.0	10,015.3	30.2
Symptoms and ill-defined conditions (780-799)	4	100.0	137		1.5	147.3	34.2
Total number of deaths from defined causes**	304	56.7	9,175		100.0	9,867.9	30.2
Accidents (E800-E949, E980-E989)	25	86.2	906	1	9.9	974.4	36.3
Congenital anomalies (740-759)	11	100.0	711	2	7.7	764.7	64.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	24	100.0	600	3	6.5	645.3	25.0
Complications of pregnancy, childbirth and puerperium (630-676)	7	100.0	213	4	2.3	229.1	30.4
Diseases of the heart (390-429)	13	31.0	163	5	1.8	175.3	12.5
			MALE				
All causes	197	64.8	5,978		100.0	12,945.8	30.3
Symptoms and ill-defined conditions (780-799)	2	100.0	112		1.9	242.5	56.0
Total number of deaths from defined causes**	195	64.6	5,866		100.0	12,703.3	30.1
Accidents (E800-E949, E980-E989)	22	88.0	805	1	13.7	1,743.3	36.6
Homicide, legal intervention and operations of war (E960-E978, E990-E999)	22	100.0	560	2	9.5	1,212.7	25.5
Congenital anomalies (740-759)	4	100.0	259	3	4.4	560.9	64.9
Suicide (E950-E959)	3	100.0	118	4	2.0	255.5	39.2
Diseases of the heart (390-429)	7	41.2	98	5	1.7	212.2	13.9
			FEMALE				
All causes	111	47.0	3,335		100.0	7,125.9	30.0
Symptoms and ill-defined conditions (780-799)	2	100.0	25		0.7	53.4	12.5
Total number of deaths from defined causes**	109	46.6	3,310		100.0	7,072.5	30.4
Congenital anomalies (740-759)	7	100.0	451	1	13.6	963.7	64.5
Complications of pregnancy, childbirth and puerperium (630-676)	7	100.0	213	2	6.4	455.1	30.4
Accidents (E800-E949, E980-E989)	3	75.0	102	3	3.1	217.9	33.8
Malignant neoplasms (140-208)	2	66.7	80	4	2.4	170.9	40.0
Diseases of the heart (390-429)	6	24.0	65	5	2.0	138.9	10.8

* Equivalent to R-list published in Health Conditions 81-84.
** Percent by cause based on total number of deaths from defined causes, ages 0 - 64 years.

TABLE III-12.

Cause groupings used for ranking leading causes of death in Tables III-10 and III-11.

Cause grouping	ICD-9 code	Cause grouping	ICD-9 code
Cholera	001	Nutritional deficiencies	260-269
Typhoid fever	002.0	Anemias	280-285
Paratyphoid fever and food poisoning	002.1-002.9 003,005	Mental disorders	290-319
Shigellosis and amebiasis	004, 006	Meningitis	320-322
Intestinal infections due to specified organisms, and ill-defined	007-009	Diseases of the heart	390-429
Tuberculosis	010-018	Cerebrovascular disease	430-438
Plague	020	Influenza and pneumonia	480-487
Diphteria	032	Chronic and unspecified bronchitis, emphysema, and asthma	490-493
Whooping cough	033	Ulcer of stomach and duodenum	531-533
Meningoccocal infections	036	Appendicitis	540-543
Tetanus	037	Hernia of abdominal cavity and intestinal obstruction	550-553 560
Acute poliomyelitis	045	Chronic liver disease and cirrhosis	771
Smallpox	050	Nephritis, nephrotic syndrome and nephrosis	580-589
Measles	055	Hyperplasia of prostate	600
Yellow fever	060	Complications of pregnancy, child-birth and puerperium	630-676
Arthropod-borne encephalitis	062-064	Congenital anomalies	740-759
Viral hepatitis	070	Certain conditions originating in the perinatal period	760-779
Rabies	071	Accidents	E800-E949, E980-E989
Malaria	084	Suicide	E950-E959
Trypanosomiasis	086	Homicide, legal intervention and operations of war	E960-E978 E990-E999
Syphilis	090-097	All accidents and violence (this group is only used if no breakdown for violent causes is available)	E800-E999
Malignant neoplasms	140-208		
Benign neoplasms, carcinoma in situ and other neoplasms	210-239		
Diabetes mellitus	250		

TABLE III-13.

Detailed mortality data available in the Pan American Health Organization data bank as of 30 June 1990.

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Anguilla	-	-	-	-	-	-	-	-	-	-	-	-	-	8A01	-
Antigua	7M06	7A30	7A30	7A30	7A02	-	7A02	-	8A01	8A01	8A01	8A01	8A01	8A01	8A01
Argentina	7M02	7M02	7M02	7M02	7M02	7M02	7M02	-	7A02	8A01	8A01	-	-	-	-
Bahamas	-	-	-	-	-	-	-	-	-	-	-	-	-	8A01	8M02	8M02
Barbados	7A02	7A02	7A02	7A02	7A02	7A06	7A02	7A02	8A01	8A01	8A01	8A01	8A01	8M01	8M01
Belize	7M02	7M06	7M06	7M06	7A02	7A02	7A02	7A02	8A01	8A01	8A01	8A01	8A01	8M01	8M01
Bermuda	7M02	7M02	-	-	7A02	7A02	-	7A02	8A01	8A02	8A02	8A02	8A02	8M01	8M02
Bolivia	-	-	-	-	-	-	7M06	-	-	-	-	-	-	-	-
Brazil [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Canada	7A02	7A02	7A02	7A02	7A02	7A02	7A02	7A02	7A02	8A01	8A21	8A01	8A21	8A21	8A21
Cayman Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	8A01	8A01
Chile	7A06	7A06	7A06	7A02	7A02	7A02	7A02	7A02	8A01	8A01	8A01	8A01	8A01	8A01	8A01
Colombia	7A10	7A10	7A10	7A10	7A02	7A10	7A10	7A02	8A02	8A09	8A37	-	8A09	8A09	8A09
Costa Rica	7M04	7A04	7A04	7A04	7A04	7A04	7A04	7A04	8A04	8A04	8A01	8A04	8A04	8A04	8A04
Cuba	-	-	-	-	7A02	7M02	-	-	8A01	8A01	8A01	8A01	8A01	8A01	8A01
Dominica	7M02	7A18	7A18	-	-	-	7M06	7A02	7A02	8A01	8A01	8A01	8A28	8A01	8A01
Dominican Republic	7M02	7M02	7M02	7M02	7M02	7M02	7M02	7A02	8A02	8A02	8A02	8A01	8A01	8A02	8A01
Ecuador	7M06	7A12	7A12	7A12	7A12	7A12	7A13	7A13	7A13	8A23	8A01	8A01	8A07	8A07	8A07
El Salvador	7A02	7A02	7A02	7A02	7A02	7A02	7A02	7A02	8A02	8A02	8A02	8A02	8A02	8A02	8A02
Falkland Islands	-	7A02	7A02	-	-	7A02	7A02	7M06	8A01	-	-	-	-	-	8A01
French Guiana	7M06	7M06	7M06	-	7M06	7A02	7M06	7M06	8A01	8A01	8A01	8A01	8A01	8A01	8A01
Grenada	7M02	7M02	7M06	7M06	7M06	7M06	-	7A06	-	-	-	-	-	-	8A06
Guadeloupe	7M02	7M06	7M06	-	7M06	7M06	7A06	7M06	-	-	-	8A06	8A06	8A06	8A01
Guatemala	7M02	7M02	7M06	7A02	7A02	7A02	7A02	7A15	7A02	8A02	8A02	8A02	-	8A01	8A22
Guyana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haiti	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Honduras	7M06	7M06	7A06	7A06	7A06	7A06	7A04	7A06	8A01	8A01	8A01	8A01	8A01	8A01	8A01
Jamaica	7A08	7A05	7M06	7A12	7A04	7A08	7A08	8A08	8A08	8A08	8A08	8A08	-	-	-
Martinique	7M02	7M06	7M06	-	7M06	-	7M06	7M06	8A03	-	8A01	8A01	-	8A01	8A01
Mexico [b]	7A02	7A02	7M02	7A02	7A02	7A02	7A02	7A02	8A01	8A01	8A01	8A01	8A07	8A01	8A01
Montserrat	7A06	-	-	-	7A06	7M06	7A06	-	-	8A06	-	8A25	8A26	-	-
Netherlands Antilles	-	-	-	-	-	-	7A04	-	-	-	-	-	-	-	-
Nicaragua	7M04	7A02	7A02	7A02	7A02	7A02	7M02	-	8A01	8A01	-	-	-	8A01	8A01
Panama	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Panama (Excludes Canal Zone)	-	-	-	-	-	-	7A02	7A02	8A01	8A01	8A01	8A01	8A01	8A01	8A01
Panama, Canal Zone [c]	7M02	7M02	7A02	7A02	7M02	7A02	7A02	7A02	7A02	8A01	8A01	8A01	8A01	8A01	8A01
Paraguay [a]	-	7A02	7A02	7A02	-	7A02	7A02	7A02	8A02	8A02	8A02	8A02	8A01	8A01	8A02
Peru	-	-	-	-	-	-	7A02	7A02	8A02	8A01	8A02	8A02	8A02	8A02	-
Puerto Rico	7M04	7A02	7A02	7A04	7A04	7A02	7A02	-	-	8A02	8A07	8A04	8A04	8A04	8A04
Saint Lucia	7M06	7M06	7A06	7M06	-	-	7A06	7A06	8A01	8M24	8M24	8M24	8A01	8A30	8A31
St. Kitts and Nevis	-	-	-	-	-	-	-	-	8A12	8A05	8A02	8A01	-	8A12	8A12
St. Kitts and Nevis (Includes Anguilla)	7M12	7A12	7A12	7A12	7M06	7A12	7A12	7A12	-	-	-	-	-	8A12	-
St. Pierre and Miquelon	-	-	-	-	7A02	7A02	-	-	-	-	-	-	-	-	-
St. Vincent and the Grenadines	7M06	7M06	7M02	7M06	7M06	-	-	-	-	-	-	8A01	8A01	-	8A29
Suriname	-	7M02	7M06	7A02	7A02	7A02	7A02	-	-	-	-	8A01	-	-	-
Trinidad and Tobago	7M02	7A02	7A02	7A02	7M04	7M06	7A02	7A02	7A02	8A02	8A02	8A01	8A01	8A01	8A01
Turk and Caicos Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	8A06	-
United States	7A02	7A02	7A02	7A02	7A04	7A02	7A02	7A02	8A01	8A02	8A01	8A01	8A01	8A01	8A01
Uruguay [b]	7A02	-	-	7A02	7A02	7A02	7A02	7A02	8A02	8A02	8A01	8A01	8A01	8A02	8A02
Venezuela	7A02	7A02	7A02	7A02	7A02	7A02	7A02	7A02	8A02	8A01	8A01	8A01	8A01	8A01	8A01
Virgin Islands (UK)	7M06	7M06	7M06	7M06	-	-	7A06	8A01	8A01	8A01	8A01	-	-	8A27	-
Virgin Islands (US)	7M04	7M06	7M06	7A04	7M06	7A02	7M06	-	-	-	-	8M02	8M02	8M02	-

a/ Area of information.
b/ Data also available for period 1955-1959 in format 7A02.
c/ Included in Panama data as of 1979.

TABLE III-13 (*Cont.*).

Detailed mortality data available in the Pan American Health Organization data bank as of 30 June 1990.

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Anguilla	8A01	8A01	-	-	-	-	-	-	-	-	-	-	-	-
Antigua	8A01	8A01	8A01	8A01	-	-	-	-	-	-	-	-	-	-
Argentina	-	-	8A01	8A01	9A01	9A38	9A38	9A21	9A21	9A21	9A21	9A21	-	-
Bahamas	8M02	8M02	8M02	8M02	8A01	9A01	9A01	9A02	9A02	9A02	9A02	9A02	9A04	-
Barbados	8A01	8A21	8A01	8A01	9A01	9A01	9A01	9A01	9A01	9A01	-	-	-	9A01
Belize	8A01	8A01	8A02	8A45	8A01	9A44	9A46	9A29	9A01	9A01	-	9A01	-	-
Bermuda	8A01	8A21	8A01	8A01	-	-	-	-	-	-	-	-	-	-
Bolivia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brasil [b/]	-	-	8A41	8A41	9A41	9A41	9A41	9A41	9A41	9A01	9A01	9A01	-	-
Canada	8A21	-	8A21	8A21	9A04	9A04	9A04	9A04	9A04	9A04	9A21	9A01	9A01	9A01
Cayman Islands	-	-	-	8A01	8A01	9A26	9A26	9A26	9A26	-	-	-	-	-
Chile	8A01	8A01	8A01	8A01	8A01	9A01	9A01	9A01	9A42	9A04	9A04	9A01	9A01	-
Colombia	8A09	8A09	8A09	-	-	-	9A50	-	-	9A01	-	-	-	-
Costa Rica	8A07	8A07	8A04	8A04	8A04	9A07	9A04	9A07	9A07	9A51	9A07	9A07	9A07	9A07
Cuba	8A01	8A01	8A01	8A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01
Dominica	8A01	8A01	8A01	8A01	9A01	9A01	9A01	9A01	-	9A07	9A07	-	-	-
Dominican Republic	8A01	8A01	8A01	8A01	8A01	9A01	9A01	9A01	9A01	9A01	9A01	-	-	-
Ecuador	8A23	8M06	8A01	8A01	9A23	9A23	-	9A23	-	9A01	9A01	9A01	9A01	-
El Salvador	-	-	-	-	-	-	9A02	9A02	9A02	9A02	-	-	-	-
Falkland Islands	-	-	8A01	-	9A01	9A01	9A01	9A01	9A01	-	-	-	-	-
French Guiana	8A01	8A01	8A01	8A01	9A02	-	-	9M02	9M02	9M02	-	-	-	-
Grenada	8A06	8A06	8A06	8A06	-	-	-	-	-	9A06	-	-	-	-
Guadeloupe	-	8A06	8A06	8A06	8A06	9A06	9A51	-	-	-	-	-	-	-
Guatemala	8A22	8A22	8A22	8A01	9A21	9A21	9A22	-	-	9A21	-	-	-	-
Guyana	8A02	8A02	8A02	8A02	9A01	-	-	-	-	9A01	-	-	-	-
Haiti	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Honduras	8A07	8A01	8A01	8A01	9A07	9A07	9A07	9A06	9A06	-	-	-	-	-
Jamaica	8A06	-	8A40	-	-	-	-	-	-	9A40	-	-	-	-
Martinique	8A01	-	-	-	-	-	9A30	9A30	-	-	9A01	-	-	-
México	8A01	8A01	8A02	8A02	-	-	9A02	9A02	9A02	-	9A04	9A04	-	-
Montserrat	8A06	-	-	8A06	8A01	-	-	-	-	-	-	-	-	-
Netherlands Antilles [a/]	-	-	-	-	-	-	9A01	-	-	-	-	-	-	-
Nicaragua	8A01	8A01	8A01	-	-	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	-
Panama (Excludes Canal Zone)	8A01	8A01	8A02	8A02	-	-	-	-	-	-	-	-	-	-
Panama Canal Zone only) [c/]	8A01	-	8A01	8A01	-	-	-	-	-	-	-	-	-	-
Paraguay [b/]	8A02	8A02	8A02	8A02	9A38	9A38	9A38	9A38	9A43	9A43	9A43	9A53	-	-
Peru	8A02	-	8A02	8A02	8A02	9A02	9A02	9A02	9A02	-	-	-	-	-
Puerto Rico	8A07	8A07	8A07	-	9A02	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	-
Saint Lucía	8A01	8A01	8A01	8A31	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01
St. Kitts and Nevis	8A12	8A12	8A01	8A01	9A12	9A12	9A12	9A12	9A12	9A12	9A12	-	-	-
St. Kitts and Nevis (Includes Anguila)	8A12	-	-	-	-	-	-	-	-	-	-	-	-	-
St. Pierre and Miquelon	8A01	8A01	-	-	-	-	-	-	-	-	-	-	-	-
St. Vincent and the Granadinas	-	-	8A01	8A01	8A01	-	-	9A09	9A01	-	9A01	9A01	-	-
Suriname	8A01	8A01	8A01	8A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	-	-	-
Trinidad y Tabago	8A02	8A01	8A02	8A02	9A02	9A02	9A02	9A02	9A02	9A02	-	9A02	-	-
Turks and Caicos Islands	-	-	-	-	8A01	9A02	-	9A02	9A02	-	-	-	9A02	-
United States	8A01	8A01	8A01	8A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	9A01	-
Uruguay	8A01	8A02	8A02	-	-	9A02	9A02	9A02	9A02	9A02	9A02	9A02	9A02	-
Venezuela	8A02	8A02	8A01	8A02	9A02	9A02	9A02	9A02	9A02	-	9A02	-	9A01	9A01
Virgin Islands (UK)	8A01	8A01	8A01	8A01	-	9A01	9A01	9A01	-	-	-	-	-	-
Virgin Islands (US)	-	-	-	-	-	9A01	-	-	-	-	-	-	-	-

a/ Data for 1981 refer to Curaçao only.
b/ Area of information.
c/ Included in Panama data as of 1979.