Pan American Sanitary Organization

World Health Organization

XIV Pan American Sanitary Conference

VI Meeting Regional Committee

Santiago, Chile
October, 1954

CSP 14/17 (Eng.)
10 September 1954
ORIGINAL: ENGLISH

Summary of Reports of the Member States 1950-1953

Summary of Reports of the Member States 1950-1953

Summary of the reports submitted in accordance with the Agenda of the XIV Pan American Sanitary Conference:

Topic 11: Technical Discussions

A. Reports of the Member States on Public Health Conditions and Progress Achieved during the Period between the XIII and XIV Pan American Sanitary Conferences.

Pan American Sanitary Bureau
Regional Office of the
World Health Organization
Washington 6, D. C., U.S.A.

SUMMARY OF REPORTS OF THE MEMBER STATES FOR THE XIV PAN AMERICAN SANITARY CONFERENCE

Table of Contents

Page

PREFACE 5

I. POPULATION 7

Population at Latest Census and Estimated 1950 Population . . . 8

Population by Age Group 9

Population of Urban and Rural Areas 10

II. VITAL STATISTICS 13

Birth Statistics 14

Fetal Death Statistics 15

Death Statistics 15

Infant Death Statistics 16

Maternal Death Statistics 17

Principal Causes of Death 18

III. COMMUNICABLE DISEASE STATISTICS AND CONTROL PROGRAMS 21

Diphtheria 25

Dysentery 28

Leprosy 29

Malaria 32

Measles 36

Meningococcic Infections 37

Plague 38

Smallpox 40

Syphilis 43

Tuberculosis 47

Typhoid Fever 52

Typhus Fever 53

Whooping Cough 56

Yaws 59

Yellow Fever 59

IV. PERSONNEL EMPLOYED IN HEALTH SERVICES 67

V. ORGANIZATION OF HEALTH SERVICES 69

VI. SANITATION PROGRAMS 75

EXPLANATION OF SYMBOLS

Data not available	...
Category not applicable	.
None	-
Less than half of unit employed	0.0

PREFACE

For planning of health programs in the Americas, measurement of the problems is essential. Progress in health work requires basic information regarding the population being served, the health conditions in the countries, and the medical resources and needs.

This principle has been recognized by the provisions of the Pan American Sanitary Code and the Constitution of the Pan American Sanitary Organization for the exchange of information regarding the prevention of disease and preservation of health in the Western Hemisphere. Future progress depends in large part on measurement of the problems by the provision of accurate data for coordinated health planning.

In accordance with the Constitution of the Pan American Sanitary Organization and Resolution XXIII of the VII Meeting of the Directing Council, each member country and territory was asked to complete a four-year report on health conditions preferably of a statistical nature for the XIV Pan American Sanitary Conference to be held in Santiago, Chile in October, 1954. The reports received from the countries usually had two parts, one giving statistical data for the 4 years, 1950-1953, and the other containing a narrative account of health conditions and progress made in the countries. In order that the statistical data provided by the countries would be readily available for the discussions at the Conference and for coordinated health planning, the data have been combined into this consolidated report.

Although there are differences in methods of reporting, registration of vital events and tabulations of data and also in the completeness of the data in the various countries, this basic information has unusual value for knowledge of Pan American health and for planning the solution of specific problems. In this report many of our health problems are defined; those needing an immediate coordinated attack are evident. The importance of improving these basic data for planning local, national and international health programs is also apparent from a critical appraisal of this material.

In this report the data are presented as given by the National Health Administrations of the countries. These Four-Year Reports were not concerned with technical details regarding definitions of vital events and methods of collection of data. For information regarding definitions and procedures, the individual vital statistics reports published in the countries should be used. Also the Demographic Yearbook of United Nations gives explanations of technical problems involved in releasing comparable vital statistical data.

The data in this report include information from the census and from vital statistics and case reporting systems, brief descriptions of communicable disease control programs, the number of personnel employed in health services, the organization of national health services and various aspects of sanitation programs. In view of the great interest shown by each one of the 21 Member States in completing the Four-Year Reports, the statistical data and the programs as described have been reproduced in this Summary. In a few instances editing and revision of rates were necessary for consistency. Also in a few countries the excellent descriptions of programs were too long for complete reproduction in this report and the reader is referred to the individual reports, which

have been distributed separately, for complete descriptions of specific programs. The scope of the information requested was of necessity limited to selected basic data and many aspects of health programs were not covered. For example, additional information regarding medical facilities, personnel, training facilities and other services being rendered would be useful for the consideration of these important phases of health programs.

The progress in health work in the Member States can be viewed at regular intervals through the Four-Year Reports prepared for the Conferences. This present report is an important forward step in the provision of data for coordinated planning in the Americas. There is no doubt that through an integrated program for the improvement of basic data and by the adoption of standard definitions and procedures for the development of comparable statistics, a more complete and accurate document may be prepared for the 1958 Pan American Sanitary Conference. Sound statistical data are needed for the measurement of progress and for the guidance of programs.

CHAPTER I

POPULATION

Nearly all of the countries conducted a census in or about 1950. Information from the reports of these censuses has been used to show the population of the countries and territories and the distribution of the population by age groups and in urban and rural areas. The distribution of population is important in considering health conditions and programs in the Americas.

Population at Latest Census and Estimated 1950 Population

In order to give a complete picture of the population of the Americas, data from the Four-Year Reports [a] from the countries and from the Demographic Yearbook of United Nations have been used. The populations of all countries and territories of the Americas plus Hawaii, which is included in this region, at the latest available census, are given in Table 1. Censuses were conducted in or about 1950 in all countries except Peru and Uruguay where plans are underway for censuses in 1955.

The estimated midyear population in 1950 taken from the Four-Year Reports or from the publications of United Nations is presented in order to give a total population figure on a specific date. The estimated figure for the Western Hemisphere for 1950 was 326,356,000. Of this population, 216,385,000 lived in North America and 109,971,000 in South America. North America has been further subdivided into Northern America (Alaska, Canada, Greenland, St. Pierre and Miquelon, and United States) which had 165,105,000 and Middle America (the remainder of North America including the Caribbean) which had 51,280,000.

The population of the Americas is increasing rapidly; 10 years before, on July 1, 1940, the estimated population was 274,158,000. The increase during the 10 years was 19.0 per cent. In order to show the rate of change [b] the average annual percentage rate for each area taken from the Demographic Yearbook of United Nations is given in Table 1. For the Americas as a whole, the annual percentage rate of increase from 1940 to 1950 was 1.8. The annual rate of increase was greater in South America (2.1 per cent) and Middle America (2.2 per cent) than in Northern America (1.4 per cent).

Population by Age Group

The populations by age group of the countries submitting these data from the recent census are given in Table 2 and the percentage distributions in 18 countries in Table 3. From this information it is evident that there are wide variations in age composition of the populations of the countries. In 13 countries between 3.2 and 3.9 per cent of the population was under 1 year of age, with an additional 11.8 to 13.9 per cent 1-4 years of age. In fact, in 13 countries 15.3 per cent or more of the population was under 5 years of age. In the other 5 countries this percentage varied from 10.7 to 14.6. Likewise, in many countries high proportions of the population were children 5-9 and 10-14 years of age. In these countries with relatively young populations, the proportions of the population in the older age groups were small.

(a) The reports received from the Member States for the XIV Pan American Sanitary Conference are referred to throughout this summary as "Four-Year Reports."

(b) The average annual percentage rate of change using the population at the last two successive censuses was computed by the compound interest formula.

TABLE 1

DATE AND POPULATION AT LATEST CENSUS, RATE OF INCREASE AND ESTIMATED POPULATION FOR JULY 1, 1950, OF COUNTRIES AND TERRITORIES OF THE AMERICAS

Area	Day, month, and year of census	Population	Rate of increase (a,b)	Estimated 1950 midyear population
Grand Total	.	.	.	326 356 457
COUNTRY				
Total	.	.	.	319 245 457
Argentina	10. 5.1947	15 893 827	2.15	17 196 809
Bolivia	5. 9.1950	c) 3 019 031	1.16	3 019 031
Brazil	1. 7.1950	51 944 397	2.38	51 944 397
Canada (b)	1. 6.1951	14 009 429	1.97	13 712 000
Chile	24. 4.1952	5 930 809	1.46	5 786 283
Colombia	9. 5.1951	11 545 372	2.03	11 333 380
Costa Rica	22. 5.1950	800 875	2.32	b) 800 000
Cuba	28. 1.1953	b) 5 807 057	2.07	5 256 437
Dominican Republic	6. 8.1950	2 135 872	2.45	2 130 943
Ecuador	29.11.1950	3 202 757		b) 3 157 000
El Salvador	13. 6.1950	1 855 917	1.30	1 857 023
Guatemala	18. 4.1950	c) 2 788 122	1.15	2 802 729
Haiti	7. 8.1950	3 097 252	.	d) 3 080 000
Honduras	18. 6.1950	1 368 605	2.66	1 428 089
Mexico	6. 6.1950	25 791 017	2.68	25 825 836
Nicaragua	31. 5.1950	1 057 023	2.38	1 059 533
Panama	10.12.1950	756 631	2.66	748 269
Paraguay	28.10.1950	1 405 627	.	1 396 842
Peru	9. 6.1940	6 207 967	1.31	8 103 519
United States	1. 4.1950	150 697 361	1.36	151 228 000
Uruguay	12.10.1908	1 042 668	1.53	2 397 844
Venezuela	26.11.1950	5 034 838	3.03	4 981 493
TERRITORY (b)				
Total	.	.	.	7 111 000
Alaska (U.S.)	1. 4.1950	128 643	5.61	138 000
Bahama Islands (Br.)	25. 4.1943	68 846	1.18	79 000
Barbados (Br.)	9. 4.1946	192 800	0.83	209 000
Bermuda (Br.)	10.1950	37 254	0.79	37 000
British Guiana	9. 4.1946	369 678	1.17	406 000
British Honduras	9. 4.1946	59 220	0.96	67 000
Falkland Islands (Br.)	31. 3.1946	2 439	- 0.44	d) 2 000
French Guiana	25. 5.1946	28 506	- 0.80	d) 28 000
Greenland (Dan.)	31.12.1951	24 015	1.93	d) 23 000
Guadeloupe (Fr.)	25. 4.1946	278 464	- 0.90	d) 268 000
Hawaii (U.S.)	1. 4.1950	499 794	1.69	491 000
Jamaica (Br.)	4. 1.1943	1 237 063	1.70	1 403 000
Leeward Islands (Br.)	.	.	0.99	113 000
Antigua	9. 4.1946	41 757	.	.
Montserrat	9. 4.1946	14 333	.	.
St. Kitts - Nevis	9. 4.1946	46 243	.	.
Virgin Islands	9. 4.1946	6 505	.	.
Martinique (Fr.)	16. 5.1946	261 595	0.61	d) 268 000
Netherlands Antilles	31.12.1930	71 769	...	161 000
Panama C.Z. (U.S.)	1. 4.1950	52 822	0.19	53 000
Puerto Rico (U.S.)	1. 4.1950	2 210 703	1.69	2 207 000
St. Pierre and Miq. (Fr.)	14. 5.1951	4 606	0.94	d) 4 000
Surinam (Nether.)	31.12.1921	107 723	.	219 000
Trinidad and Tobago (Br.)	9. 4.1946	557 970	2.04	632 000
Virgin Islands (U.S.)	1. 4.1950	26 665	0.69	27 000
Windward Islands (Br.)	.	.	.	276 000
Dominica	9. 4.1946	47 624	1.01	.
Grenada	9. 4.1946	72 387	0.89	.
St. Lucia	9. 4.1946	70 113	1.24	.
St. Vincent	9. 4.1946	61 647	1.69	.

(a) Rate is annual percentage increase from date of previous census.
(b) Data from United Nations Demographic Yearbook, 1953, and United Nations Monthly Bulletin of Statistics, June 1954. (c) Provisional. (d) PASB estimate

TABLE 2

POPULATION BY AGE GROUP ACCORDING TO RECENT CENSUS OF 17 COUNTRIES OF THE AMERICAS

Country	Day, month, year of census	Age group in years												
		Total	Under 1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Argentina	10.5.1947	15 893 827	397 184	1 384 225	1 577 679	1 525 334	3 059 781	2 513 491	2 185 444	1 568 969	996 498	446 866	173 410	64 946
Brazil	1.7.1950	51 944 397	1 915 760	6 455 120	7 015 527	6 308 567	10 493 454	7 377 317	5 429 572	3 561 367	2 001 812	875 686	393 488	116 732
Colombia (a) ..	9.5.1951	11 545 372	380 997	1 385 445	1 650 988	1 420 081	2 274 438	1 627 897	1 235 355	773 540	450 270	207 817	126 999	11 545
Costa Rica ...	22.5.1950	800 875	30 263	102 372	112 156	98 289	161 301	106 694	83 222	52 272	30 631	15 694	7 407	574
Dominican Rep.	6.8.1950	2 135 872	78 564	297 277	297 765	276 840	440 139	276 445	206 422	126 792	74 419	35 994	25 126	89
Ecuador	29.11.1950	3 202 757	117 798	415 440	455 019	371 433	606 206	434 260	326 809	223 914	137 495	69 848	43 688	847
El Salvador ...	13.6.1950	1 855 917	69 134	219 920	250 178	224 169	375 981	252 752	201 459	132 429	73 820	34 905	19 964	1 206
Guatemala	7.4.1940	3 283 209	105 076	408 852	486 179	430 907	619 392	452 046	345 986	212 414	133 764	55 097	30 306	3 190
Haiti	7.7.1950	3 097 252	73 597	301 275	400 518	397 709	575 440	466 318	387 350	232 849	127 786	79 954	43 275	11 181
Honduras	18.6.1950	1 368 605	50 698	164 964	177 786	162 136	262 991	184 425	142 122	101 304	67 799	33 484	20 896	0
Mexico	6.6.1950	25 791 017	814 314	3 155 677	3 674 593	3 109 884	4 931 525	3 451 773	2 756 438	1 901 675	1 082 184	574 985	290 629	47 340
Nicaragua	31.5.1950	1 057 023	40 674	128 236	154 529	134 039	209 866	143 595	106 868	69 860	39 156	18 471	11 729	0
Panama	10.12.1950	756 631	25 742	96 732	106 692	85 216	139 172	111 695	80 683	51 454	33 747	16 657	7 891	950
Paraguay (b) ..	28.10.1950	1 405 627	46 386	186 527	222 792	185 824	257 230	180 904	119 338	85 040	69 156	37 109	15 321	0
Peru	9.6.1940	6 207 967	219 483	741 498	923 111	728 075	1 120 065	866 523	650 435	421 500	269 466	151 254	114 587	1 970
United States ..	1.4.1950	150 697 361	3 146 948	13 016 623	13 199 685	11 119 268	22 098 426	23 759 267	21 450 359	17 342 653	13 294 595	8 414 885	3 854 652	0
Venezuela	26.11.1950	5 034 838	180 751	636 907	634 390	524 127	990 856	785 938	579 510	354 452	199 883	88 613	47 327	12 084

(a) Percentages by age groups in the 1938 census were applied to the 1951 total population.
(b) Estimated.

TABLE 3

PERCENTAGE OF POPULATION BY AGE GROUP ACCORDING TO RECENT CENSUS OF 18 COUNTRIES OF THE AMERICAS

Country	Age group in years												
	Total	Under 1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Argentina.....	100.0	2.5	8.7	9.9	9.6	19.2	15.8	13.7	9.9	6.4	2.8	1.1	0.4
Brazil.....	100.0	3.7	12.4	13.5	12.1	20.2	14.2	10.4	6.9	3.9	1.7	0.8	0.2
Chile (a)	100.0	2.8	10.4	13.2	10.9	19.3	13.7	11.8	8.4	5.1	2.8	1.3	0.3
Colombia.....	100.0	3.3	12.0	14.3	12.3	19.7	14.1	10.7	6.7	3.9	1.8	1.1	0.1
Costa Rica.....	100.0	3.8	12.8	14.0	12.3	20.1	13.3	10.4	6.5	3.8	2.0	0.9	0.1
Dominican R..	100.0	3.7	13.9	13.9	13.0	20.6	12.9	9.7	5.9	3.5	1.7	1.2	0.0
Ecuador.....	100.0	3.7	13.0	14.2	11.6	18.9	13.5	10.2	7.0	4.3	2.2	1.4	0.0
El Salvador....	100.0	3.7	11.8	13.5	12.1	20.3	13.6	10.8	7.1	4.0	1.9	1.1	0.1
Guatemala.....	100.0	3.2	12.4	14.8	13.1	18.9	13.8	10.5	6.5	4.1	1.7	0.9	0.1
Haiti.....	100.0	2.4	9.7	12.9	12.8	18.6	15.1	12.5	7.5	4.1	2.6	1.4	0.4
Honduras.....	100.0	3.7	12.1	13.0	11.8	19.2	13.5	10.4	7.4	5.0	2.4	1.5	0.0
Mexico.....	100.0	2.7	11.9	14.4	12.2	18.0	14.8	11.8	6.9	4.3	2.0	1.0	0.0
Nicaragua.....	100.0	3.9	12.1	14.6	12.7	19.8	13.6	10.1	6.6	3.7	1.8	1.1	0.0
Panama.....	100.0	3.4	12.8	14.1	11.3	18.4	14.7	10.7	6.8	4.5	2.2	1.0	0.1
Paraguay (b)..	100.0	3.3	13.3	15.9	13.2	18.3	12.9	8.5	6.0	4.9	2.6	1.1	0.0
Peru.....	100.0	3.5	12.0	14.9	11.7	18.0	14.0	10.5	6.8	4.3	2.4	1.9	0.0
United States..	100.0	2.1	8.6	8.8	7.4	14.7	15.8	14.2	11.5	8.8	5.6	2.5	0.0
Venezuela.....	100.0	3.6	12.7	12.6	10.4	19.7	15.6	11.5	7.0	4.0	1.8	0.9	0.2

(a) Distribution in 2 per cent sample. (b) Estimated.

In order to consider the variations in the age composition, the data are combined into four age groups and are presented in Table 4. In 13 of the 18 countries with data available by age, over 40 per cent of the population was under 15 years of age. Health programs for this large child population are essential. The population of the age group 15-34 years includes an active segment of the population, and approximately one-third of the population was in this age group. In 9 of these countries three-fourths or more of the population were under 35 years of age, and one-fourth or less of the population were 35 years of age and over. In an additional 7 countries between 70 and 75 per cent of the population was under 35 years of age. In fact, in only two countries were the percentages lower than 70. Thus nearly all the countries of the Americas have a very young population and the health programs would be directed principally to the problems of infancy, childhood and young adult life.

Population of Urban and Rural Areas

The urban and rural compositions of the populations of the countries of the Americas vary widely. In Table 5 is quoted the definition of an urban area as given in each country. In most countries the area consists principally of administrative centres. To recognize an area as urban, in 6 countries the lower limit of the population in these centres is specified, namely: in 2 it is 1,000; in one 1,500; in one 2,000; and in two, 2,500. The number and percentage of the population in urban and rural areas are also given in Table 5. These countries are essentially rural, for in all but 4 countries more than half of the population lived in rural areas. Health programs have to be planned for large rural populations as well as for urban centres.

TABLE 4

PERCENTAGE OF POPULATION IN SELECTED AGE GROUPS ACCORDING TO RECENT CENSUS OF 18 COUNTRIES OF THE AMERICAS

Country	Total (a)	Under 15	15-34	35-54	55 or more	Under 35	35 or more
Argentina	100.0	30.9	35.2	23.7	10.2	66.1	33.9
Brazil	100.0	41.9	34.5	17.3	6.3	76.4	23.6
Chile (b)	100.0	37.3	33.0	20.2	9.5	70.3	29.7
Colombia	100.0	42.0	33.8	17.4	6.8	75.8	24.2
Costa Rica	100.0	42.9	33.5	16.9	6.7	76.4	23.6
Dominican Republic	100.0	44.5	33.6	15.6	6.3	78.1	21.9
Ecuador	100.0	42.5	32.5	17.2	7.8	75.0	25.0
El Salvador	100.0	41.2	33.9	18.0	6.9	75.1	24.9
Guatemala	100.0	43.6	32.7	17.0	6.7	76.3	23.7
Haiti	100.0	38.0	33.8	20.1	8.1	71.8	28.2
Honduras	100.0	40.6	32.7	17.8	8.9	73.3	26.7
Mexico	100.0	41.8	32.5	18.1	7.6	74.3	25.7
Nicaragua	100.0	43.3	33.4	16.7	6.6	76.7	23.3
Panama	100.0	41.6	33.2	17.5	7.7	74.8	25.2
Paraguay	100.0	45.6	31.2	14.5	8.7	76.8	23.2
Peru	100.0	42.1	32.0	17.3	8.6	74.1	25.9
United States	100.0	26.9	30.4	25.7	17.0	57.3	42.7
Venezuela	100.0	39.3	35.4	18.6	6.7	74.7	25.3

(a) Population of known age. (b) Distribution in 2 per cent sample.

TABLE 5

NUMBER AND PERCENTAGE OF POPULATION IN URBAN AND RURAL AREAS AND DEFINITION OF URBAN AREAS ACCORDING TO RECENT CENSUS OF 19 COUNTRIES OF THE AMERICAS

Country	Year of census	Population		Per cent		Definition of Urban Area
		Urban	Rural	Urban	Rural	
Argentina	1947	9 932 133	5 961 694	62.5	37.5	Cities, towns and villages of 2 000 or more inhabitants.
Bolivia	1950	1 013 350	2 005 681	33.6	66.4	Administrative centres of departments, provinces and cantons(a).
Brazil	1950	18 782 891	33 161 506	36.1	63.8	An urban zone is an area containing certain number of dwellings, minimum of 30 for a village and 200 for a city.
Chile	1952	3 536 878	2 393 931	59.6	40.4	Regular agglomeration with 1 000 or more inhabitants.
Colombia	1951	4 186 885	7 358 487	36.3	63.7	...

(a) Definition quoted from the United Nations Demographic Yearbook, 1952.

TABLE 5
NUMBER AND PERCENTAGE OF POPULATION IN URBAN AND RURAL AREAS AND DEFINITION OF URBAN AREA ACCORDING TO RECENT CENSUS OF 19 COUNTRIES OF THE AMERICAS (Continued)

Country	Year of census	Population		Per cent		Definition of Urban Area
		Urban	Rural	Urban	Rural	
Costa Rica	1950	268 286	532 589	33.5	66.5	Demarcation based on the first districts of cantons.
Cuba	1943	2 607 490	2 171 093	54.6	45.4	Population of cities and villages.
Dominican Rep .	1950	508 408	1 627 464	23.8	76.2	Administrative centres of cantons and municipal districts.
Ecuador	1950	913 932	2 288 825	28.5	71.5	Urban Parroquias.
El Salvador . . .	1950	675 619	1 180 298	36.4	63.6	Administrative centres of municipios.
Guatemala	1950	861 283	1 926 839	30.9	69.1	Administrative centres of municipios.
Haiti	1950	393 123	2 704 129	12.7	87.3	Administrative centres of communes (a).
Honduras	1950	424 453	944 152	31.0	69.0	Centres with seat of administration of district or municipalidad.
Mexico	1950	10 983 483	14 807 534	42.6	57.4	Populated centres of more than 2 500 inhabitants (definition, census 1940)(a).
Nicaragua	1950	369 249	687 774	34.9	65.1	Administrative centres of departments and municipios(a).
Panama	1950	289 680	466 951	38.3	61.7	Populated centres of 1 500 or more inhabitants having essentially urban characteristics(a).
Paraguay	1950	487 830	917 797	34.7	65.3	. . .
Peru	1940	2 240 348	3 967 619	36.1	63.9	Capitals of territorial units and agglomeration of urban character with population above average population of capitals.
United States . .	1950	88 927 464	61 769 897	59.0	41.0	Incorporated places of 2 500 population or more and specially defined places.
Venezuela	1950	2 484 891	2 549 947	49.4	50.6	Administrative centres or capitals of municipios with not less than 1 000 population.

(a) Definition quoted from the United Nations Demographic Yearbook, 1952.

CHAPTER II

VITAL STATISTICS

Basic data used for the definition of health problems have usually been derived from vital statistics. Certificates of birth and death have legal as well as statistical value and registration systems have been developed in all countries of the Americas. However, the definitions of live births, deaths and fetal deaths used in these registration systems are not the same in these countries. Also, in several of the countries data for a year include all of these events recorded in a year, while in others the data for a year include only events which occurred in the year and were registered within a limited period of time. Since the definitions and procedures vary, efforts are being made to bring uniformity into vital statistics systems.

Regulations No. 1 of the World Health Organization,(a) which recommended the adoption of a standard form of medical certificate, provided for the use of the International Statistical Classification of Diseases, Injuries and Causes of Death (b) and compilation and publication of statistics. Also the Expert Committee on Health Statistics (c) has made important recommendations for the improvement of vital statistics. The United Nations (d) has published recommendations for the improvement and standardization of vital statistics in the publication Principles for a Vital Statistics System.

Because of the differences in definitions and procedures, the vital statistics data for the countries of the Americas for the years 1950-1953 presented in this report are not strictly comparable. However, with careful interpretation of the data, considering these differences, the data serve to define in general some of the health problems and to show the usefulness of the statistics obtained from birth and death certificates. Some of the technical difficulties involved in comparing the data are explained in the Demographic Yearbooks of United Nations. The needs for improvement of vital statistics systems will become apparent as data are used.

(a) Regulations No. 1 regarding Nomenclature (Including the Compilation and Publication of Statistics) with Respect to Diseases and Causes of Death, Official Records of the World Health Organization No. 13, 1948.

(b) International Statistical Classification of Diseases, Injuries and Causes of Death, World Health Organization, Geneva, 1948.

(c) Expert Committee on Health Statistics, First Report, WHO Technical Report Series No. 5, March, 1950. Second Report, WHO Technical Report Series No. 25, October, 1950. Third Report, WHO Technical Report Series No. 53, July, 1952.

(d) Principles for a Vital Statistics System, Statistical Papers, Series M, No. 19, United Nations, N. Y., 1953.

Birth Statistics

The numbers of live births with rates per 1,000 population are given in Table 6 for 20 countries for 1950-1953. The completeness of registration is known to vary; in some of the countries the rate would be higher if registration was complete. Also the exclusion of records of births for infants dying within 24 hours and variations in definitions and procedures affect the comparability of data. However, the data indicate that many of the American countries have high birth rates. In 1952, 10 countries had birth rates exceeding 40.0 per 1,000 population.

The definition of live birth recommended by the Expert Committee on Health Statistics (Second Report) (a) is as follows:

> "Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such birth is considered live born."

In accordance with this definition all live births should be registered. If death occurs following birth, they should be registered and counted as a birth and a death.

(a) Expert Committee on Health Statistics, Second Report, WHO Technical Report Series, No. 25, October, 1950.

TABLE 6

NUMBER OF LIVE BIRTHS WITH RATES PER 1,000 POPULATION FOR 20 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	438 395	25.5	437 985	24.8	443 636	24.6	453 621	24.7
Bolivia	118 610	39.3	121 540	39.8	130 100	42.1	119 200	38.1
Brazil (a)	158 225	27.6	166 050	28.2	164 315	27.1	...	...
Chile (b)	208 092	36.0	209 509	35.7	c) 217 069	36.5	c) 209 955	34.8
Colombia	413 721	36.5	419 384	36.2	436 406	36.8	471 019	38.9
Costa Rica	37 248	46.5	39 239	47.6	46 605	54.6	47 487	53.9
Dominican Rep.	109 655	51.5	89 993	41.2	94 322	42.2	...	...
Ecuador	149 153	47.2	152 999	47.0	155 641	46.5	...	...
El Salvador	90 557	48.8	93 634	49.8	96 802	50.8	c) 98 184	50.9
Guatemala	141 673	50.5	151 416	52.4	151 865	51.0	...	...
Haiti	9 552	3.1	10 095	3.2	10 514	3.3	...	...
Honduras	57 636	40.4	60 691	41.3	60 646	40.1	...	...
Mexico	1 174 947	45.5	1 183 788	44.7	c) 1 181 834	43.3	...	...
Nicaragua	43 618	41.2	44 989	41.2	48 337	42.8	49 367	42.4
Panama	24 858	33.2	24 818	32.4	29 013	36.9	30 098	37.4
Paraguay (d)	21 007	18.2	24 627	20.8	...	...	...	...
Peru	250 823	31.0	258 556	31.3	264 788	31.4	...	...
United States	3 554 149	23.6	e) 3 750 850	24.5	c) 3 824 000	24.6	...	...
Uruguay	44 748	18.7	45 281	18.6	...	...	...	...
Venezuela	212 096	42.6	224 553	43.9	230 688	44.0	246 396	45.8

a) Federal District and Capitals of States, excluding city of São Paulo.
b) Estimated.
c) Provisional.
d) Area with 83 per cent of population.
e) Based on a 50 per cent sample.

TABLE 7

NUMBER OF FETAL DEATHS WITH RATES PER 1,000 LIVE BIRTHS IN 19 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	12 638	28.8	a) 12 527	28.6	12 511	28.2	12 747	28.1
Brazil (b)	11 710	74.0	12 368	74.5	12 351	75.2	...	...
Chile (c)	7426	35.7	7011	33.5	7038	32.4	7011	33.4
Colombia (d)	6155	14.9	6588	15.7	6501	14.9	7669	16.3
Costa Rica	1103	29.6	1062	27.1	1012	21.7	1021	21.5
Dominican Rep.	1801	16.4	1977	22.0	1861	19.7	...	...
Ecuador	3736	25.0	3931	25.7	3604	23.2	...	...
El Salvador	924	10.2	858	9.2	856	8.8	c) 850	8.7
Guatemala	4225	29.8	4472	29.5	4651	30.6	...	...
Haiti	568	59.5	590	58.4	698	66.4	...	...
Honduras	300	5.2	241	4.0	178	2.9	...	...
Mexico	23 510	20.1	25 548	21.6	25 365	21.4	...	...
Nicaragua	95	2.2	84	1.9	76	1.6	40	0.8
Panama	353	14.2	441	17.8	379	13.1	459	15.2
Paraguay (e)	350	16.7	426	17.3	...	...	...	...
Peru	2146	8.6	1848	7.1	...	...	...	...
United States	68 262	19.2	70 569	18.8	...	...	...	...
Uruguay	1291	28.9	1192	26.3	...	...	...	...
Venezuela	4373	20.6	4861	21.6	4994	21.6	5064	20.6

(a) Estimated.
(b) Federal District and Capitals of States, excluding the city of São Paulo.
(c) Provisional.
(d) Still-births, former definition.
(e) Area with 83 per cent of population.

TABLE 8

NUMBER OF DEATHS WITH RATES PER 1,000 POPULATION FOR 20 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	154 826	9.0	155 043	8.8	156 593	8.7	160 015	8.7
Bolivia	42 925	14.2	40 875	13.4	48 326	15.6	45 382	14.5
Brazil (a)	93 761	16.4	98 249	16.7	95 317	15.7	...	...
Chile	90 081	15.6	90 819	15.5	b) 81 642	13.7	b)79 623	13.2
Colombia	160 378	14.2	165 169	14.2	153 738	13.0	163 653	13.5
Costa Rica	9769	12.2	9631	11.5	9902	11.6	10 312	11.7
Dominican Rep.	21 303	10.0	21 731	10.0	22 515	10.1	...	...
Ecuador	55 986	17.7	55 931	17.2	56 858	17.0	...	...
El Salvador	27 454	14.8	29 030	15.4	32 423	17.0	b) 29 987	15.5
Guatemala	61 234	21.8	56 550	19.6	71 994	24.2	...	...
Haiti	974	0.3	1059	0.3	1216	0.4	...	...
Honduras	17 073	12.0	16 529	11.2	19 148	12.7	...	...
Mexico	418 430	16.2	458 238	17.3	402 542	14.8	...	...
Nicaragua	11 466	10.8	10 085	9.2	11 956	10.6	11 317	9.7
Panama	7169	9.6	6824	8.9	6776	8.6	7320	9.1
Paraguay (c)	7545	6.5	8279	7.0	...	...	...	...
Peru	97 111	12.0	104 348	12.6	94 672	11.2	...	...
United States	1 452 454	9.6	1 482 099	9.7	d) 1 494 000	9.6	...	...
Uruguay	19 199	8.0	19 190	7.9	...	...	...	...
Venezuela	54 475	10.9	56 767	11.1	56 548	10.8	55 476	10.3

(a) Federal District and Capitals of States, excluding the city of São Paulo.
(b) Provisional.
(c) Area with 83 per cent of population.
(d) Estimated.

Fetal Death Statistics

The Expert Committee on Health Statistics has defined the term "fetal death" rather than the term "stillbirth." The definition of fetal death is the reverse of the definition of live birth, namely:

> "Foetal death is death prior to complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the foetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles."

At present, fetal deaths of 20 weeks or 28 weeks or more of gestation are registered. There is considerable variation in the Americas; however, in 10 countries the minimum period of gestation [a] is 28 weeks.

The data on fetal deaths presented in Table 7 indicate that the statistics on fetal deaths are not complete and comparable. This is a field in which progress needs to be made in the standardization of definitions and procedures if adequate statistical data are to be provided for health programs.

Death Statistics

The completeness of death registration also varies in the Americas. Failure to register deaths of infants dying shortly after birth results in incomplete registration of deaths as well as of live births.

Death rates, without correction for age distribution of the population, are given in Table 8 for general consideration of mortality. In several countries the death rates are high and the causes of such high rates need careful study. In several of the countries the death rates would be higher if registration was complete. Efforts to improve registration are essential.

Infant Death Statistics

The completeness of registration of live births and infant deaths affects the size of infant death rates. The variations in definitions of these vital events mean that these rates lack comparability. However, infant death rates are essential for understanding the health problems in an area. The numbers of infant deaths with rates per 1,000 live births are given in Table 9 for 20 countries of the Americas.

In 1952, in six countries the infant death rates were 100.0 per 1,000 live births or greater. In some of these countries birth registration was known to be incomplete and thus the denominator in the calculation of the rate was too low. However, registration of infant deaths may have been incomplete also. The range in these death rates was great. In general, these rates indicate that infant mortality is a major health problem. More accurate data would serve for a better definition of this problem.

(a) Demographic Yearbook, 1953, United Nations, New York.

TABLE 9

NUMBER OF INFANT DEATHS WITH RATES PER 1,000 LIVE BIRTHS IN 20 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	30936	70.6	30136	68.8	29945	67.5	30166	66.5
Bolivia	12895	108.7	16783	138.1	24010	184.6	21784	182.8
Brazil (a)	25692	162.4	28868	173.9	28414	172.9	...	...
Chile	28345	136.2	27551	131.5	b) 26449	121.8	b) 24819	118.2
Colombia	51258	123.9	50284	119.9	48309	110.7	52300	111.0
Costa Rica	3358	90.2	3420	87.2	3739	80.2	3956	83.3
Dominican Rep.	6952	63.4	7112	79.0	7425	78.7	...	...
Ecuador	16367	109.7	16756	109.5	...	...	...	...
El Salvador	7353	81.2	7172	76.6	8276	85.5	b) 8020	81.7
Guatemala	15243	107.6	13936	92.0	17036	112.2	...	...
Haiti	406	42.5	469	46.5	518	49.3	...	...
Honduras	4932	85.6	3330	54.9	3900	64.3	...	...
Mexico	113032	96.2	116957	98.9	106047	89.7	...	...
Nicaragua	3578	82.0	3166	70.4	3747	77.5	3704	75.0
Panama	1704	68.5	1536	61.9	1462	50.4	1585	52.7
Paraguay (d)	2144	102.1	2161	87.7	...	...	...	...
Peru	26007	103.7	27044	104.6	26496	100.0	...	...
United States	103825	29.2	106702	28.4	c) 109030	28.5	...	...
Uruguay	2875	64.2	2478	54.7	...	...	...	...
Venezuela	16911	79.7	17675	78.7	17231	74.7	17340	70.4

(a) Federal District and Capitals of States, excluding city of São Paulo.
(b) Provisional.
(c) Estimated.
(d) Area with 83 per cent of population.

Maternal Death Statistics

Maternal deaths are those due to complications of pregnancy, childbirth and the puerperium and are classified under title numbers 640-689 of the International Statistical Classification of Diseases, Injuries and Causes of Death. The number of deaths assigned to these code numbers is affected by the completeness of the statements of causes of death. Without accurate medical certification, the fact that a childbirth occurred may have been omitted from the death certificate and thus the number of maternal deaths would be low.

Table 10 gives the number of maternal deaths with rates per 1,000 live births in 19 countries of the Americas. The variation in these rates was great; in a few countries the rates were obviously high and in a few, low. These rates may fail to reflect the true situation in several countries.

TABLE 10

NUMBER OF MATERNAL DEATHS WITH RATES PER 1,000 LIVE BIRTHS IN 19 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	651	1.5	e) 632	1.4	621	1.4	635	1.4
Bolivia	989	8.3	1230	10.1	2020	15.5	1896	15.9
Brazil (a)	636	4.0	634	3.8	707	4.3	...	...
Chile	694	3.3	681	3.3	b) 721	3.3	b) 723	3.4
Colombia	1603	3.9	1508	3.6	1524	3.5	1725	3.7
Costa Rica	101	2.7	100	2.6	80	1.7	100	2.1
Dominican Rep. ...	193	1.8	163	1.8	124	1.3	...	...
El Salvador	213	2.4	227	2.4	183	1.9	b) 227	2.3
Guatemala	538	3.8	536	3.5	551	3.6	...	...
Haiti	191	20.0	229	22.7	125	11.9	...	...
Honduras	220	3.8	254	4.2	247	4.1	...	...
Mexico	3235	2.7	3089	2.6	b)2956	2.5	...	...
Nicaragua	53	1.2	86	1.9	80	1.7	94	1.9
Panama	80	3.3	57	2.3	80	2.8	88	2.9
Paraguay (d)	74	3.5	117	4.8	...	...	...	...
Peru	1047	4.3	951	3.7	1100	4.1	...	...
United States	2960	0.8	2812	0.7	c)2530	0.7	...	...
Uruguay	73	1.6	77	1.7	...	...	...	...
Venezuela (e)	684	3.2	848	3.8	649	2.8	560	2.3

(a) Federal District and Capitals of States, excluding city of São Paulo.
(b) Provisional.
(c) Based on a 10 per cent sample of death certificates.
(d) Area with 83 per cent of population.
(e) Estimate.

Principal Causes of Death

The reports received from the countries contained a table giving the principal causes of death. The causes of death selected as the principal causes depend on the list of titles used in ranking. The inclusions for all countries were not the same. In the United States the causes of death are ranked on the basis of a list of 64 selected causes (a) of death which is in accordance with the recommendations of the Public Health Conference on Records and Statistics. In certain countries, bronchitis and pneumonia were combined in ranking while in others influenza and pneumonia were combined. Also in certain countries large groups of causes were given. In some of the countries the International Statistical Classification of Diseases, Injuries and Causes of Death (1948) was used while in others the 1938 Revision of the International List of Causes of Death, and in others the data did not indicate the classification used. The data as given in the Four-Year Reports were combined in order to make the inclusions in the principal causes as uniform as possible. Also only the first five principal causes have been included in Table 11 in order to give as much comparability as possible in this presentation. The group, symptoms, senility and ill-defined conditions (780-795 of 1948 Classification) was excluded from ranking. In countries with areas lacking medical facilities many deaths may have been included in this group. If the number of deaths due to unknown and ill-defined causes is large, the numbers of deaths from specific causes are understated. The death rates from the five leading causes in several countries are thus lower than they would be if the causes of all deaths were known. In one country, deaths from unknown or ill-defined causes were distributed to specific causes.

(a) Leading Causes of Death, Vital Statistics-Special Report, Vol. 37, No. 15, 1953; National Office of Vital Statistics, U.S. Public Health Service.

TABLE 11

FIRST FIVE PRINCIPAL CAUSES OF DEATH WITH RATES PER 100,000 POPULATION FOR 17 COUNTRIES OF THE AMERICAS, 1952

Country and Causes of Death	Number	Rate
ARGENTINA	156 593	867.4
Diseases of circulatory system	36 288	201.0
Cancer and tumors	21 665	120.0
Vascular lesions	12 457	69.0
Violent deaths and accidents	8 485	47.0
Tuberculosis	7 944	44.0
BOLIVIA	48 326	1564.2
Influenza and pneumonia	3 947	127.8
Malaria	1 980	64.1
Diarrhea and enteritis	1 799	58.2
Tuberculosis	1 651	53.4
Dysentery	624	20.2
BRAZIL (a)	95 317	1572.2
Diseases of digestive system	18 522	305.5
Diseases of circulatory system	11 907	196.4
Tuberculosis	9 402	155.1
Diseases of respiratory system	7 749	127.8
Diseases peculiar to first year of life	6 459	106.5
CHILE (b)	81 642	1373.2
Respiratory diseases and influenza	15 294	257.2
Diseases of digestive system	10 204	171.6
Cardiovascular diseases	8 844	148.8
Diseases of early infancy	8 542	143.7
Tuberculosis, all forms	6 564	110.4
COLOMBIA (c)	153 738	1306.4
Diarrhea and enteritis (119-120)	15 335	129.5
Pneumonia, all forms (107-109)	10 617	89.6
Congenital malformations and diseases peculiar to first year of life (157-161)	8 497	71.7
Diseases of the heart (90-95)	7 529	63.6
Bronchitis (106)	7 043	59.5
COSTA RICA (b, d)	9 902	1160.3
Gastro-enteritis and colitis and diarrhea of newborn (571, 572, 764.0)	1 455	170.5
Certain diseases of circulatory system (410, 420-468)	655	76.8
Malignant neoplasms, etc. (140-205)	646	75.7
Bronchopneumonia and bronchitis (491, 500-502)	637	74.6
Diseases of nervous system (330-357)	423	49.7
DOMINICAN REPUBLIC	22 515	1006.8
Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn	2 754	123.1
Malaria	2 239	100.1
Infections of newborn and other diseases peculiar to early infancy, and immaturity unqualified	1 755	78.5
Tuberculosis of respiratory system	1 301	58.2
Bronchitis	1 111	49.7
EL SALVADOR (d)	32 423	1701.8
Gastritis, duodenitis, enteritis and colitis, except diarrhea of newborn (543, 571, 572)	6 614	347.1
Malaria (110-117)	1 370	71.9
Pneumonia (490-493)	1 082	56.8
Avitaminosis and other deficiency states and anemias (280-286, 290-293)	900	47.2
Bronchitis (500-502)	745	39.1
GUATEMALA	71 994	2419.9
Diarrhea and gastroenteritis	8 864	297.9
Bronchitis and pneumonia	7 874	264.7
Malaria	6 947	233.5
Whooping cough	5 921	199.0
Diseases due to helminths	5 812	195.4
HONDURAS	19 148	1265.8
Malaria	3 178	210.1
Intestinal infections	1 428	94.4
Influenza and pneumonia	985	65.1
Dropsy	843	55.7
Diarrhea	802	53.0
MEXICO (d)	402 542	1475.4
Gastro-enteritis and colitis (571, 572)	67 505	247.4
Pneumonia (490-493)	55 660	203.9
Infections of newborn and ill-defined diseases of early infancy (763-768, 773-776)	28 318	103.8
Malaria (110-117)	22 050	80.8
Diseases of heart excluding hypertension with heart disease (410-434)	20 921	76.8
PANAMA (d, e)	6 824	890.0
Gastro-enteritis and colitis, except ulcerative (571)	525	68.5
Tuberculosis (001-019)	464	60.5
Diseases of heart, excluding chronic rheumatic heart disease and hypertension with heart disease (420-434)	454	59.2
Pneumonia (490-493)	405	52.8
Birth injuries, asphyxia and infections of newborn (760-769)	385	50.2
PARAGUAY (e)	8 279	699.8
Influenza and pneumonia	710	49.6
Tuberculosis, all forms	391	27.3
Cancer	318	22.2
Diseases of heart	290	20.3
Syphilis	277	19.3
PERU (d, f)	94 672	1123.3
Influenza and pneumonia (480-493)	16 820	199.4
Whooping cough (056)	7 573	89.9
Certain diseases of early infancy	6 658	79.0
Tuberculosis, all forms (001-019)	5 896	70.0
Diseases of circulatory system (400-468)	4 105	48.7
UNITED STATES (d, g)	1494 000	959.1
Diseases of heart (410-443)	547 280	351.3
Malignant neoplasms, etc. (140-205)	224 130	143.9
Vascular lesions, etc. (330-334)	169 620	108.9
Accidents (E800-E962)	98 470	63.2
Certain diseases of early infancy (760-776)	64 580	41.5
URUGUAY (c, e)	19 190	786.8
Cancer (45-55)	3 351	137.4
Diseases of circulatory system (90-103)	3 300	135.3
Intracranial lesions of vascular origin (083)	1 810	74.2
Tuberculosis, all forms (13-22)	1 299	53.3
Bronchitis and pneumonia (106-109)	1 188	45.8
VENEZUELA (d, h)	56 548	1078.0
Gastritis, duodenitis, enteritis and colitis except diarrhea of newborn (543, 571-572)	9 571	182.5
Tuberculosis, all forms (001-019)	5 883	112.2
Certain diseases of early infancy (760-776)	5 781	110.2
Diseases of heart (410-443)	4 751	90.6
Malignant neoplasms, etc. (140-205)	4 531	86.4

(a) Federal District and Capitals of States, excluding city of São Paulo.
(b) Provisional.
(c) Classification of Fifth Revision, 1938, of International List of Causes of Death.
(d) Classification of Sixth Revision, 1948, International Statistical Classification of Diseases, Injuries and Causes of Death.
(e) Year 1951.
(f) Area with 83 per cent of population.
(g) Estimate based on 10 per cent sample.
(h) Estimate.

Although there is lack of uniformity, the first five principal causes of death as given in Table 11 for 1952 indicate important health problems in the Americas. The crude death rates and death rates from the leading causes show considerable variation in Table 11. In part this reflects variations in mortality, in completeness and accuracy of medical certification, and to some extent, differences in age compositions of the countries.

A summary of the principal causes given in these countries is presented in Table 12. The leading cause of death in 9 of the 17 countries was specified as gastro-enteritis or diarrhea or the group of intestinal diseases. The fact that gastro-intestinal diseases lead as a principal cause of death shows the need of emphasis on environmental sanitation. The group, influenza and pneumonia, was leading in four countries and diseases of the circulatory system or heart diseases in two countries. Malaria and cancer were leading causes in the other two countries. Malaria appeared as one of the five principal causes in 6 countries and tuberculosis in 10 countries. The data in these two tables on principal causes show that communicable diseases appeared frequently among the leading causes of death in many countries and that the prevention of such diseases would result in a reduction of mortality.

TABLE 12

NUMBER OF COUNTRIES IN RANK ORDER OF FIRST FIVE PRINCIPAL CAUSES OF DEATH, IN 17 COUNTRIES OF THE AMERICAS, 1952

Causes of Death	Number of countries					
	Total	Rank order of cause of death				
		1	2	3	4	5
Tuberculosis	10	-	3	1	4	2
Malaria	6	1	3	1	1	-
Cancer	6	1	2	2	-	1
Vascular lesions etc. (a)	4	-	-	3	-	1
Circulatory system or heart disease	12	2	3	2	3	2
Influenza and pneumonia (b)	10	4	2	2	2	-
Bronchitis (c)	6	-	1	-	1	4
Gastritis, enteritis, diarrhea (d)	12	9	1	1	-	1
Disease of early infancy	9	-	-	5	1	3
Whooping cough	2	-	1	-	1	-
Accidents or external causes	2	-	-	-	2	-
Other causes (e)	6	-	1	-	2	3

(a) Diseases of nervous system in one country.
(b) Diseases of respiratory system in one country.
(c) Includes broncho-pneumonia in one country and pneumonia in two countries.
(d) Diseases of digestive system in one country.
(e) The group of other causes comprises intestinal infections with rank 2; and with rank 4 or 5, in one country each, dysentery, avitaminosis and anemias, helminths, dropsy and syphilis.

CHAPTER III

COMMUNICABLE DISEASES STATISTICS

As shown in Chapter II, communicable diseases ranked high among the five principal causes of death in nearly all of the countries. In addition to mortality, these diseases are responsible for considerable illness and economic loss. Also they contribute heavily to infant mortality and mortality in early childhood. Since effective methods of prevention are now available and are being applied successfully in many countries, the assignment of high priority to communicable disease control programs and to the collection of information to define and guide such programs is justified. In this chapter data given in the Four-Year Reports regarding 15 communicable diseases have been brought together for consideration of the problems involved in the control and eradication of these diseases in the Americas.

Each country has established a reporting system for the quarantinable and certain other communicable diseases. Current data regarding these cases are essential for local, national and international control programs. The number of reportable diseases varies by countries. The completeness of reporting depends on the availability of medical facilities, local health services, severity of the disease, etc. In areas with well developed health services reporting of cases is usually more complete and accurate than in areas without such services. Thus high case rates in certain areas may not reflect a greater problem than in areas with lower rates but rather they may reflect that the reporting systems are well developed and cases are known to the health authorities. Also the accuracy of the data depends on the availability of diagnostic facilities. In addition to information regarding cases from reporting systems, death rates from notifiable diseases aid in the measurement of health problems. Thus the tables in this chapter give the number of cases and deaths with rates per 100,000 population. Since the Four-Year Reports also gave the status of the program of control of 11 of these communicable diseases, these statements have been summarized and presented in this chapter.

As in vital statistics systems, there is great need for the improvement of systems of reporting of communicable diseases. In 1953, representatives of the 10 South American countries worked together in a Seminar held in Chile to develop basic procedures for reporting of communicable diseases. The recommendations of this group have been published as a Scientific Publication (a) of the Pan American Sanitary Bureau and will be useful to those desiring to develop or improve reporting procedures.

In 8 of the countries, reporting systems are in operation in certain areas which are termed "reporting areas." Table 13 gives these 8 countries and the estimated population living in reporting areas. These areas included from 11 per cent to 83 per cent of the population of the country in 1950. In several of these countries the percentage of the population included in reporting areas increased from 1950 to 1953. In the tables which follow, the populations of reporting areas have been used in the calculation of case rates in these 8 countries instead of the total populations which were used for the other countries with the exception of the quarantinable diseases where considered appropriate. In addition to the estimated populations living in reporting areas, Table 13 gives the estimated midyear populations for 1950-1953 for the 21 countries. These estimated populations were used for the calculation of birth, death and case rates with the exceptions of rates for reporting areas.

(a) Basic Procedures for the Reporting of Communicable Diseases, Scientific Publication No. 9, Pan American Sanitary Bureau, June, 1954.

The numbers of cases and deaths from diphtheria with rates per 100,000 population are given in Table 14. Although these data do not indicate that diphtheria is a major health problem diphtheria is a preventable disease and through control programs case and death rates can be reduced. The status of the control programs as given in Table 15 indicate that in several countries systematic vaccination programs are carried on. In a few countries triple vaccine (diphtheria, pertussis and tetanus) is being used.

Table 16 gives information regarding cases and deaths from dysentery. From the rank of gastro-enteritis and diarrhea in the principal causes of death, as well as from these rates, it is evident that the prevention of cases and deaths from gastro-intestinal diseases requires health services especially in the field of sanitation. Data regarding the Sanitation Programs are given in Chapter VI of this Summary.

Cases of leprosy were reported in 1952 in 17 countries of the Americas (Table 17). The numbers of deaths were small and in all countries the death rates in 1952 were less than 2.0 per 100,000 population. The status of the control programs for diagnosis and treatment of the patients are given in Table 18.

Although reporting of cases of malaria is probably incomplete in many areas of the Americas and probably inaccurate in certain areas where fevers are common or where the disease is declining rapidly, the case and death rates in Table 19 indicate that malaria is a major health problem in several countries. In 3 countries the death rates exceeded 100.0 per 100,000 population in 1952 and in 4 others they were greater than 50 per 100,000 population. However, in a few countries the rates were very low. The status of malaria control programs are given in Table 20. Also in the chapter on sanitation programs Table 48 gives a summary of the work being carried on for the control of insect vectors.

Death rates from measles (Table 21) were high in several of the countries of the Americas. Although 80 to 90 per cent of persons surviving to 20 years of age had an attack of measles, usually case fatality rates have been low. These high death rates in several countries indicate that steps need to be taken to prevent deaths from this common disease of childhood.

Thirteen countries reported cases of meningococcal infections (Table 22). The numbers of deaths from meningococcal infections were small in all countries supplying data.

Cases or deaths from plague during the 4-year period 1950-1953 were known to have occurred in 7 countries of the Americas (Table 23). Control programs were reported to be in operation in nearly all the countries reporting cases (Table 24). With the exception of a few cases in 1950 the cases of plague were not known to have occurred in seaports or other international ports.

Information regarding cases and deaths from smallpox, given in Table 25, indicates that this disease continues to occur in several countries of the Americas. The status of the control programs are given in Table 26. Although progress has been made, further efforts are needed for the eradication of the disease from the Americas.

Cases of syphilis were reported in 17 countries (Table 27), and judged by both case and death reports this disease constitutes an important health problem in several countries. The information given in Table 28 indicates that control programs are in operation in many of the countries.

Data provided in Table 29 indicate that tuberculosis is a reportable disease in nearly all of the countries and that cases are being reported and are thus known to

the health authorities. Although the tuberculosis death rates exceeded 100 per 100,000 population in 4 countries in 1952, in general the death rates appeared to be declining from the high rates noted in many countries in the past. The information given in Table 30 reveals that active control programs are in operation in many of the countries.

Typhoid fever, as other gastro-intestinal diseases, caused many cases and deaths in the Americas (Table 31). Although the death rates were high in several countries (in 4 the rates were 10.0 or more per 100,000 population in 1952) in a few countries the rates were very low.

Sixteen of the countries reported a case or cases of typhus fever during this four-year period (Table 32). In a few countries all or nearly all of the cases were louse-borne while in others only the murine form was found. No distinction was made in the data provided; however, the information given on the status of the control programs (Table 33) indicates the nature of the problems as well as gives control programs.

From reports of cases and also of deaths from whooping cough, this disease appeared to be causing considerable morbidity and mortality among children in the Americas (Table 34). Although the data may not be entirely accurate the size of these death rates indicates the need for investigations to determine the cause and for the application of preventive measures. Triple vaccine (diphtheria, pertussis, tetanus) was reported to be in use in several countries (Table 35). The high value and low cost of this method of prevention justify the addition and expansion of programs of immunization against whooping cough.

Yaws is a disease which is reported only in a limited area in the Americas. Five countries supplied information regarding cases of yaws (Table 36). Additional information regarding the occurrence of the disease, as well as the work carried on to eradicate this disease, is given in Table 37.

Eight countries gave information regarding cases and/or deaths from jungle yellow fever during this period (Table 38). The work being carried on for the control of yellow fever is described in four tables: Table 39 for the program in general; Table 40, the viscerotomy program; Table 41, the Aëdes aegypti eradication program; and Table 42, the program of vaccination against yellow fever.

TABLE 13

ESTIMATED TOTAL POPULATION OF 21 COUNTRIES OF THE AMERICAS AND ESTIMATED POPULATION LIVING IN REPORTING AREAS IN 8 COUNTRIES, WITH PERCENTAGES OF TOTAL POPULATION, FOR MIDYEARS 1950-1953

Country	Estimated midyear population							
	1950		1951		1952		1953	
	Population	Per cent	Population	Per cent	Population	Per cent	Population	Per cent
TOTAL AREA								
Argentina	17 196 809	.	17 644 117	.	18 053 913	.	18 379 000	.
Bolivia (a)	3 019 031	.	3 054 052	.	3 089 479	.	3 127 603	.
Brazil	51 944 397	.	53 033 354	.	54 122 311	.	55 211 268	.
Chile	5 786 283	.	5 865 849	.	5 945 415	.	6 024 981	.
Colombia	11 333 380	.	11 586 120	.	11 844 090	.	12 107 810	.
Costa Rica	801 000	.	825 070	.	853 412	.	881 313	.
Cuba	5 256 437	.	5 325 322	.	5 394 396	.	...	.
Dominican R.	2 130 943	.	2 182 951	.	2 236 228	.	2 290 805	.
Ecuador	3 202 757	.	3 298 839	.	3 345 628	.	...	.
El Salvador	1 857 023	.	1 880 948	.	1 905 240	.	1 929 779	.
Guatemala	2 802 729	.	2 886 567	.	2 975 143	.	a) 3 068 488	.
Haiti	b) 3 080 000	.	b) 3 137 000	.	c) 3 200 000	.	b) 3 265 000	.
Honduras	1 428 089	.	1 470 000	.	1 512 668	.	1 555 664	.
Mexico	25 825 836	.	26 540 135	.	27 283 148	.	28 052 513	.
Nicaragua	1 059 533	.	1 092 759	.	1 128 409	.	d) 1 165 534	.
Panama	748 269	.	766 777	.	785 285	.	803 793	.
Paraguay	1 396 842	.	1 431 763	.	1 467 557	.	1 504 246	.
Peru	8 103 519	.	8 264 179	.	8 428 392	.	8 591 300	.
United States	151 228 000	.	153 383 000	.	155 767 000	.	158 185 000	.
Uruguay	2 397 844	.	2 438 995	.	b) 2 481 000	.	b) 2 523 000	.
Venezuela	4 981 493	.	5 113 498	.	5 245 504	.	5 377 508	.
REPORTING AREA (e)								
Bolivia (b)	2 264 000	75	2 443 000	80	2 533 000	82	2 596 000	83
Brazil (f)	5 727 000	11	5 895 000	11	6 062 537	11	...	...
Colombia (b)	7 854 000	70	8 347 000	73	7 361 000	63	9 820 000	81
Ecuador (b,g)	681 000	22	700 000	22	717 000	22	...	...
El Salvador	743 000	40	865 000	46	922 000	48	888 000	46
Paraguay	1 154 000	83	1 183 000	83	1 213 000	83	...	...
Peru (b)	3 370 000	42	3 502 000	42	3 413 000	40	3 455 000	40
Venezuela (b)	2 638 000	53	2 830 000	55	2 974 000	57	3 109 000	58

(a) Revised report.
(b) Estimated by PASB as basis for computation of rates.
(c) Source: United Nations Demographic Yearbook.
(d) Provisional.
(e) Reporting area is administrative territorial unit from which reports are regularly received.
(f) Federal District and Capitals of States, excluding city of Sao Paulo.
(g) Capital cities of provinces.

TABLE 14

NUMBER OF REPORTED CASES AND DEATHS OF DIPHTHERIA WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2 137	12.3	1 896	10.7	2 228	12.3	2 136	11.6
Bolivia (a)	65	2.9	136	5.6	109	4.3	b) 98	3.8
Brazil (c)	3 733	47.1	3 585	43.8	3 003	35.6	1 339	17.9
Chile	1 023	17.7	1 449	24.7	d)1 260	21.2	d) 890	14.8
Colombia (a)	2 156	27.5	2 526	30.3	1 877	25.5	1 511	15.4
Costa Rica	380	47.4	435	52.7	237	27.8	178	20.2
Cuba	219	4.2	200	3.8	154	2.9	...	...
Dominican Rep	218	10.2	224	10.3	81	3.6	...	...
Ecuador (e)	306	44.9	454	64.9	259	36.0	...	...
El Salvador (a)	84	11.3	105	12.1	122	13.2	d) 294	33.1
Guatemala	41	1.5	78	2.7	91	3.1	...	...
Haiti	111	3.6	251	8.0	86	2.7	...	...
Honduras	...	...	...	...	...	...	...	...
Mexico	1 236	4.8	997	3.8	1 060	3.9	...	...
Nicaragua	47	4.4	51	4.7	38	3.4	40	3.4
Panama	97	13.0	73	9.5	41	5.2	32	4.0
Paraguay (a)	154	13.3	177	15.0	24	2.0	...	...
Peru (a)	456	13.5	173	4.9	175	5.1	...	...
United States	5 796	3.8	3 983	2.6	2 960	1.9	...	...
Uruguay	220	9.2	224	9.2	198	8.0	194	7.7
Venezuela (a,d)	1 011	38.3	898	31.7	515	17.3	352	11.3
DEATHS								
Argentina	207	1.2	176	1.0	165	0.9	...	...
Bolivia	14	0.5	20	0.7	25	0.8	32	1.0
Brazil (c)	312	5.4	293	5.0	259	4.3	...	...
Chile	214	3.7	222	3.8	d) 124	2.1	d) 143	2.4
Colombia	518	4.6	599	5.2	569	4.8	b) 415	3.4
Costa Rica	68	8.5	76	9.2	66	7.7	36	4.0
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	120	5.7	122	5.6	122	5.5	...	...
Ecuador (e)	104	15.3	86	12.3	99	13.8	...	...
El Salvador	29	1.6	17	0.9	25	1.3	d) 39	2.0
Guatemala	30	1.1	32	1.1	49	1.6	...	...
Haiti	2	0.1	3	0.1	8	0.3	...	...
Honduras	9	0.6	5	0.3	6	0.4	...	...
Mexico	538	2.0	582	2.2	525	1.9	...	...
Nicaragua	6	0.6	2	0.2	4	0.4	-	-
Panama	7	0.9	9	1.2	...	...	...	...
Paraguay (a)	8	0.7	13	1.1	...	...	...	...
Peru	192	2.4	75	0.9	129	1.5	...	...
United States	410	0.3	302	0.2	f) 250	0.2	...	...
Uruguay	6	0.3	6	0.2	...	...	...	...
Venezuela (g)	193	3.9	165	3.2	87	1.7	58	1.1

(a) For reporting areas.
(b) Revised report.
(c) Federal District and State Capitals, excluding city of Sao Paulo.
(d) Provisional.
(e) Capital cities of provinces.
(f) Estimate based on a 10-per cent sample of death certificates.
(g) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 15
STATUS OF THE DIPHTHERIA CONTROL PROGRAM
IN 17 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Cases of diphtheria are very rare. Vaccinations are applied not systematically, but only occasionally when a case occurs.
Brazil	Diphtheria is an important problem in public health work. The state health services, through their district health units, endeavor to solve the problem principally by immunizing children of susceptible age. The Health Ministry, through the National Children's Department, provides technical, material, and financial assistance to both state and private public health or maternal and child health organizations. Part of this assistance comes from UNICEF, which includes in its program the promotion of antidiphtheria immunization practices. (Condensed from the Report to the XIV PASC, page 9).
Chile	In the past three years the two principal activities of the diphtheria program have been application of patient-control measures and a combined vaccination program. Patient control based on diagnosis and prompt notification of cases, isolation, treatment and epidemiological investigation, is carried out only in the country's urban areas. The combined vaccination program, assisted by the Pan American Sanitary Bureau and UNICEF, has been under way since 1951, and covers the Provinces of Santiago and Concepción and the Department of San Felipe, which account for one third of the total population of the country. The plan adopted includes first an urban phase and second a rural phase, during which 40 per cent of all children from 3 months to 5 years of age will be immunized, with the ultimate objective of covering 70 per cent of this group. As of 31 December 1953, in the Province of Santiago 50 per cent of the susceptible children from 3 months to 6 years of age living in urban sectors and 40 per cent of those in rural areas had been immunized with two doses, whereas in the Province of Concepción and the Department of San Felipe up to 40 per cent of the susceptible children had been covered.
Colombia	Vaccination work in general is being intensified through the health agencies of the Ministry and the work in certain cities through the UNICEF campaign.
Costa Rica	Permanent diphtheria-pertussis-tetanus vaccination programs.
Cuba	Diphtheria is a notifiable disease in Cuba. Classic control measures are applied.
Dominican Rep.	When sporadic cases occur, control campaigns are undertaken.
Ecuador	When cases occur, emergency programs are implemented.
El Salvador	A mass vaccination campaign has been carried on since 1952, with the use of triple vaccine, diphtheria-pertussis-tetanus.

TABLE 15
STATUS OF THE DIPHTHERIA CONTROL PROGRAM
IN 17 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Mexico	Children are vaccinated during the first three months of life; booster shots are applied in the two years following completion of the protection series, and at the age of six years. From the age of seven, in the case of positive Schick test, vaccination or booster shots with combined toxoid are applied, after the Moloney test. The use of combined toxoid - plain pertussis with diphtheria toxoid - is preferred. Contacts under six months of age receive passive immunization.
Nicaragua	Diphtheria is one of the few diseases reported by private local physicians. Contacts are carefully controlled.
Panama	Programs are included in the routine activities of the health units.
Paraguay	Because of its low incidence in the country, diphtheria does not constitute a public health problem and there is no special control program.
Peru	A nation-wide diphtheria control program was initiated under an agreement concluded with the WHO and UNICEF.
United States	In 1950, 5,796 cases of diphtheria were reported, and 410 deaths. In 1953, 2,397 cases were reported, and it is anticipated that final mortality figures will show a corresponding decline, indicating continued progress in control.
Uruguay	Morbidity figures for 1944 were 4,978 cases, with 196 deaths. Application of the decree making diphtheria vaccination a requirement for school enrollment led to a rapid decrease in annual morbidity to 200 cases, with 6 deaths. This down trend will be even more marked in future years with the introduction of compulsory pre-school-age vaccination, for which legislation is under study and will be approved during 1954. The presence of cases in adolescents and adults made the following measures necessary: a) fractionated vaccinations in persons over 12 years of age, after a Schick test; b) requirement that the notification of cases be accompanied by a report on the pharyngeal discharge. The 805 patients reported between 1950 and 1953 were classified by age as follows: 260 children under 7 years; 124 from 7 to 10 years; 126 from 11 to 20 years; 247 over 20 years; and 48 ages unknown.
Venezuela	All local health departments apply systematic vaccinations against diphtheria and carry out routine measures for control of cases, contacts, and carriers. In addition, mass vaccination campaigns are undertaken periodically wherever the problem is of special importance.

TABLE 16

NUMBER OF REPORTED CASES AND DEATHS OF DYSENTERY WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2 005	11.6	2 178	12.4	3 343	18.5	2 606	14.2
Bolivia (a)	1 470	64.9	2 036	83.3	1 098	43.3	b) 3 965	152.7
Brazil (c)	518	9.0	797	13.5	780	12.9	323	6.5
Chile	44	0.8	26	0.4	d) 29	0.5	d) 16	0.3
Colombia (a)	51 236	652.3	48 836	585.1	52 985	719.8	76 323	777.2
Costa Rica	5 574	696.0	805	97.6	852	99.8	801	90.9
Cuba	55	1.1	...	...	...	...	...	...
Dominican Rep.	1 497	70.3	1 746	80.0	761	34.0	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	2 487	334.7	5 846	675.8	5 126	556.0	d) 4 343	489.1
Guatemala	3 175	113.3	3 986	138.1	5 704	191.7	...	...
Haiti	3 304	107.3	2 341	74.6	4 659	145.6	...	...
Honduras	...	...	7 884	536.3	5 804	383.7	...	...
Mexico	15 336	59.4	18 906	71.2	21 315	78.1	...	...
Nicaragua	4 283	404.2	4 316	395.0	6 950	615.9	5 832	500.4
Panama	616	82.3	464	60.5	402	51.2	1 087	135.3
Paraguay (a)	1 653	143.2	1 752	148.1	2 447	201.8	...	...
Peru (a)	7 077	210.0	8 712	248.8	8 313	243.6	f) 8 482	245.0
United States	...	...	...	...	...	...	...	...
Uruguay	17	0.7	6	0.2	5	0.2	6	0.2
Venezuela (a,d)	40 163	1 522.4	39 740	1 404.3	55 564	1 868.5	51 788	1 665.7
DEATHS								
Argentina	50	0.3	40	0.2	37	0.2	...	...
Bolivia	496	16.4	782	25.6	624	20.2	812	26.0
Brazil (c)	1 051	18.3	1 290	21.9	1 155	19.1	...	...
Chile	27	0.5	26	0.4	d) 15	0.3	d) 40	0.7
Colombia	...	...	...	...	...	...	b) 723	6.0
Costa Rica	50	6.2	49	5.9	54	6.3	53	6.0
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	184	8.7	191	8.8	245	11.0	...	...
Ecuador (e)	75	11.0	66	9.4	68	9.5	...	...
El Salvador	110	5.9	191	10.2	222	11.7	d) 160	8.3
Guatemala	1 198	42.7	1 232	42.7	1 750	58.8	...	...
Haiti	10	0.3	8	0.3	36	1.1	...	...
Honduras	96	6.7	68	4.6	61	4.0	...	...
Mexico	4 897	19.0	7 393	27.8	5 719	20.9	...	...
Nicaragua	71	6.7	39	3.6	83	7.4	45	3.9
Panama	43	5.7	43	5.6	...	...	...	...
Paraguay (a)	81	7.0	56	4.7	...	...	...	...
Peru	1 379	17.0	1 343	16.3	1 492	17.6	...	...
United States	923	0.6	1 040	0.7	g) 980	0.6	...	...
Uruguay	2	0.1	3	0.1	...	...	...	...
Venezuela (h)	558	11.2	448	8.8	547	10.4	420	7.8

(a) For reporting areas.
(b) Revised report.
(c) Federal District and State Capitals, excluding city of Sao Paulo.
(d) Provisional.
(e) Capital cities of provinces.
(f) Through November.
(g) Estimate based on 10-per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 17

NUMBER OF REPORTED CASES AND DEATHS OF LEPROSY WITH RATES PER 100,000 POPULATION IN 18 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	323	1.8	552	3.1	404	2.2	288	1.6
Bolivia (b)	53	2.3	10	0.4	8	0.3	c) 36	1.4
Brazil	4 598	8.9	4 829	9.1	5 044	9.3	d)5 306	9.6
Colombia (b)	498	6.3	635	7.6	705	9.6	903	9.2
Costa Rica	59	7.4	31	3.8	25	2.9	8	0.9
Cuba	127	2.4	72	1.4	99	1.8	...	...
Dominican Rep.	...	...	37	1.7	35	1.6	...	...
Ecuador	10	0.3	6	0.2	-	-	...	...
Guatemala	5	0.2	7	0.2	3	0.1	...	...
Haiti	8	0.3	10	0.3	2	0.1	...	...
Mexico	-	-	301	1.1	248	0.9	...	...
Nicaragua	...	...	...	...	...	...	11	0.9
Panama	-	-	2	0.3	4	0.5	9	1.1
Paraguay (b)	317	27.5	375	31.7	340	28.0	...	...
Peru (b)	86	2.6	79	2.3	92	2.7	e) 91	3.0
United States	44	0.0	57	0.0	57	0.0	...	...
Uruguay	6	0.3	10	0.4	13	0.5	10	0.4
Venezuela (b,f)	912	34.6	923	32.6	616	20.7	836	26.9
DEATHS								
Argentina	60	0.4	66	0.4	60	0.3	...	...
Bolivia	...	...	...	...	...	...	...	...
Brazil	95	1.7	108	1.8	105	1.7	...	...
Colombia (g)	...	...	...	...	91	0.8	c) 104	0.9
Costa Rica	1	0.1	2	0.2	4	0.5	3	0.3
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	-	-	-	-	-	-	...	...
Ecuador (h)	8	1.2	1	0.1	3	0.4	...	...
Guatemala	6	0.2	1	0.0	1	0.0	...	...
Haiti	...	...	1	0.0	...	...	...	...
Mexico	117	0.5	136	0.5	75	0.3	...	...
Nicaragua	1	0.1	-	-	-	-	-	-
Panama	-	-	1	0.1	...	...	...	...
Paraguay (b)	4	0.4	4	0.4	...	...	...	...
Peru	10	0.1	4	0.0	7	0.1	...	...
United States	3	0.0	3	0.0	-	-	...	...
Uruguay	4	0.2	6	0.2	...	...	...	...
Venezuela (h)	78	1.6	57	1.1	45	0.9	42	0.8

(a) A country reporting neither a case nor a death is excluded.
(b) For reporting areas.
(c) Revised report.
(d) Incomplete.
(e) Through November.
(f) Provisional.
(g) Deaths reported from leprosariums.
(h) Capital cities of provinces.
(i) Ill-defined causes of death distributed to defined causes.

TABLE 18
STATUS OF THE LEPROSY CONTROL PROGRAM
IN 15 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Special Service. Out of approximately 2,000 patients, only 120 are isolated.
Brazil	The National Leprosy Service of the National Department of Health is responsible for leprosy control work in the country. The disease is spread over all regions of Brazil, the incidence index for the entire country being 1.2 per cent or approximately 67,000 patients. Contagious type cases account for 54.5 per cent of the total. Under the present organization of antileprosy services, the Federal Government is responsible for planning and supervising the national campaign, and provides technical and material assistance to the specialized organizations. The states maintain the leprosaria and dispensaries, which operate under the Leprosy Prophylaxis Service. An exception is the State of São Paulo which, because of the size of its organization, has an autonomous Leprosy Department of the state health service. The services throughout the country include a good chain of isolation hospitals, including 37 leprosaria with 23,562 patients. The dispensaries generally function as multipurpose health units of the districts. In addition to these various leprosy control services, Brazil has a chain of 31 preventoria for 4,314 child contacts of leprosy patients, administered and maintained by private institutions with financial aid from the Federal Government. The use of sulfonic drugs for treatment has become generalized, with the result that, in the period 1950-1953, 7,836 patients were no longer subject to compulsory isolation (as they were bacterioscopically negative for a long period). Of that number, 2,023 were discharged on a provisional basis and 700, definitively. The Federal Government has constructed and equipped, near the leprosarium at the national capital, a separate building to house laboratories for study and research on the etiopathogeny and therapeutics of leprosy. The preventive value of BCG is also being investigated; an extensive vaccination campaign is being carried out in the State of Goiás, and among persons in contact with the large leprosy foci. (Condensed from the Report of Brazil to the XIV PASC, pages 7 to 9).
Colombia	Intensification of epidemiological activities in coordination with all the public health agencies. Increase in the number of treatments and of dermatological dispensaries. Improvements in leprosaria.
Costa Rica	An active campaign is maintained throughout the country by control of contacts at their homes. In addition, a Dermatological Department is operated in San José for the examination of conditionally discharged patients, out-patients, and contacts.
Cuba	Leprosy is a notifiable disease. There is a foundation specifically concerned with this disease.
Dominican Rep	All patients suffering from leprosy are admitted to a specialized sanatorium.
Ecuador	Campaign in the survey stage.

TABLE 18
STATUS OF THE LEPROSY CONTROL PROGRAM
IN 15 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
El Salvador	There are only 62 known cases of the disease.
Mexico	The leprosy campaign is conducted through 21 Dermatological Centers operated in different parts of the country, an Asylum in Zoquiapán, State of Mexico, and 4 special wards for leprosy patients in hospitals.
Nicaragua	Discovered cases are reported by the leprosarium and by some private physicians.
Panama	Surveillance and isolation of patients.
Paraguay	Leprosy is controlled and combatted through a special department established for this purpose.
United States	Thirty (30) patients were admitted to the National Leprosarium in Carville during 1953 and 12 of these were foreign born. A few new cases were recognized but not admitted. The incidence of leprosy has not changed in several years.
Uruguay	Total number of leprosy cases in the country: the minimum figure can be taken as 500 patients and the maximum, 1,000. There are 62 patients in the Service at Fermín Ferreira Hospital. Forty-two patients were admitted during the past four years, but the number would have been higher had the facilities of the Service permitted. The principal prophylactic measures applied are: 1) isolation, according to the degree of contagiousness in each patient and the capacity of the Service, which for some time has been crowded; 2) out-patient treatment of the sick and of moderate cases or cases that cannot be hospitalized; 3) examination and control of the patient's family and contacts; 4) suitable information to patients and their families on the characteristics of the disease, protective measures, etc.; 5) application of BCG to children exposed to contagion, etc. The substances used in treatment are sulfonic derivatives, principally, and on a smaller scale, TBI, chaulmoogra oil derivatives, hydracid of nicotinic acid, PAS, etc. Antibiotics are given in some cases. Symptomatic medication and general care are given to stimulate the physical and psychic defenses of the patient.
Venezuela	There are 63 dispensaries for case detection, organized under 13 regional Epidemiological Services. Patients are treated and contacts are given BCG vaccination. There are two leprosaria, with 1,100 beds.

TABLE 19

NUMBER OF REPORTED CASES AND DEATHS OF MALARIA WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2 000	11.6	1 833	10.3	1 296	7.3	509	2.8
Bolivia (a)	9 783	432.1	15 324	627.3	12 015	474.2	b)21 014	809.5
Brazil	...	...	...	...	...	...	...	...
Chile	-	-	-	-	-	-	h) 1	0.0
Colombia (a)	91 551	1 165.6	86 137	1 032.0	73 993	1 005.1	83 877	854.1
Costa Rica	10 068	1 257.1	8 797	1 066.2	1 903	223.0	1 407	159.6
Cuba	723	13.8	930	17.5	220	4.1	...	...
Dominican Rep.	17 310	812.3	23 288	1 066.8	8 760	391.7	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	17 647	2 375.1	13 176	1 523.2	10 561	1 145.4	c) 6 561	738.9
Guatemala	39 809	1 420.4	41 821	1 448.8	39 393	1 324.1	...	...
Haiti	71 954	2 336.2	72 176	2 300.8	90 928	2 841.5	...	...
Honduras	...	...	12 138	825.7	10 194	673.9	...	...
Mexico	73 029	282.8	54 366	204.8	55 991	205.2	...	...
Nicaragua	6 658	628.4	5 914	541.2	b)11 628	1 030.5	b)13 735	1 178.4
Panama	3 985	532.6	3 975	518.4	2 780	354.0	4 194	521.9
Paraguay (a)	7 224	625.9	13 918	1 176.5	9 127	752.4	...	...
Peru (a)	20 057	595.2	17 824	509.0	17 738	519.7	d)16 188	469.0
United States	2 184	1.4	5 600	3.7	7 023	4.5	...	...
Uruguay	-	-	-	-	-	-	-	-
Venezuela (c)	2 111	42.4	2 323	45.4	2 679	51.1	2 041	38.0
DEATHS								
Argentina	11	0.1	9	0.1	4	0.0	...	...
Bolivia	1 360	45.1	1 720	56.3	1 980	64.1	1 152	36.9
Brazil (e)	718	12.5	557	9.4	455	7.5	...	...
Chile	-	-	-	-	-	-	-	-
Colombia	2 697	23.8	3 091	26.8	2 826	24.0	b) 3 090	25.5
Costa Rica	571	71.3	459	55.6	320	37.5	193	21.9
Cuba	...	...	...	...	...	...	...	...
Dominican Rep	2 170	101.8	2 278	104.4	2 239	100.1	...	...
Ecuador (f)	220	32.3	152	21.7	121	16.8	...	...
El Salvador	1 704	91.8	1 500	79.7	1 370	71.9	c) 977	50.6
Guatemala	6 844	244.2	6 709	232.4	6 947	233.5	...	...
Haiti	113	3.7	152	4.8	92	2.9	...	...
Honduras	3 432	240.3	3 377	229.7	3 178	210.1	...	...
Mexico	22 996	89.0	24 681	93.0	22 050	80.8	...	...
Nicaragua	2 961	279.5	1 586	145.1	b) 977	86.6	984	84.4
Panama	210	28.1	215	28.0	...	...	...	...
Paraguay (b)	100	8.7	172	14.5	...	...	...	...
Peru	1 903	23.5	1 700	20.6	1 575	18.6	...	...
United States	76	0.1	64	0.0	g) 30	0.0	...	...
Uruguay	-	-	h) 1	0.0	...	...	...	...
Venezuela (i	471	9.5	273	5.3	131	2.5	103	1.9

(a) For reporting areas.
(b) Revised report.
(c) Provisional.
(d) Through November.
(e) Federal District and State Capitals, excluding city of Sao Paulo.
(f) Capital cities of provinces.
(g) Estimate based on 10-per cent sample of death certificates.
(h) Traveler from abroad.
(i) Ill-defined causes of death distributed to defined causes.

TABLE 20
STATUS OF THE MALARIA CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Special Service. Of an area of 190,000 square kilometers and approximately 600,000 inhabitants, some 70,000 square kilometers with 500,000 inhabitants are under control. Control activities are being expanded year by year.
Brazil	The National Malaria Service of the National Department of Health is the agency responsible for malaria control work throughout the country. Intradomicile application of DDT, begun in 1945, is being extended rapidly. Physicians specialized in malariology have been directing the field activities or, in their absence, widely experienced field inspectors carry on the work. In urban areas, DDT is applied by teams under the direction of an inspector. In easily accessible rural areas, the work is done by "drag" teams ("arrastão," a procedure similar to that of drag fishing), who travel by truck or jeep and cover a given area within a scheduled time. Launches are used to transport men and materials in certain coastal areas. The "zoning" ("zonagem") system is used in areas difficult to reach: one operator is assigned to a small rural area with a certain number of houses that he must cover within a given period, using his own means of transportation. A paste with 80 per cent technical DDT, used to prepare a thin aqueous solution, is being produced and applied successfully by the Service. Two applications of DDT per year are required to ensure the success of vector eradication work in malarious areas; at present only about 20 per cent of the houses receive such treatment. The house application of DDT in the area of transmission by A. kerteszia, in the southern coastal region of the country, is greatly reducing the incidence of malaria; in nonepidemic years this transmission may drop to insignificant levels. In epidemic years, extra- and peri-domicile transmission (i.e., outside and around the house) causes an increase in malaria cases which cannot be curbed by one simple application of DDT to the houses. In order to check such transmission, studies have been made on the spraying of outside walls of houses, vegetation, and other possible mosquito refuges in the area surrounding the dwelling. To control residual malaria transmitted by A. darlingi outside dwellings, the Service has recommended the addition of chloroquine to table salt. Preliminary results of checks made in the field and in hospitalized patients were quite favorable. During the period 1950-1953, from 22 to 25 million inhabitants were protected annually by the application of DDT. Examinations of some 30 thousand persons annually in the four-year period showed parasitic indices of from 0.49 to 2.26. The percentage of positivity in the 100 to 200 thousand blood samples taken annually decreased from 6.60 in 1950 to 2.57 in 1953. In the same period, the average number of anopheles per one hundred house inspections varied between 0.73 and 1.63. The coastal zones with malaria transmitted by A. tarsimaculatus, A. albitarsis, and A. darlingi have received DDT applications twice a year since 1945; before such applications 13,007 cases were confirmed by blood analysis but by 1953 confirmed cases had dropped to 93. Comparative studies appear to confirm the effectiveness of

TABLE 20
STATUS OF THE MALARIA CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Brazil (Cont.)	using table salt with chloroquine; the malaria parasitic index decreased in the zones treated during the year to 1.0 and even to 0.0, whereas during that same period in neighboring control areas the index rose above the initial level. (Condensed from the Report to the XIV PASC, pages 19 to 30).
Chile	No cases of malaria of local origin occurred in the province of Tarapaca during the period under review. Surveillance of larval and nymph anopheline foci was maintained through searches made by civilian personnel and guards in valleys and ravines of the Province, over a total of 360 kilometers. Foci discovered were immediately destroyed with insecticides. The antimalaria program is being pursued with the aim of preventing the recurrence of autochthonous cases, maintaining strict control over imported cases of infection, and stamping out the sporadic anopheline outbreaks that occur.
Colombia	Extensive work for the destruction of vectors in malaria zones. Drug distribution. Special studies.
Costa Rica	The DDT service covered the entire malaria zone in the country. Twice a year a total of 28,080 houses were treated with DDT from January to June, and 34,490 from July to December.
Cuba	Malaria is a notifiable disease. Classic control measures are applied. The country maintains a Malaria Commission.
Dominican Rep.	The malaria control campaign is carried out with the use of DDT throughout the country. Previously constructed drainage works are kept up, and prophylactic control is maintained with antimalarial drugs.
Ecuador	An eradication plan, based on house spraying with DDT, is in full development and a marked decrease in morbidity is being noted throughout the country.
El Salvador	Intradomicile application of DDT in the hyperendemic malaria zones. The cost of the campaign amounts to US$250,000.
	The antimalaria campaign continued to expand during the period under review. In 1950, DDT was applied twice to 6,783 dwellings and some 34,000 persons were protected. The bi-yearly DDT treatments reached a peak in 1952, when 31,082 houses and 157,000 persons were covered. Single applications of DDT per year increase continually, reaching totals of 124,187 houses treated in 973 localities and 621,000 persons protected in 1953.
Haiti	A control program with WHO Technical Assistance and aid from UNICEF is ready for implementation.
Honduras	Malaria is combatted through intradomicile application of DDT, an average of 70,000 houses and 350,000 persons being covered annually.

TABLE 20
STATUS OF THE MALARIA CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Mexico	The study of the malaria problem in the country, initiated some time ago, is continuing. Measures are directed toward the final eradication or the curbing of the disease. New antimalaria services have been established and existing services modified. Other activities include training of personnel for the Campaign, publicity and health education, and organization of the committee on malaria sanitation. The Department of the National Antimalaria Campaign has the advice of specialists on the Technical Council of the Campaign.
Nicaragua	The majority of the cases are those reported by the Public Health Centers.
Panama	The program now under way covers 60 per cent of the endemic zone population.
Paraguay	A nation-wide campaign to combat malaria by systematic house-to-house application of residual-action insecticides has been under way for two years.
Peru	There is a campaign for the application of residual-action insecticides in the valleys of the Coastal Region and in some valleys of Cuzco Department. The agreement concluded with WHO and UNICEF for the insect control campaign in the Coastal Region during 1952-1953 has been put into effect.
United States	One thousand four hundred eighteen (1,418) cases of malaria were reported during 1953, representing a substantial decrease from the 7,023 cases reported during 1952. The majority of these cases were exogenous. Twenty-four (24) confirmed indigenous infections occurred in persons who were infected during 1952 and had long incubation periods. Only four other confirmed indigenous cases have been recognized.
Venezuela	Of the 630,950 houses in the malaria zone, 532,958 were sprayed, with a total of 414,527 kilograms of 100 per cent insecticide used and an average of 1.65 sprayings applied per house. Over two million inhabitants in 23,400 localities were protected.

TABLE 21

NUMBER OF REPORTED CASES AND DEATHS OF MEASLES WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	4 703	27.3	5 014	28.4	12 733	70.5	14 372	78.2
Bolivia (a)	593	26.2	624	25.5	508	20.1	b) 506	19.5
Brazil (d)	2 389	30.1	1 216	14.9	1 615	19.1	785	10.5
Chile	1 038	17.9	3 520	60.0	c) 4 136	69.6	c) 8 297	137.7
Colombia	19 508	248.4	14 678	175.8	17 275	234.7	26 438	269.2
Costa Rica	587	73.3	564	68.4	469	55.0	1 197	135.8
Cuba	496	9.4	543	10.2	283	5.3	...	...
Dominican Rep.	145	6.8	935	42.8	42	1.9	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	1 916	257.9	3 087	356.9	3 117	338.1	c) 1 254	141.2
Guatemala	1 377	49.1	792	27.4	3 657	122.9	...	...
Haiti	539	17.5	109	3.5	57	1.8	...	...
Honduras	...	...	...	...	...	...	...	...
Mexico	23 921	92.6	32 221	121.4	16 788	61.5	...	...
Nicaragua	31	2.9	465	42.6	683	60.5	1 002	86.0
Panama	1 221	163.2	468	61.0	1 074	136.8	929	115.6
Paraguay (a)	2 451	212.4	724	61.2	467	38.5	...	...
Peru (a)	10 709	317.8	8 921	254.7	6 699	196.3	e) 4 041	117.0
United States	319 124	211.0	530 118	345.6	683 077	438.5	...	...
Uruguay	6 183	257.9	1 441	59.1	1 452	58.5	3 651	144.7
Venezuela (a,c)	9 027	342.2	10 304	364.1	8 492	285.6	9 158	294.6
DEATHS								
Argentina	138	0.8	123	0.7	126	0.7	...	...
Bolivia	121	4.0	101	3.3	98	3.2	132	4.2
Brazil (d)	619	10.8	263	4.5	335	5.5	c) ...	...
Chile	96	1.7	117	2.0	c) 125	2.1	c) 469	7.8
Colombia	1 870	16.5	906	7.8	721	6.1	b) 1 843	15.2
Costa Rica	52	6.5	59	7.2	65	7.6	72	8.2
Cuba	...	...	...	...	...	...	...	...
Dominican Rep	8	0.4	35	1.6	28	1.2	...	...
Ecuador (f)	113	16.6	148	21.1	234	32.6	...	...
El Salvador	525	28.3	458	24.3	1 168	61.3	c) 225	11.7
Guatemala	2 170	77.4	784	27.2	2 457	82.6	...	...
Haiti	...	...	...	...	...	...	...	...
Honduras	326	22.8	386	26.3	440	29.1	...	...
Mexico	7 687	29.8	11 375	42.9	4 466	16.3	...	...
Nicaragua	62	5.9	174	15.9	354	31.4	128	11.0
Panama	112	15.0	76	9.9	...	...	...	...
Paraguay (a)	17	1.5	13	1.1	...	...	...	...
Peru	3 007	37.1	2 164	26.2	1 318	15.6	...	...
United States	468	0.3	683	0.4	g) 570	0.4	...	...
Uruguay	37	1.5	39	1.6	...	...	...	...
Venezuela (h)	440	8.8	369	7.2	351	6.7	315	5.9

(a) For reporting areas.
(b) Revised report.
(c) Provisional.
(d) Federal District and State Capitals, excluding city of Sao Paulo.
(e) Through November.
(f) Capital cities of provinces.
(g) Estimate based on 10-per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 22

NUMBER OF REPORTED CASES AND DEATHS OF MENINGOCOCCAL INFECTIONS WITH RATES PER 100,000 POPULATION IN 19 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	127	0.7	112	0.6	184	1.0	192	1.0
Bolivia (b)	43	1.9	18	0.7	10	0.4	c) 24	0.9
Brazil	...	...	...	...	...	...	...	...
Chile	124	2.1	106	1.8	d) 86	1.4	d) 95	1.6
Colombia (b)	512	6.5	352	4.2	423	5.7	691	7.0
Costa Rica	37	4.6	60	7.3	30	3.5	24	2.7
Cuba	25	0.5	13	0.2	9	0.2	...	...
Dominican Rep	...	...	...	...	...	...	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador	-	-	-	-	-	-	-	-
Guatemala	...	...	...	...	...	...	...	...
Haiti	...	...	...	...	...	...	...	...
Mexico	99	0.4	113	0.4	133	0.5	...	...
Panama	17	2.3	16	2.1	3	0.4	18	2.2
Paraguay (b)	10	0.1	200	1.7	...	...	...	...
Peru (b)	69	2.0	86	2.5	106	3.1	...	...
United States	3 788	2.5	4 164	2.7	4 884	3.1	...	...
Uruguay	9	0.4	9	0.4	9	0.4	7	0.3
Venezuela (b,d)	1	0.0	7	0.2	1	0.0	...	...
DEATHS								
Argentina	130	0.7	111	0.6	121	0.7	...	...
Bolivia	12	0.4	9	0.3	7	0.2	4	0.1
Brazil (e)	127	2.2	128	2.2	110	1.8	...	...
Chile	34	0.6	38	0.6	d) 40	0.7	d) 23	0.4
Colombia	...	...	...	...	...	...	c) 23	0.2
Costa Rica	...	...	...	...	2	0.2	4	0.5
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	6	0.3	4	0.2	2	0.1	...	...
Ecuador (f)	1	0.1	2	0.3	1	0.1	...	...
El Salvador	-	-	1	0.1	-	-	-	-
Guatemala	11	0.4	4	0.1	11	0.4	...	...
Haiti	...	...	1	0.0	...	...	...	...
Mexico	41	0.2	32	0.1	27	0.1	...	...
Panama	-	-	6	0.8	...	...	...	...
Paraguay (a)	1	0.1	19	1.6	...	...	...	...
Peru	24	0.3	6	0.1	21	0.2	...	...
United States	974	0.6	1 124	0.7	g) 1 450	0.9	...	...
Uruguay	7	0.3	6	0.2	...	...	...	...
Venezuela (h)	2	0.0	12	0.2	1	0.0	-	-

(a) A country reporting neither a case nor a death is excluded.
(b) For reporting areas.
(c) Revised report.
(d) Provisional.
(e) Federal District and State Capitals, excluding city of Sao Paulo.
(f) Capital cities of provinces.
(g) Estimate based on 10-per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 23

NUMBER OF REPORTED CASES AND DEATHS OF PLAGUE WITH RATES PER 100,000 POPULATION IN 8 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2	0.0	-	-	1	0.0	-	-
Bolivia	22	0.7	10	0.3	55	1.8	-	-
Brazil	55	0.1	20	0.0	65	0.1	10	0.0
Costa Rica	...	...	...	...	...	...	...	...
Ecuador	28	0.9	35	1.1	44	1.3	...	...
Peru	35	0.4	23	0.3	26	0.3	71	0.9
United States	3	0.0	1	0.0	-	-	...	...
Venezuela	5	0.1	8	0.2	-	-	1	0.0
DEATHS								
Argentina	2	0.0	-	-	1	0.0	...	...
Bolivia	10	0.3	6	0.2	8	0.3	-	-
Brazil	10	0.0	4	0.0	6	0.0	1	0.0
Costa Rica	1	0.1	-	-	-	-	-	-
Ecuador (b)	-	-	-	-	-	-	...	...
Peru	77	1.0	73	0.9	60	0.7	...	...
United States	1	0.0	-	-	-	-	...	...
Venezuela	1	0.0	3	0.0	-	-	-	-

(a) A country reporting neither a case nor a death is excluded.
(b) Capital cities of provinces.

TABLE 24
STATUS OF THE PLAGUE CONTROL PROGRAM
IN 9 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Special Service. Sporadic cases occur continuously, but there has been no epidemic during the last 7 years.
Brazil	The National Plague Service, under the National Department of Health, includes technical and administrative agencies operating at headquarters and in the field, namely, the Epidemiology Section, the Organization and Control Section, and the Administration Section. The program carried out by the districts includes treatment of human cases of plague, laboratory diagnosis activities, antirat and antiflea measures, and health education of the rural population. The work units, under the direction of a specialized physician, cover the entire endemic plague area, which comprises more than 200 municipalities together with the principal ports and cities in the south now free from plague. Field activities are concentrated in places where a case of plague occurs, intensive preventive action being extended to a distance of 6 kilometers. The highest incidence of plague occurred in the State of Alagoas, with Pernambuco and Bahia following next in importance. Cases of plague occurred in the State of Ceará in 1950 and 1951, whereas positive cases were reported in Paraíba only in 1950 and in the State of Rio de Janeiro, in 1952. Investigation work is the basic measure in the program of the Service. Such studies refer particularly to immunization, diagnosis and treatment methods, census of rodent fauna, susceptibility of rodents to plague, epidemiology of plague, and persistence of the virus in the vector organism in silent foci. (Condensed from the Report to the XIV PASC, pages 9 to 17.)
Cuba	The disease is not present in Cuba, but a permanent antirat service is maintained.
Ecuador	Program in full development.
Mexico	Examination for rodents at ports; boat fumigation and inspection certificates are issued.
Paraguay	Rat control is carried out by the Epidemiology Department. No cases of plague have been reported in over 30 years.
Peru	There is a routine program for the control of rats and fleas in all ports of the Coastal Region in Lima. A systematic campaign has been initiated in the northern frontier area, the most important focus in the country.
United States	No confirmed human cases occurred during 1953. Infections in animals and in fleas from animals were confirmed during the year.
Venezuela	Two antiplague units composed of 26 workers carry on permanent control work in the affected zone. Activities include classification, autopsy and examination of rodents, periodic DDT treatment of all houses, and rat poisoning based on the use of arsenic in forest areas and Warfarin in dwellings.

TABLE 25

NUMBER OF REPORTED CASES AND DEATHS OF SMALLPOX WITH RATES PER 100,000 POPULATION IN 16 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	4 462	25.9	1 186	6.7	967	5.3	267	1.5
Bolivia (b)	594	26.2	728	29.8	432	17.1	c) 429	16.5
Brazil (d)	749	9.5	1 202	14.7	1 649	19.5	350	4.7
Chile	3 564	61.6	44	0.8	9	0.2	22	0.4
Colombia	4 818	42.8	3 844	33.4	3 235	27.5	5 526	45.7
Ecuador	241	7.5	175	5.3	432	12.9	...	...
Guatemala	10	0.4	3	0.1	1	0.0	...	...
Haiti	...	...	...	...	...	...	...	...
Honduras	...	...	...	...	...	...	...	...
Mexico	762	3.0	27	0.1	-	-	...	...
Nicaragua	181	17.1	6	0.5	...	...	...	...
Panama	-	-	-	-	1	0.1	-	-
Peru (b)	3 612	107.2	1 218	34.8	1 360	39.8	e) 150	4.0
United States	39	0.0	11	0.0	21	0.0	...	...
Uruguay	3	0.1	-	-	16	0.6	7	0.3
Venezuela (f)	2 154	81.6	246	8.7	107	3.6	32	1.0
DEATHS								
Argentina	46	0.3	26	0.1	12	0.1	...	...
Bolivia	224	7.4	236	7.7	199	6.4	201	6.4
Brazil (d)	2	0.0	15	0.3	28	0.5	...	...
Chile	19	0.3	1	0.0	-	-	-	-
Colombia	180	1.6	218	1.9	242	2.0	c) 408	3.4
Ecuador (g)	5	0.7	1	0.1	1	0.1	...	...
Guatemala	11	0.4	9	0.3	9	0.3	...	...
Haiti	4	0.1	...	...	...	...	...	...
Honduras	20	1.4	34	2.3	23	1.5	...	...
Mexico	153	0.6	54	0.2	31	0.1	...	...
Nicaragua	5	0.5	-	-	-	-	-	-
Panama	-	-	-	-	...	...	...	...
Peru	3 815	47.1	1 421	17.2	1 079	12.7	...	...
United States	1	0.0	1	0.0	-	-	...	...
Uruguay	1	0.0	-	-	...	...	...	...
Venezuela	27	0.5	5	0.1	4	0.1	-	-

(a) A country reporting neither a case nor a death is excluded.
(b) For reporting areas.
(c) Revised report.
(d) Federal District and State Capitals, excluding city of Sao Paulo.
(e) Through November.
(f) For reporting area, provisional.
(g) Capital cities of provinces.

TABLE 26
STATUS OF THE SMALLPOX CONTROL PROGRAM IN 16 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	The nation-wide systematic vaccination program was initiated in September 1953. As of February 1954, 85,175 persons had been vaccinated.
Brazil	The National Department of Health, through its Division of Public Health Organization, is responsible for smallpox control. During the period 1950-1953, some 3 million doses of antismallpox vaccine lymph prepared by the Oswaldo Cruz Institute were distributed to the state health services. The Division, during its 1951 activities, ascertained that of the 16,000 adults vaccinated for the first time against smallpox, 80% showed positive results and of the 6,000 who were revaccinated, 3% were positive.
Chile	In view of the existence of endemic smallpox in neighboring countries and the outbreaks that occurred in 1950, and following the recommendations of the XIII Pan American Sanitary Conference (Resolution XIX), a systematic vaccination program has been pursued with the aim of covering 80% of the country's inhabitants. The campaign for control of the 1950 benign smallpox epidemic made it possible to vaccinate almost the entire population of the country. In effect, from March to August 1950, 5,800,000 inhabitants of the country were vaccinated. When the epidemic was stamped out, activities returned to the level of 87,000 persons vaccinated for the first time and 711,000 revaccinated in 1953. The Sanitary Agreement between Chile, Peru, and Bolivia has contributed much toward the development of vaccination programs in the highlands of Chile. In the past few years, dry vaccine prepared by the Bacteriological Institute of Chile has been used in rural areas.
Colombia	Local vaccinations are applied by public health agencies. Cases are isolated. Vaccination is compulsory by law.
Costa Rica	Permanent vaccination program.
Cuba	Notifiable disease. Antismallpox vaccination is compulsory.
Dominican Republic	No cases have occurred in several decades. Vaccine is applied periodically in schools and the Health Offices in the provinces, especially in the District Public Health Service and in those areas in which air and sea ports are located. A mass campaign against the disease is now underway and, according to tentative estimates, it is planned to vaccinate from 250,000 to 300,000 persons this year.
Ecuador	A mass vaccination program was initiated this year with a view to eradicating smallpox from the country. A special control department was established.
El Salvador	Routine vaccination. No cases of the disease have been recorded for over 20 years.

TABLE 26
STATUS OF THE SMALLPOX CONTROL PROGRAM IN 16 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Mexico	Since smallpox has practically been eradicated in Mexico, activities are being concentrated on the search for suspected cases (especially patients with chickenpox or varioloid) so as to establish precise diagnoses. Although there are no smallpox cases, antismallpox vaccinations are continued systematically throughout the country and, in 1954, it is planned to vaccinate one and one-half million persons in 14 political divisions of the Republic.
Panama	A mass vaccination program will be initiated this year to cover all inhabitants of the rural areas.
Paraguay	No cases of smallpox have occurred in almost 10 years. Control work is conducted by the Epidemiology Department through systematic vaccination of the population.
Peru	There has been a systematic, nation-wide vaccination campaign since 1950. Forty-five percent of the inhabitants have already been vaccinated. The work is being pursued.
United States	Twenty-seven (27) cases of smallpox or suspected smallpox were reported to the National Office of Vital Statistics during 1953. Twelve of these were from Nebraska. However, by the end of the year, all but five cases had been deducted because of a change in diagnosis. The five cases were from Texas, Wyoming, Kansas, North Carolina, and Nebraska. In three of these cases the diagnosis was not supported by clinical and epidemiological findings.
Uruguay	All smallpox outbreaks have originated abroad. Under a law of 25 September 1911, vaccination is compulsory. This law, now out-dated, is to be modified by a bill at present before the Chamber of Representatives, for approval within a short time. An Executive Decree of October 1953 provides for mass vaccination, which will cover 90% of the Republic's inhabitants. During last December and January, 378,250 persons were vaccinated. Nationally valid certificates are issued by the Ministry of Public Health, the Military Health Service, municipal authorities, the School Health Services, and other authorized agencies, all with the authorization of the Public Health Ministry. International certificates are issued only by the Public Health Ministry. These are valid for 3 years in the case of positive reaction, in conformity with International Sanitary Regulation No. 2.
Venezuela	In addition to routine vaccinations and control of cases and contacts, a nation-wide mass vaccination program, carried out in 4-year cycles, has been in progress since 1949.

TABLE 27

NUMBER OF REPORTED CASES AND DEATHS OF SYPHILIS WITH RATES PER 100,000 POPULATION IN 20 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	10 935	64.0	9 900	56.0	9 415	52.0	8 778	47.8
Bolivia (b)	2 786	123.0	2 740	112.1	2 128	84.0	c) 3 876	149.3
Brazil	...	...	...	...	...	...	...	...
Chile	...	...	...	...	...	...	...	...
Colombia (b)	27 001	343.8	20 359	243.9	15 981	217.1	23 975	244.1
Costa Rica	1 030	128.6	583	70.7	650	76.2	824	93.5
Dominican Rep.	7 182	337.0	8 227	376.9	901	40.3	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (b)	14 088	1 896.1	11 186	1 293.2	8 808	955.3	d) 7 479	842.2
Guatemala	2 148	76.6	2 706	93.7	2 143	72.0	...	...
Haiti	103 060	3 346.1	92 356	2 944.1	90 471	2 827.2	...	...
Honduras	...	...	4 459	303.3	3 603	238.2	...	...
Mexico	29 178	113.0	24 117	90.9	22 829	83.7	...	...
Nicaragua	2 883	272.1	2 206	201.9	2 044	181.1	2 466	211.6
Panama	4 978	665.3	1 390	181.3	1 151	146.5	1 150	143.1
Paraguay (b)	7 657	663.5	6 344	536.3	5 492	452.8	...	...
Peru (b)	5 654	167.8	6 619	189.0	5 698	166.9	e) 4 636	134.0
United States	217 558	143.9	174 924	114.0	165 853	106.5	...	...
Uruguay	1 280	53.4	836	34.3	537	21.6	335	13.3
Venezuela (b, d)	25 245	956.9	24 847	878.0	22 183	746.0	20 608	662.8
DEATHS								
Argentina	719	4.2	687	4.0	541	3.0	...	...
Bolivia	236	7.8	180	5.9	279	9.0	324	10.4
Brazil (f)	2 453	42.8	2 206	37.4	2 083	34.4	...	...
Chile	363	6.3	303	5.2	d) 269	4.5	d) 193	3.2
Colombia	566	5.0	518	4.5	465	3.9	c) 847	7.0
Costa Rica	48	6.0	54	6.5	79	9.3	68	7.7
Dominican Rep.	145	6.8	210	9.7	169	7.6	...	...
Ecuador (g)	80	11.7	44	6.3	78	11.0	...	...
El Salvador	308	16.6	277	14.7	229	12.0	d) 190	9.8
Guatemala	50	1.8	24	0.8	26	0.9	...	...
Haiti	53	1.7	34	1.1	47	1.5	...	...
Honduras	18	1.3	17	1.2	20	1.3	...	...
Mexico	1 897	7.3	1 624	6.1	1 511	5.5	...	...
Nicaragua	8	0.8	3	0.3	2	0.2	1	0.1
Panama	19	2.5	13	1.7	...	...	...	...
Paraguay (b)	280	24.3	277	23.4	...	...	...	...
Peru	165	2.0	208	2.5	174	2.0	...	...
United States	7 568	5.0	6 274	4.1	h) 5 700	3.7	...	...
Uruguay	322	13.4	280	11.5	...	...	...	...
Venezuela (i)	1 424	28.6	1 194	23.3	962	18.3	752	14.0

(a) A country reporting neither a case nor a death is excluded.
(b) For reporting area.
(c) Revised report.
(d) Provisional.
(e) Through November.
(f) Federal District and State Capitals, excluding city of Sao Paulo.
(g) Capital cities of provinces.
(h) Estimate based on 10-per cent sample of death certificates.
(i) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 28
STATUS OF THE VENEREAL DISEASE CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Special service. No systematic campaign has yet been undertaken. Reorganization was begun a few months ago.
Brazil	The campaign against venereal diseases is carried out by the National Department of Health, through its Division of Public Health Organization. In 1953, the Division had 42 dispensaries in the state capitals and 71 in cities of the interior, together with 28 rapid-treatment centers and four posts for individual prophylaxis. The campaign is carried out on the basis of cooperation between the Federal and the State Governments and other agencies engaged in combatting venereal diseases. At the dispensaries, 506,000 persons underwent first examinations, with 117,000 found positive, of which 41% suffered from syphilis, 42% from gonorrhea, and 17% from other venereal diseases. Dispensary personnel made more than three and one-half million visits and one million laboratory examinations. Some 13,000 cases were hospitalized at the rapid-treatment centers.
Chile	Venereal diseases continue to become less important, both clinically and epidemiologically, owing to effective therapy and the campaigns carried out in the past few years. In these programs special emphasis has been laid on such techniques as contact investigation and treatment, control of high morbidity groups, and serological census of the population. At present, venereal diseases play only a limited role in causes of death. In spite of the fact that the incidence of gonorrhea is not very much lower than it was some years ago, a situation due in part to reinfections, its prevalence is considerably lower because of its short duration.
Colombia	Some case control by public health agencies. Treatment. Prevention and educational activities.
Costa Rica	Through serological surveys, together with health education and publicity, the campaign in areas of high incidence is being intensified with excellent results.
Cuba	This disease is not notifiable in Cuba. A special Fund is concerned with this disease.
Dominican Republic	Control procedure: treatment of cases and contacts at dispensaries; serological control of cases and contacts; serological control of pregnant women; prophylactic treatment of prostitutes.
Ecuador	Demonstration program at Portoviejo, Manta, and Bahía, using penicillin. Prophylactic control at all provincial capitals. A special department has been established in Guayaquil to carry out an expanded program based on treatment with penicillin and search for contacts.
El Salvador	There are 48 antivenereal treatment centers in the country. Sufficient quantities of antibiotics are available to maintain the campaigns.

TABLE 28

STATUS OF THE VENEREAL DISEASE CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Haiti	A Venereal Disease Control Section was established in July 1952.
Mexico	Country-wide treatment with penicillin for syphilis and gonorrhea and sulfonamides principally for soft chancre and Nicolas-Favre disease. Sufficient drugs are available for the treatment of patients at the services of the Ministry. In certain localities, some patients contribute voluntarily toward the cost of the penicillin. Case detection, a measure considered to be of basic importance at present, is being intensified. Short courses on the present status of prevention, diagnosis, and treatment are given to large groups of physicians and midwives in different parts of the country, with a view to obtaining the collaboration of such professionals. Wherever regulated prostitution exists, prostitutes are treated with weekly injections of procaine penicillin with aluminum monostearate. Laboratory techniques are being standardized, through the use of cardiolipin in making serological tests.
Nicaragua	Case reporting is done by the Public Health Centers. Private physicians do not cooperate in this program.
Panama	Program is being conducted, principally in the cities of Panama, Colon and Armuelles.
Paraguay	The disease is an important public health problem. An intensive venereal-disease control and treatment campaign is being conducted by the Health Centers.
Peru	The Venereology Department was reorganized in 1952 and at present modern control procedures are being employed.
United States	Progress in venereal disease control is evidenced in the downward trends in general mortality from syphilis, infant mortality from this disease, and first admissions to mental hospitals with psychoses due to syphilis.
Uruguay	As the result of public information programs, the use of antibiotics in all of the nation's dispensaries, and the intensive work of the Department of Welfare and Venereal Disease Prophylaxis, the number of cases reported by the various services continued to decrease, dropping from 2,836 in 1947 to 494 in 1953. Of this last number, 384 were in the capital and 110 in rural areas. Of the more than 30,000 persons appearing for consultation per year, one-third were in the capital and the remainder in rural areas. Twice a week prostitutes undergo medical treatment at the Public Health Service for Sexual Hygiene, and those who have no syphilis background report every three weeks for blood tests. Incidence of infection dropped from 29.0% in 1950 to 1.5% in 1953. Under existing legislation, venereal-disease patients continue to undergo compulsory treatment during the contagious period. Measures were taken to guarantee a sufficient supply of penicillin and other antisyphilis products in all dispensaries in the country, through constant replenishment of stock.

TABLE 28

STATUS OF THE VENEREAL DISEASE CONTROL PROGRAM IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Uruguay (Continued)	Antivenereal disease campaigns, carried directly to the public and to the schools, included meetings, radio programs, interviews, distribution of pamphlets, etc., and ended each year with an "Antivenereal Disease Week." (Condensed from the Report to the XIV PASC, pages 9 to 16).
Venezuela	Two hundred and twenty-one (221) Antivenereal Disease Dispensaries, 148 of which are in rural areas, carry on case detection and free treatment, in connection with programs of the Health Units, Health Centers, and Rural Medication Stations.

TABLE 29

NUMBER OF REPORTED CASES AND DEATHS OF TUBERCULOSIS WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	9 725	56.5	9 835	55.8	12 850	71.1	10 521	57.2
Bolivia (a)	3 166	139.8	3 608	147.7	3 940	155.5	b) 4 894	188.5
Brazil (c)	19 105	333.5	12 473	361.0	11 713	329.0	3 865	158.7
Chile	...	...	...	...	...	...	...	...
Colombia (a)	11 137	141.8	10 123	121.3	9 401	127.7	13 599	138.5
Costa Rica	631	78.8	693	84.0	749	87.7	622	70.6
Cuba	1 102	21.0	1 337	25.1	1 569	29.1	...	...
Dominican Rep	1 730	81.2	1 856	85.0	780	34.9	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	2 506	337.3	3 474	401.6	3 319	360.0	d) 2 410	271.4
Guatemala	2 633	93.9	2 901	100.5	3 195	107.4	...	...
Haiti	1 848	60.0	1 105	35.2	2 330	72.8	...	...
Honduras	...	...	843	57.3	678	44.8	...	...
Mexico	7 354	28.5	8 103	30.5	7 456	27.3	...	...
Nicaragua	967	91.3	845	77.3	1 052	93.2	1 347	115.6
Panama	1 748	233.6	1 421	185.3	1 340	170.6	1 139	141.7
Paraguay (a)	1 243	107.7	1 190	100.6	1 197	98.7	...	...
Peru (a)	15 496	459.8	19 640	560.8	17 919	525.0	e) 16 386	474.0
United States	121 742	80.5	118 491	77.3	109 837	70.5	...	...
Uruguay	2 238	93.3	2 173	89.1	1 562	63.0	1 439	57.0
Venezuela (a,d)	9 824	372.4	9 120	322.3	9 607	323.1	8 493	273.2
DEATHS								
Argentina	8 942	52.0	8 470	48.0	7 943	44.0	...	...
Bolivia	1 430	47.4	998	32.7	1 651	53.4	1 028	32.9
Brazil (c)	12 461	217.6	12 305	208.7	9 402	155.1	...	...
Chile	9 282	160.4	8 755	149.3	d) 6 564	110.4	d) 5 239	87.0
Colombia	4 107	36.2	4 202	36.3	3 652	30.8	b) 3 579	29.6
Costa Rica	412	51.4	417	50.5	340	39.8	224	25.4
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	1 341	62.9	1 265	57.9	1 380	61.7	...	...
Ecuador (f)	1 379	202.6	1 189	170.0	1 096	153.0	...	...
El Salvador	722	38.9	690	36.7	648	34.0	d) 583	30.2
Guatemala	1 540	54.9	1 460	50.6	1 520	51.1	...	...
Haiti	181	5.9	279	8.9	230	7.2	...	...
Honduras	292	20.4	326	22.2	354	23.4	...	...
Mexico	10 588	41.0	11 201	42.2	9 993	36.6	...	...
Nicaragua	221	20.9	158	14.5	154	13.6	105	9.0
Panama	577	77.1	464	60.5	...	...	...	...
Paraguay (a)	394	34.1	391	33.1	...	...	...	...
Peru	6 271	77.4	6 993	84.6	5 896	70.0	...	...
United States	33 959	22.5	30 863	20.1	g)25 080	16.1	...	...
Uruguay	1 489	62.1	1 299	53.3	...	...	...	...
Venezuela (h)	6 121	122.9	5 999	117.3	5 883	112.2	4 865	90.5

(a) For reporting areas.
(b) Revised report.
(c) Federal District and State Capitals, excluding city of Sao Paulo.
(d) Provisional.
(e) Through November.
(f) Capital cities of provinces.
(g) Estimate based on a 10-per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 30
STATUS OF THE TUBERCULOSIS CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Special services. There are only 567 beds for patients while there are approximately 3,000 deaths annually. Very few patients are under surveillance and treatment. Owing to the lack of visiting nurses, family health education is at a minimum. There is one BCG laboratory. Up to the present, about 7,000 children have been vaccinated.
Brazil	The National Tuberculosis Service, National Department of Health, is the specialized agency responsible for the antituberculosis program and for the National Antituberculosis Campaign. The laboratory of the Ataulfo de Paiva Foundation produces the BCG vaccine in Brazil. In 1950, 719,000 doses of vaccines of various types were distributed; the supply service distributed in 1953 more than three and one-half million doses to the Brazilian states, to the Republic of Argentina, and to private individuals. The Oswaldo Cruz Institute is the center for experimental studies. The National Tuberculosis Service, which formerly constructed hospitals and sanatoria for management by states or private institutions, since 1952 has been responsible for the up-keep of the institutions constructed, among which are six large groups of sanatoria operating in Curicica, Campos, Taracanaú, Aracajú, Manáus, and Mossoró. The specialization courses offered to medical professionals at first lasted 6 months, but have now been extended to 18 months. In 1953, 31 physicians completed the course, with 43 and 50 additional physicians attending the two study groups now being held. Courses are also offered for nurses and auxiliary personnel. The number of available beds for tuberculosis patients increased in the last 4-year period from 15,837 to 19,773, and about an equal number of beds are in more or less advanced stages of completion. Chest X-ray survey was given due attention by the Service's stationary and mobile units and by agencies affiliated with the Service through conventions or agreements.
Chile	An annual average of one hundred thousand radiological examinations are made among well persons and suspect cases, with a prevalence of 3.5% recorded. The examinations are made by stationary and mobile teams. Also, diagnoses are made in the diagnostic and treatment clinics. There are 24 clinics for out-patient and dispensary treatment throughout the country. For hospitalization, there are 5,350 beds available exclusively for tuberculosis patients. Up to May 1951, 158,639 non-reactors had been vaccinated with BCG. Since that time, an intensive coordinated vaccination program has been undertaken in the urban areas of the country. In 1952, 588,583 persons were vaccinated, representing 62.73% of the estimated total of non-reactors in those areas. During 1953, 120,000 non-reactors were protected. As to economic security, existing legislation grants to workers with tuberculosis approximately 80% of their salary. Varying security is provided to persons incapacitated by the disease, according to the amount and total time of their contributions. No rehabilitation program is undertaken.

TABLE 30
STATUS OF THE TUBERCULOSIS CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Chile (Continued)	Research on the problem of tuberculosis is conducted in local programs and by some hospital establishments. Until mid-1953, the program was administered by several medical care institutions. Insofar as results are concerned, there are no adequate means of evaluation.
Colombia	Case detection is carried out by the local epidemiological centers. Care service is provided in dispensaries and sanatoria.
Costa Rica	Using stationary and mobile units, programs for X-ray examination of apparently healthy groups and mass vaccinations with BCG are being increasingly intensified. A reorganization plan was carried out to provide a larger number of beds and better hospital care for patients.
Cuba	Notifiable disease. There is a National Tuberculosis Council specifically charged with the control of this disease.
Dominican Republic	The following procedures are used in the control program: tuberculin test (children and adults); BCG vaccination (negative tuberculin); fluoroscopic and radiologic examination (adolescents and adults); outpatient treatment; hospitalization of patients in specialized hospitals (500 beds).
Ecuador	Care work is entrusted to the Ecuadorian Antituberculosis League, which is maintained by national tax funds and others. Preventive work was started in 1950 with the Mass Vaccination Program of the entire non-reactor population, and the National Antituberculosis Service is now carrying out a nation-wide control program.
El Salvador	Seven diagnostic centers were established in the country, and 16 treatment centers (7 hospitals, 8 dispensaries, and 1 sanatorium) are in operation. The number of TB-patient beds increased from 300 to 700 in the last four-year period. A nation-wide BCG vaccination campaign was completed, and two new hospitals for TB patients will be in operation by the beginning of 1954.
Haiti	A BCG program was initiated about two years ago. More than 15,000 children have been vaccinated.
Mexico	Through its operating program, the National Antituberculosis Campaign is endeavoring to increase the number of beds for tuberculosis patients, and within three months will make available 200 beds in the Federal District and 100 beds in the City of Tampico, Tamps. One or various hospitals are planned for the northern part of the country, their capacity to be in accordance with existing conditions. A new dispensary was constructed, equipped, and put into operation in the State of Querétaro and two more will be constructed this year. Three others already constructed will also be equipped and put into operation. Steps were taken to make available to tuberculosis patients, especially the indigent ones, treatments with antibiotics which have proven effective. Sufficient amounts of the antibiotics are being provided for free

TABLE 30
STATUS OF THE TUBERCULOSIS CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Mexico (Continued)	distribution to the important centers of the country. In addition, arrangements are being made to sell antibiotics at cost price to persons of modest means, the actual cost to them being estimated at one half the commercial price. Through its technical office ("Oficina de Dirección Técnica"), the Campaign is continuing to coordinate activities throughout the Republic. Fluorographic work among apparently healthy groups is being intensified in order to increase the work of case detection to a maximum. Some pamphlets on tuberculosis were issued for health education of the public. In cooperation with the Ministry of Public Education, it is planned to establish a Model Dispensary this year for service exclusively to school children. BCG vaccination work, on a strictly voluntary basis, is continuing among community groups.
Nicaragua	Case reporting is done by the Health Centers. Private physicians do not cooperate in this program.
Panama	The Antituberculosis Campaign is now being reorganized.
Paraguay	Tuberculosis is an important public health problem. A campaign is under way with the support of twelve dispensaries and one hospitalization sanatorium, and an intensive BCG vaccination program is to be initiated next year.
Peru	The control program being pursued by the Tuberculosis Division includes: preventive measures (photoradiologic examinations in supposedly healthy groups and BCG vaccinations against tuberculosis), care service, establishment throughout the country of dispensaries, tuberculosis wards annexed to general hospitals, and hospital-sanatoria of the regional type.
United States	Progress in tuberculosis control continued as evidenced by a downward trend in new cases of the disease reported, as well as by a continued decline in mortality from the disease. In 1949 a total of 134,000 new cases and 39,000 deaths were reported, whereas in 1953 preliminary data indicate that about 105,000 new cases were reported and 20,000 deaths occurred.
Uruguay	The Honorary Committee for the Antituberculosis Campaign has been active since 1940. This Committee is composed of prominent men of science, commerce, and industry, and combines the efforts of various public and private institutions. With full autonomy and its own resources, the Committee has cooperated with the Phthisiology Institute, the National Committee on Physical Education, and the Inter-American Cooperative Public Health Service. In the period 1950 to 1953, its principal field of activities was as follows. In 1950, the mobile dispensaries completed 520,973 examinations and 199,958 BCG vaccinations in the interior of the country. The bacillus-type lesions, the majority of which had been unknown, were recorded in 5,182 cases. In addition, 250,000 persons were examined in Montevideo. In 1951, a survey was made of the inhabitants of the coastal and interior Departments and of Montevideo. In

TABLE 30
STATUS OF THE TUBERCULOSIS CONTROL PROGRAM
IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Uruguay (Continued)	1952, mass radiographic examinations were carried out on a large scale. In 1953, the second Roentgen-tuberculin survey was made in various Departments, public and private school students in San José were examined, a second examination of the inhabitants of Montevideo was made, and the second investigation of the inhabitants of the entire interior was successfully carried out, with 543,410 persons examined and 195,779 vaccinated with BCG. Presumably bacillus-type lesions were found in 3,029 new cases. During 1950, 23,561 pensions were paid. In 1951 and 1952, pension payments reached 23,935 and 25,203 persons, respectively. In 1953, 16,720 pensions were paid in Montevideo, and 12,926 in the interior, making a monthly average of 2,400 payments. The Honorary Committee, in addition, is authorized to restore or repair dwellings used to house tuberculosis patients who are under care; to acquire and equip ambulances, mobile dispensaries; to construct and equip hospitals, sanatoria, etc. The Committee also carried out profitable health education work. The funds of the Honorary Committee, provided by the law that established it, amounted to 6 million Uruguayan pesos in 1950 and to more than 9 millions in March 1954. In April 1954, the IV Uruguayan Tuberculosis Congress was held in Montevideo, with the attendance of eminent tuberculosis specialists from the Americas and from Europe. At that meeting was originated the idea of having other countries of the Americas send fellowship students for on-the-spot study of the techniques applied by the Honorary Committee in the antituberculosis campaign. (Condensed from the Report to the XIV PASC, pages 5 to 8).
Venezuela	In Venezuela 25 Antituberculosis Dispensaries, operating in first-category Health Units, make up the "Primary Chain" in the antituberculosis campaign; 19 of these have 70 mm. fluorophotograph equipment. In the second-category Health Units and in Health Centers, 40 Public Health Phthisiology services (radiological diagnosis, prophylaxis, and BCG vaccination) make up the "Secondary Chain". One hundred and thirty-nine (139) Rural Medication Clinics are connected with services of the Primary and Secondary Chains in a minimal plan of radiological examinations for special groups, home prophylaxis, and BCG vaccination. This is called the "Tertiary Chain". Out-patient treatment with the use of new antibiotic and chemotherapeutic agents was applied partially in the Primary and Secondary Chain services, under the direction of a tuberculosis specialist. There are now in service 2,284 beds in 13 Antituberculosis Sanatoria, which operate directly under the Antituberculosis Organization. BCG vaccinations are applied first as an intensive campaign carried out by special teams composed of one physician and one nurse. This campaign serves to train the local staff of the public health services, who are entrusted thereafter with the routine application of vaccine in maternity hospitals, maternal and child health services, school health services and antituberculosis services (dispensaries, public health tuberculosis services, and the rural medication clinics of the Tertiary Chain.)

TABLE 31

NUMBER OF REPORTED CASES AND DEATHS OF TYPHOID FEVER WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	985	5.7	1 226	6.9	2 632	14.6	2 031	11.0
Bolivia (a)	599	26.5	486	19.9	520	20.5	b) 879	33.9
Brazil (c)	2 051	25.9	1 947	23.8	1 716	20.3	788	10.6
Chile	3 569	61.7	5 298	90.3	d) 5 057	85.1	d) 3 496	58.0
Colombia (a)	7 633	97.2	7 361	88.2	6 876	93.4	9 302	94.7
Costa Rica	154	19.2	163	19.8	68	8.0	164	18.6
Cuba (e)	762	14.5	563	10.6	676	12.5	...	...
Dominican Rep.	444	20.8	483	22.1	470	21.0	...	...
Ecuador (f)	2 000	293.8	1 460	208.6	1 584	220.9	...	...
El Salvador (a)	376	50.6	496	57.3	665	72.1	d) 533	60.0
Guatemala	651	23.2	826	28.6	1 042	35.0	...	...
Haiti	179	5.8	139	4.4	302	9.4	...	...
Honduras	...	...	141	9.6	145	9.6	...	...
Mexico	5 992	23.2	5 901	22.2	5 334	19.6	...	...
Nicaragua	219	20.7	232	21.2	394	35.0	637	54.7
Panama	42	5.6	41	5.3	38	4.8	47	5.8
Paraguay (a)	96	8.3	94	8.0	135	11.1	...	...
Peru (a)	2 551	75.7	3 290	93.9	3 574	104.7	g) 3 871	112.0
United States	2 484	1.6	2 128	1.4	2 341	1.5	...	...
Uruguay	598	24.9	618	25.3	726	29.3	620	24.6
Venezuela (a,d,e)	1 510	57.2	978	34.6	1 087	36.6	1 007	32.4
DEATHS								
Argentina	309	1.8	265	1.5	234	1.3	...	...
Bolivia	76	2.5	80	2.6	121	3.9	98	3.1
Brazil (c)	316	5.5	252	4.3	235	3.9	...	...
Chile	432	7.5	349	5.9	d) 217	3.6	d) 216	...
Colombia (e)	1 395	12.3	1 183	10.2	1 033	8.7	b) 830	6.9
Costa Rica	23	2.9	15	1.8	17	2.0	23	2.6
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	333	15.7	380	17.5	389	17.4	...	...
Ecuador (f)	147	21.6	187	26.7	141	19.6	...	...
El Salvador	62	3.3	68	3.6	71	3.7	d) 65	3.4
Guatemala	222	7.9	209	7.2	270	9.1	...	...
Haiti	49	1.6	31	1.0	40	1.3	...	...
Honduras	156	10.9	133	9.0	105	6.9	...	...
Mexico	3 967	15.3	4 337	16.3	3 968	14.5	...	...
Nicaragua	152	14.3	142	13.0	111	9.8	98	8.4
Panama	3	0.4	5	0.6	...	...	...	...
Paraguay (a)	16	1.4	13	1.1	...	...	...	...
Peru	792	9.8	813	9.8	844	10.0	...	...
United States	96	0.1	83	0.1	h) 60	0.0	...	...
Uruguay	73	3.0	46	1.9	...	...	...	...
Venezuela (e,i)	368	7.4	213	4.2	221	4.2	198	3.7

(a) For reporting areas.
(b) Revised report.
(c) Federal District and State Capitals, excluding city of Sao Paulo.
(d) Provisional.
(e) Including paratyphoid fever.
(f) Capital cities of provinces.
(g) Through November.
(h) Estimate based on 10-per cent sample of death certificates.
(i) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 32

NUMBER OF REPORTED CASES AND DEATHS OF TYPHUS WITH RATES PER 100,000 POPULATION IN 17 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2	0.0	4	0.0	3	0.0	8	0.0
Bolivia (b)	218	9.6	99	4.1	85	3.4	c) 409	15.8
Brazil (d)	22	0.3	8	0.1	12	0.1	5	0.5
Chile	473	8.2	593	10.1	f) 266	4.5	f) 165	2.7
Colombia (b)	2 691	34.3	1 844	22.1	c) 1 998	27.1	1 872	19.1
Costa Rica	30	3.7	31	3.8	14	1.6	e) 13	1.5
Cuba (e)	...	...	4	0.1	...	...	...	...
Dominican Rep.	1	0.0	-	-	...	...	...	...
Ecuador	407	12.7	747	22.6	551	16.4	...	...
El Salvador (b)	23	3.1	22	2.5	29	3.1	f) 52	5.9
Guatemala	33	1.2	38	1.3	17	0.6	...	...
Mexico	1 223	4.7	1 115	4.2	1 018	3.7	...	...
Panama	-	-	4	0.5	2	0.2	-	-
Paraguay (b)	15	1.3	25	2.1	...	...	...	...
Peru (b)	1 490	44.2	948	27.1	972	28.5	g) 346	10.0
United States	...	...	...	...	...	...	...	...
Venezuela (b,f)	176	6.7	84	3.0	66	2.2	49	1.6
DEATHS								
Argentina	10	0.1	3	0.0	1	0.0	...	...
Bolivia	58	1.9	56	1.8	39	1.3	25	0.8
Brazil (d)	3	0.1	1	0.0	1	0.0	...	...
Chile	35	0.6	25	0.4	f) 8	0.1	f) 20	0.3
Colombia	644	5.7	663	5.7	653	5.5	c) 743	6.1
Costa Rica	1	0.1	4	0.5	2	0.2	-	-
Cuba	...	...	...	...	...	...	...	...
Dominican Rep	-	-	-	-	-	-	...	...
Ecuador (h)	31	4.5	33	4.7	38	5.3	...	...
El Salvador	6	0.3	-	-	1	0.1	f) -	-
Guatemala	13	0.5	21	0.7	18	0.6	...	...
Mexico	723	2.8	738	2.8	655	2.3	...	...
Panama	-	-	1	0.1	...	...	...	...
Paraguay (b)	4	0.4	8	0.7	...	...	...	...
Peru	1 454	17.9	1 390	16.8	953	11.3	...	...
United States	46	0.0	44	0.0	-	...	...	...
Venezuela (i)	27	0.5	6	0.1	9	0.2	12	0.2

(a) A country reporting neither a case nor a death is excluded.
(b) For reporting area.
(c) Revised report.
(d) Federal District and State Capitals, excluding city of Sao Paulo.
(e) Murine typhus only.
(f) Provisional.
(g) Through November.
(h) Capital cities of provinces.
(i) Ill-defined caused of death proportionally distributed to defined causes.

TABLE 33

STATUS OF THE TYPHUS CONTROL PROGRAM IN 15 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Special Service. Frequent sporadic cases, but without serious epidemic during the last 5 years.
Brazil	The campaign against diseases of the typhus-dysentery group was carried out by the Division of Public Health Organization of the National Department of Health. The main objectives of the campaign were: epidemiological control, demonstration of modern preventive methods, use of water-chlorination facilities, sanitary constructions, regional laboratories, and systematic immunization. The Division has developed a cooperative program with the States and other official or private units. (Condensed from the Report to the XIV PASC, pages 18-19.)
Chile	Chilean statistical data deal with the two forms of typhus jointly: exantematic and murine, for which the general morbidity and mortality indices are low. The typing done in large urban centers indicates that the confirmed cases are due to murine typhus. Exantematic typhus persists endemically and with very low incidence in some rural areas in the southern part of the country, especially among the Indian population. On the other hand, pediculous infestation is high in both urban and suburban areas of the country and among poorer groups in large cities. Hence, intensive mass disinsectization programs have been carried out among large segments of the population, especially in poor districts, in Indian settlements, and in centers housing people infested with parasites. These programs are carried out particularly in the Provinces of Tarapaca, Antofagasta, Santiago, Malleco, Arauco, Cautin, Valdivia, Osorno, Llanquihue, and Chiloe. The disinsectization program has been intensified year by year. In 1953, 758,000 persons, 419,000 dwellings and a large number of beds and clothing were disinsected. In several of the nation's ports, especially in the Provinces of Tarapacá and Antofagasta, rat-extermination programs, employing Warfarin, resulted in a noticeable decrease in the number of murine typhus cases.
Colombia	Local control of cases by public health agencies. DDT applications.
Costa Rica	This disease rarely occurs in Costa Rica.
Cuba	Notifiable disease. Some cases of murine typhus. Classic control measures.
Dominican Rep.	The disease presents no problem, as no cases have been reported in several decades.
Ecuador	Lice-control program among the Indian population. This phase is completed.
El Salvador	Five or six scattered cases of murine typhus occur each year throughout the country.

TABLE 33
STATUS OF THE TYPHUS CONTROL PROGRAM IN 15 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Mexico	Determination of parasite indices for Pediculus humanus var. corporis and capitis in rural and urban populations where the disease is endemic. Eradication of epidemic typhus in the sector by nation-wide use of various residual insecticides, especially in rural environments, basic importance being given to changes in noxious habits and to facilities for washing clothes and bathing. Training of bilingual and regular personnel. Intensive publicity and health education activities. Utilization of products (10% DDT powder, brilliantine, and soap) of various low-cost residual insecticides, to encourage use by persons in low-income brackets. Confirmation and control activities in the event of typhus cases or outbreaks. Field and laboratory experimental work, especially with respect to the possible appearance of resistant strains. Murine typhus: Locating infected localities by means of complement fixation tests of cases in humans and in rats. Promoting the application of rat-proofing in new constructions and in the remodelling of buildings. Use of modern residual-type raticides and antiflea insecticides. Spotted fever: Elimination of ticks through treatment of houses and domestic animals with residual insecticides. Intensification of education programs in areas infected with Ripicephalus sanguineus, with information to the public on the danger of having unclean dogs and poorly kept homes, and of the role played by the tick in the transmission of the disease. Use of specific vaccine; study of other possible vectors.
Panama	Murine typhus occurs occasionally. Measures are taken as the need arises.
Paraguay	The disease is practically non-existent.
Peru	Control program through mass delousing work in certain areas of the country. Experimental vaccination with Strain E avirulent Rickettsia prowazeki.
United States	Two hundred twenty-seven (227) cases of murine typhus were reported during 1953, an increase of 22% over 1952. This represents the first year since 1945 when the reported incidence of this disease has not diminished.
Venezuela	Routine control of cases, as the problem does not warrant a special campaign.

TABLE 34

NUMBER OF REPORTED CASES AND DEATHS OF WHOOPING COUGH WITH RATES PER 100,000 POPULATION IN 21 COUNTRIES OF THE AMERICAS, 1950-1953

Country	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	874	5.1	14 383	81.4	28 399	157.3	15 876	86.4
Bolivia (a)	2 318	102.4	1 011	41.4	897	35.4	b) 2 324	89.5
Brazil (c)	5 073	88.6	5 532	93.8	5 680	93.7	2 441	48.8
Chile	2 879	49.8	13 385	228.2	d) 5 024	84.5	d) 3 028	50.3
Colombia (a)	25 842	329.0	26 956	322.9	21 246	288.6	22 771	231.9
Costa Rica	751	93.8	210	25.5	669	78.4	1 606	182.2
Cuba	195	3.7	153	2.9	39	0.7	...	...
Dominican Rep	327	15.3	118	5.4	7	0.3	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	3 063	412.2	1 822	210.6	1 083	117.5	d) 2 156	242.8
Guatemala	5 880	209.8	7 747	268.4	10 860	365.0	...	...
Haiti	2 292	74.4	2 485	79.2	2 183	68.2	...	...
Honduras	...	...	1 774	120.7	1 592	105.2	...	...
Mexico	31 654	122.6	11 888	44.8	32 734	120.0	...	...
Nicaragua	52	4.9	118	10.8	1 044	92.5	1 877	161.0
Panama	1 328	177.5	353	46.0	357	45.5	520	64.7
Paraguay (a)	2 178	188.7	4 330	366.0	2 847	234.8	...	...
Peru (a)	12 949	384.2	19 379	553.4	12 318	360.9	e) 13 228	383.0
United States	120 718	79.8	68 687	44.8	45 030	28.9	...	...
Uruguay	2 909	121.3	1 239	50.8	874	35.2	938	37.2
Venezuela (a,d)	11 983	454.2	13 971	493.7	18 499	622.1	8 592	276.4
DEATHS								
Argentina	378	2.2	318	1.8	257	1.4	...	...
Bolivia	1 125	37.3	736	24.1	428	13.9	977	31.3
Brazil (c)	443	7.7	468	7.9	380	6.3	...	...
Chile	290	5.0	724	12.3	d) 503	8.5	d) 502	8.3
Colombia	3 423	30.2	4 188	36.1	4 103	34.6	b) 2 922	24.1
Costa Rica	130	16.2	72	8.7	125	14.6	223	25.3
Cuba	...	...	...	...	...	...	...	...
Dominican Rep.	327	15.4	64	3.0	47	2.1	...	...
Ecuador (f)	176	25.9	182	26.0	70	9.7	...	...
El Salvador	697	37.5	408	21.7	208	10.9	d) 549	28.4
Guatemala	3 210	114.5	3 052	105.7	5 921	199.0	...	...
Haiti	10	0.3	5	0.2	...	...	...	...
Honduras	1 162	81.4	904	61.5	781	51.6	...	...
Mexico	11 888	46.0	8 738	32.9	8 871	32.5	...	...
Nicaragua	76	7.2	38	3.5	215	19.1	369	31.7
Panama	284	38.0	201	26.2	...	...	...	...
Paraguay (a)	32	2.8	103	8.7	...	...	...	...
Peru	7 211	89.0	7 928	95.9	7 573	89.9	...	...
United States	1 118	0.7	951	0.6	g) 410	0.3	...	...
Uruguay	141	5.9	64	2.6	...	...	...	...
Venezuela (h)	624	12.5	716	14.0	800	15.3	315	5.9

(a) For reporting areas.
(b) Revised report.
(c) Federal District and State Capitals, excluding city of Sao Paulo.
(d) Provisional.
(e) Through November.
(f) Capital cities of provinces.
(g) Estimate based on a 10-per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed.

TABLE 35
STATUS OF THE WHOOPING COUGH CONTROL PROGRAM
IN 17 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Vaccination in pre-epidemic period, but on a limited scale.
Brazil	Whooping cough is a serious communicable disease problem. State health services, through the district public health units and their communicable-disease services, are seeking practical means of immunizing the greatest possible number of children. The Federal Government, through the National Children's Department in the Ministry of Health, offers assistance to state and private organizations. A laboratory furnishing vaccine for the prevention of whooping cough, with an annual capacity of 120,000 doses, is already in operation. This laboratory is a part of the program developed by UNICEF. (Condensed from the Report to the XIV PASC, page 19).
Chile	The program of the past three years has covered two main aspects: patient-control measures and a combined vaccination program. Patient-control, based on diagnosis, prompt case reporting, isolation, treatment, and epidemiological research, is carried out only in urban areas. The combined vaccination program, carried out with the cooperation of the Pan American Sanitary Bureau and UNICEF, has been in operation since 1951. It covers the Provinces of Santiago and Concepcion and the Department of San Felipe, whose inhabitants make up a third of the country's total population. The plan includes an initial urban phase and a second rural phase during which 40% of the children of from three months to five years of age will be immunized. The final objective is the immunization of 70% of this age group. In the Province of Santiago, by 31 December 1953, two doses had been administered to 50% of the susceptible children of from three months to six years of age, residents of urban centres, and to 40% in the rural zone. The Province of Concepcion and the Department of San Felipe had, at that time, achieved the immunization of 40% of the susceptible children.
Colombia	Vaccination by public health agencies in collaboration with the UNICEF campaign.
Costa Rica	Permanent DPT vaccination programs.
Cuba	Notifiable disease. Classic control measures.
Dominican Republic	Problem not sufficiently important to warrant a control program.
Ecuador	Emergency program as cases occur.
El Salvador	In 1952 a vaccination campaign, using triple DPT vaccine, was begun, through special teams working in the country's main urban centres.
Mexico	Continuation of the programs of the Unit for the Prevention of Whooping Cough, covering the main aspects of care services, epidemiological, bacteriological, and clinical research, and disease therapy.

TABLE 35
STATUS OF THE WHOOPING COUGH CONTROL PROGRAM
IN 17 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Mexico (Continued)	Preferential immunization is given to susceptible children of approximately three months of age. Studies on various existing vaccines to determine their immunological potency.
Nicaragua	In the program being carried out, several cases have been reported.
Panama	Included in the general work program of the Public Health Units.
Paraguay	The Department of Epidemiology, together with the Children's Department, are carrying out a program of systematic vaccination of children against whooping cough.
Peru	In accordance with an agreement concluded with the WHO and UNICEF, a control program has been initiated on a national scale.
United States	In 1951, 68,687 cases were reported, and the median for the five-year period 1948-1952 is 68,138 cases. By 1953, cases reported had dropped to 36,976.
Uruguay	Preventive vaccination is the core of the campaign that is being waged against this disease. The triple vaccine, diphtheria-pertussis-tetanus, is used increasingly.
Venezuela	Control is based on regular vaccination given by the local Departments of Public Health, according to the number of cases that occur.

TABLE 36

NUMBER OF REPORTED CASES AND DEATHS OF YAWS WITH RATES PER 100,000 POPULATION IN 6 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Colombia (b)	2 855	36.4	2 547	30.5	3 083	41.9	4 246	43.2
Ecuador	...	...	...	...	...	...	...	...
Haiti	82 735	2 686.2	72 452	2 309.6	67 592	2 112.3	...	...
Panama	256	34.2	158	20.6	171	21.8	192	23.9
Peru (b)	...	...	475	13.6	390	11.4	...	...
Venezuela (b,c)	2 530	95.9	1 987	70.2	1 496	50.3	1 401	45.1
DEATHS								
Colombia	...	...	...	...	...	...	...	...
Ecuador (d)	1	0.1	1	0.1	1	0.1	...	...
Haiti	...	...	...	...	...	...	...	...
Panama	-	-	1	0.1	...	...	...	...
Peru	...	...	...	...	...	...	...	...
Venezuela	-	-	1	0.0	1	0.0	-	-

(a) A country reporting neither a case nor a death is excluded.
(b) For reporting areas.
(c) Provisional.
(d) Capital cities of provinces.

TABLE 38

NUMBER OF REPORTED CASES AND DEATHS OF JUNGLE YELLOW FEVER WITH RATES PER 100,000 POPULATION IN 8 COUNTRIES OF THE AMERICAS, 1950-1953

Country (a)	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Bolivia	1 806	79.8	3	0.1	1	0.0	18	0.6
Brazil (b)	4	0.0	50	0.0	221	0.0	39	0.0
Colombia	12	0.1	26	0.2	13	0.1	11	0.1
Ecuador	-	-	7	0.2	-	-	...	...
Nicaragua	...	...	...	...	...	...	...	...
Panama	2	0.3	3	0.4	-	-	1	0.1
Peru	16	0.2	4	0.0	1	0.0	-	-
Venezuela	3	0.1	4	0.1	1	0.0	6	0.1
DEATHS								
Bolivia	516	17.2	3	0.1	1	0.0	11	0.4
Brazil (b)	4	0.0	50	0.0	221	0.0	39	0.0
Colombia	12	0.1	24	0.2	16	0.1	11	0.1
Ecuador	-	-	-	-	-	-	...	...
Nicaragua	-	-	-	-	-	-	8	0.7
Panama	2	0.3	4	0.5	...	...	...	...
Peru	...	...	...	...	...	...	...	...
Venezuela	3	0.1	4	0.1	1	0.0	6	0.1

(a) A country reporting neither a case nor a death is excluded.
(b) Revised report.
(c) Cases confirmed by viscerotomy.

TABLE 37

STATUS OF THE YAWS CONTROL PROGRAM IN 13 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Limited to certain areas of the tropical zone. Exact data on disease not yet available.
Brazil	The Division of Public Health Organization of the National Department of Health is in charge of yaws control. The campaign was begun in 1953. In recent years, permanent stations and sub-stations have been established in the areas of greatest endemic incidence. In administering mass treatment, mobile units apply new medication. "Rapid-treatment Centers" are also in operation. (Condensed from the Report to the XIV PASC, page 19).
Colombia	General campaign in affected zones of the Pacific coast, with application of treatment.
Costa Rica	Since cases of yaws rarely occur in Costa Rica, there is no program against this disease.
Cuba	Not a notifiable disease. The Fund for the Prevention of Cutaneous Diseases gives special attention to this disease.
Dominican Republic	Since 1932, a special control campaign has been waged. At present a plan for the eradication of yaws is being conducted throughout the country. The drug being used is procaine penicillin G in oil with 2% aluminum monostearate; 600,000 units are administered to cases and 300,000 to contacts.
Ecuador	The Inter-American Cooperative Service is in charge of the program. Final phase.
El Salvador	This disease has not been identified in El Salvador.
Haiti	A campaign to eradicate this disease is being carried out, with the technical assistance and cooperation of the WHO and UNICEF.
Panama	Included in the general work program of Public Health Units.
Peru	No specific control program.
United States	No cases occurred in the United States during 1953.
Venezuela	Five teams, operating in 15 affected areas, apply systematic treatment with procaine penicillin G with 2% aluminum monostearate, oil suspension, 600,000 units to positive cases and 300,000 units to contacts.

TABLE 39
STATUS OF THE YELLOW FEVER CONTROL PROGRAM
IN 12 COUNTRIES OF THE AMERICAS

Country	Status of Program (a)
Bolivia	Only jungle yellow fever is found in Bolivia.
Brazil	The National Yellow Fever Service of the National Department of Health is the agency responsible for yellow fever control throughout the country.
Colombia	Epidemiological control of cases. Vaccination and preparation of vaccine. Viscerotomy. Special studies.
Cuba	Notifiable disease.
Dominican Rep.	Although the vector, Aëdes aegypti, is present, yellow fever does not occur.
Honduras	As various cases of yellow fever have been confirmed in Costa Rica, and because of the possibility of an invasion of jungle yellow fever into Honduras, the vaccination of inhabitants was undertaken. As the danger of yellow fever still exists, preventive activities are being continued so as to protect all localities in the event of an invasion of the disease.
Mexico	Investigations are being continued to study the migration of the virus and of the presence of Diptera of the Haemagogus genus and other possible vectors.
Nicaragua	All inspections made in the country during 1953 gave negative results for Aëdes aegypti.
Panama	The program is being conducted in the Provinces of Panama, Chiriqui, and Bocas del Toro.
Paraguay	A specialized campaign for the control of Aëdes aegypti is under way throughout the Republic.
United States	No cases occurred in the United States during 1953. Key West, Florida, is apparently still free of aegypti. There is no program for vaccination of rural population.
Venezuela	Jungle yellow fever is controlled through vaccination of exposed inhabitants.

(a) Specific information on program for viscerotomy, Aëdes aegypti eradication, and anti-yellow fever vaccination of rural dwellers, is included in the following Tables 40 to 42.

TABLE 40
STATUS OF THE VISCEROTOMY PROGRAM IN 8 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	There are some 70 posts that provide an average of 450 samples annually.
Brazil	In Brazil viscerotomy plays an important role in detecting silent foci of the disease, sporadic cases, and first signs of jungle yellow fever epidemics. Several erroneous ideas on the epidemiology of the disease were corrected, principally as the result of viscerotomy, when jungle yellow fever was discovered in 1932. Introduced in 1930, viscerotomy work reached a peak in 1940 and 1941, when more than 32,000 samples were obtained per year. In 1945 the production of samples began to decline because of the restriction to special areas in certain states and of the small payment made per sample. From 1950 to 1953, over 1,300 viscerotomy posts obtained some 33 thousand samples, which were positive in 1.0 per cent of the cases. (Condensed from the Report to the XIV PASC, pages 43 to 45).
Colombia	Total number of viscerotomies: 1,301 with 11 positive.
Ecuador	Work continues in the jungle area.
Haiti	Viscerotomy was undertaken during the eradication program in the Port-au-Prince area in June 1953.
Nicaragua	Two posts were established in the country, only 6 viscerotomies having been made.
Peru	Plans are being made to reorganize this service, which is at present deficient.
Venezuela	The 75 viscerotomy posts, strategically placed for the detection of yellow fever cases, led to the discovery of 3 cases in 1950, 3 in 1951, 1 in 1952, and 6 in 1953.

TABLE 41

STATUS OF THE AEDES AEGYPTI ERADICATION PROGRAM IN 18 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	The Aëdes aegypti was practically eradicated in 1942. It has not been found in Bolivia since February 1948.
Brazil	During the four-year period,1950-1953, the National Yellow Fever Service intensified its activities against urban yellow fever, spraying with DDT some 82 million deposits found in 1,737,000 houses. The campaign encountered two obstacles to Aëdes aegypti eradication work in the country. The first difficulty was the lack of continuity in the areas worked in heavily infested regions, a problem that was further accentuated wherever there was heavy traffic between "clean" and "infested" areas. The difficulty was overcome with the establishment of a large number of anti-aegypti services in "adjacent and progressively increasing areas." All populated centers of the municipalities were grouped into units for the application of anti-aegypti measures, the work progressing continuously from the capital cities to rural centers. The second obstacle, the prolonged viability of the Aëdes aegypti egg and its extraordinary resistance to certain external factors, was overcome with insecticides of residual toxic action, which lasts for a period of about 3 months. Use is made of the "perifocal" method of spraying all deposits, with or without water, inside and outside, as well as portions of walls near the deposits. The "Excelsior" 2-liter capacity sprayer was used to apply Steg-DDT, an emulsion with 30% DDT prepared by the Service and used to make a 2% solution. Not a single Brazilian locality was found to be positive for Aëdes aegypti in 1953. By December 1954, with favorable results from the systematic follow-up checks of the 350 inspectors, it will be possible to declare the Aëdes aegypti completely eradicated from the national territory. (Condensed from the Report to the XIV PASC, pages 41 to 42.)
Chile	In 1949, infestation by Aëdes aegypti was confirmed in 43 localities in the Provinces of Tarapacá and Antofagasta, the positivity fluctuating between 8.9 and 33.3%. The control program initiated that year reduced the infestation to 4 localities in 1952, with a positivity percentage of 0.22 in Iquique and 3.16 in Tocopilla. In 1953, absolute negativity was achieved with the eradication of the remaining focus in Tocopilla, the last refuge of the arthropod vector. During that year, 35,366 house inspections and 42,976 checks of water deposits were made in zones previously infested. To eradicate the focus at Tocopilla, 3,480 houses at the port were disinsected with an aqueous suspension of gammexane and DDT. The Aëdes aegypti index dropped from 4.5 in March 1953 to zero in the period July to December of the same year. Systematic measures for the control of Anopheles, pediculosis, and Aëdes aegypti were undertaken pursuant to the terms of the Tripartite Border Health Convention in force for Chile, Peru, and Bolivia. The Convention also covers antismallpox vaccination and rat extermination.
Colombia	Destruction of the vector: the Departments of Atlantico, Magdalena, and Bolivar are free. The ports are free. The Rio Magdalena campaign is almost completed.

TABLE 41
STATUS OF THE AEDES AEGYPTI ERADICATION PROGRAM IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Costa Rica	Intensive Aëdes aegypti eradication work continued. In 1954 control work will be extended to zones at altitudes of 900 to 1,000 meters.
Cuba	An Aëdes aegypti eradication campaign will be initiated shortly, pursuant to an agreement signed recently with the Pan American Sanitary Bureau.
Dominican Rep.	With the cooperation of the PASB and UNICEF, a program is being conducted for eradication of the Aëdes aegypti through inspection and DDT treatment of houses.
Ecuador	This program is in the final stage.
El Salvador	The anti-Aëdes aegypti work, at first entrusted to 8 inspectors under the supervision of the Antimalaria Service, was turned over to the Vector Control Service in July 1953 and the training of new personnel was started to increase the number of inspectors to 20. Since 1950, activities have been intensified year by year. In 1952, 201 localities with 71,000 houses were inspected; 1,049 houses were found with A. aegypti and 6,857 with other species. In addition, more than one-half million deposits were sprayed with DDT. The campaign was continued satisfactorily in 1953.
Haiti	The eradication program was initiated in the Port-au-Prince area on 27 June 1953; many houses were inspected.
Mexico	Mexico employs, principally, antilarval measures with the use of modern insecticides and the plan of controlling adjacent and increasingly expanded areas. Protection against urban yellow fever outbreaks in the country is provided by inspection of cities and anti-aegypti campaigns in sea or air ports of entry.
Nicaragua	All inspections made in the country during 1953 gave negative results for Aëdes aegypti.
Panama	Program is being conducted in the Provinces of Panama, Chiriqui, and Bocas del Toro.
Paraguay	A specialized campaign for the control of Aëdes aegypti throughout the Republic has been pursued for the past five years in all parts of the country. Presumably, the species will be eradicated by 1954.
Peru	With the assistance of WHO, the program is being conducted along the coast and in the jungle region of the country.
United States	No cases occurred in the United States during 1953. Key West, Florida, is apparently still free of aegypti.
Uruguay	The agreement between the Ministry of Public Health, the Institute of Inter-American Affairs and SCISP (Project No. 28 of 1947) for the eradication of Aëdes aegypti in Uruguay includes the following activities:

TABLE 41
STATUS OF THE AEDES AEGYPTI ERADICATION PROGRAM IN 18 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Uruguay (Cont.)	determination of the Stegomyia index in populated centers and rural areas of the country; application of DDT to all water deposits, wherever necessary; assessment of results; and training of inspectors. The first stage of the work was directed to the interior of the country; all Departmental capitals were covered and the work was extended to localities near the infested ones. At the beginning of this stage, 51,502 dwellings inspected showed a general index of 3.9 per cent. At the last inspection, 47,990 dwellings already treated with DDT showed an overall index of 0.1 per cent. In March 1950, work was undertaken in Montevideo. The entire Montevideo Department, nearly all urban areas in the interior, and a large part of its rural zone were initially recognized as positive. Of the 450,000 existing houses 76.6 per cent were inspected; more than one million occupants of the 267,831 houses in areas previously positive were protected from the potential danger. Of the 292 sections of the country, the principal populated centers were inspected in 263 sections, 18 of which were covered during the present year. The remaining 29 sections are rural areas in non-Stegomyia zones and basically are without direct connection with the initially positive localities. In the index determination in 1953, 20 out of approximately 10,000 dwellings and 32 out of more than 100,000 deposits were found infested with Aëdes aegypti, showing indices of 0.2 and 0.0, respectively. Some 200,000 houses and more than 2 million deposits were inspected, 31 and 36 of which, respectively, were found infested. In over one million inspected deposits, the group including troughs, fountains, barrels, tubs, and casks, showed the highest index (2.1); next in importance were wells and cisterns (0.9) and tanks (0.8). The SCISP contributed 36.4 per cent of the total cost of the Aëdes aegypti eradication work; the PASB contributed 10.7 per cent, the Municipal Government of Montevideo 5.8 per cent, and the Municipal Governments of the interior 35.2 per cent. The average cost per house covered was $0.67. An agreement was concluded between the Ministry of Public Health and the PASB to complete the index determination work; to achieve eradication throughout the interior in 1954; to complete eradication of the species in the capital in 1955; to establish a permanent Arthropod Control Service, under the Ministry of Public Health. (Condensed from the Report to the XIV PASC, pages 19 to 24).
Venezuela	By 1953, intradomicile spraying with DDT and other insecticides covered 23,400 localities with 548,304 houses, in which the mosquito was exterminated. In the same year, 296 localities in non-malaria zones of nine states received antilarval treatment, with only 8 localities remaining positive for the mosquito at the end of 1953. To the States of Tachira, Merida, Trujillo, and Lara, which were reported negative in the Report to the XIII Pan American Sanitary Conference, can now be added Barinas, Cojedes, Falcon, Portuguesa, Zulia, and the Federal Territories of Amazonas and Delta Amacuro.

TABLE 42
STATUS OF THE PROGRAM FOR YELLOW FEVER VACCINATION OF THE RURAL POPULATION IN 12 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	An over-all program for periodic vaccinations every 5 years was initiated in 1950. The program is progressing regularly.
Brazil	In the period 1950 to 1953, the number of stationary and mobile yellow-fever vaccination units reached a total of 120 and the number of persons vaccinated rose from one-half million in 1950 to approximately 6 millions in 1953, with a total of more than 12 million persons for the 4-year period. This increase was due partly to the occurrence of violent outbreaks of jungle yellow fever, which led to a total of 310 cases, confirmed by viscerotomy, or for each of the four years, 2, 50, 220, and 38 cases, respectively. Although the last fatal case occurred in April 1953 in São Paulo, the vaccination campaign has continued actively and will be intensified during 1954. (Condensed from the Report to the XIV PASC, pages 45 to 46).
Colombia	Total number of vaccinations: 201,808; rural vaccinations: 189,141.
Costa Rica	The program is carried out jointly with that for vaccination of the urban population. Vaccinations reached a total of only 16,225 during the year, as the entire rural population in the country had been vaccinated previously.
Cuba	Not carried out. Vaccinations are given only to travellers who request them.
Ecuador	Vaccination of all rural inhabitants in the suspected zone continues.
Mexico	In regions where the presence of the jungle virus was confirmed or at least suspected, vaccinations are applied to all persons living in villages nearby or who come in contact with the forests in the course of their work.
Nicaragua	In 1953, 229,230 persons were vaccinated in the country; of that number approximately 60 per cent are rural inhabitants.
Peru	There is a systematic vaccination program.
United States	There is no program for vaccination of rural population.
Uruguay	Vaccinations are applied when necessary. During the period 1950 to 1953, 121, 581, 238, and 65 yellow fever vaccinations were applied, respectively, in each of the four years.
Venezuela	Jungle yellow fever control is maintained through the vaccination of exposed inhabitants. Vaccinations for the years 1950-1953 totalled 37,000, 66,000, 97,000, and 67,000, respectively. At the end of 1953, 618,000 persons had been immunized, which meant that almost all inhabitants of the dangerous zone were protected.

CHAPTER IV

PERSONNEL EMPLOYED IN HEALTH SERVICES

The preceding chapters provide statistical data which are essential to measure the health problems of the countries and give a summary of the programs for the control and eradication of communicable diseases. In order to complete data regarding health services, the numbers and kinds of personnel employed and the organization of health services were included in the Four-Year Reports as well as specific data regarding sanitation programs. This chapter gives summary data regarding the full-time personnel employed and the following chapter shows in a summary table the organization of National Health Services. These two chapters provide limited data regarding the situation of health services in the Member States by showing the kinds of services and the types of professional personnel rendering these services.

Information regarding the employed personnel according to the specialties is essential in considering the development of health services and the training of personnel for the future development of expanding health programs. Fifteen countries provided data regarding personnel employed in the National Health Services; six of them also gave the numbers of employees in State or provincial health services and 5 in local health services (Table 43). A few of the countries had a decentralized organization with services rendered at state and local levels, while in certain others, services were principally at the national level. Because of variations in the organizations in health services, the data in this table have to be considered in relation to the programs in the countries and do not afford a comparable picture. For example, in one country the personnel employed in hospitals are included, while in other countries such employees are not usually included. Also the definition of certain categories of personnel varies from country to country, preventing a strict comparison. A more important consideration in interpreting this table is the different concept of full-time prevailing in the various countries. As the questionnaire was stated, only numbers of personnel who devoted their working time wholly to the positions in the health service, with exclusion of professional practice, were expected. However, the data indicate that personnel who were not full-time have been included, which is due to the variations in employment practices in the countries. A public health career and adequately trained full-time staff are essential for the development of modern health services.

Notwithstanding these difficulties in interpretation, Table 43 shows that the reported numbers of physicians, engineers and other professional personnel employed in National Health Services were relatively small in several countries. Although the public health nurses were few in number, in addition to those serving in National Health Services, many public health nurses are rendering service in state, provincial and local health units. Provision of opportunities for education and training of specialists in many of these categories is an important phase of planning for the development of health services.

It is hoped that this information regarding personnel will stimulate discussions and plans for enumeration of personnel employed in health services throughout the Americas for future reports.

TABLE 43

FULL-TIME PERSONNEL EMPLOYED IN NATIONAL, STATE OR PROVINCE, AND LOCAL HEALTH SERVICES IN 15 COUNTRIES OF THE AMERICAS, 1953

Level of service and country	Physicians	Nursing personnel			Sanitation Personnel			Dentists	Nutritionists	Laboratory personnel	Statisticians	Health educators	Social workers	Clerical personnel	Other personnel
		Public health	Other graduate	Other	Graduate engineers	Sanitarians	Other								
NATIONAL															
Argentina	32	150	...	...	6	30	...	...	40	...	...	6	...	...	...
Bolivia	11	1	...	...	...	25	68	1	1	7	1	...	...	58	25
Brazil (a)	265	99	20	340	b) 74	17	453	8	-	178	6	10	-	460	1120
Chile	769	c) 441	c)1922	7122	38	242	...	d) 542	219	395	e) 650	22	567	3151	8843
Colombia (c)...	32	...	...	...	9	4	...	2	...	...	2	5	...	...	...
Costa Rica (f)..	4	30	26	110	10	79	73	27	5	38	5	2	6	140	...
Dominican Rep.	90	3	14	54	4	141	...	10	...	22	1	...	...	215	875
El Salvador (g).	16	85	...	140	8	...	205	21	1	3	2	30	...	200	135
Mexico	1032	1955	...	48	19	444	...	44	47	423	34	...	251	1975	5394
Nicaragua	51	16	8	41	2	36	80	1	1	36	10	17	...	49	117
Panama	159	85	296	346	2	56	50	32	5	116	1	1	4	282	1056
Paraguay	203	16	55	108	1	3	58	33	7	h) 42	36	17	37	567	i) 43
Peru	676	41	262	94	25	22	291	84	1	48	1	21	2267	1230	90
United States (j).	1405	k) 128	1260	1441	341	...	...	217	96	1601	131	17	35	...	...
Venezuela	856	407	236	2516	43	492	103	12	37	300	4	7	150	2052	5343
STATE OR PROVINCE															
Bolivia	...	...	...	37	...	24	...	...	4	52	27	...	...	51	145
Colombia (c)...	42	52	...	...	15	30	...	28	...	17	...	16	...	26	...
Mexico	644	565	...	30	22	555	...	57	...	66	31	...	18	645	1117
Nicaragua	40	19	...	26	...	35	27	5	1	19	...	48	...	3	31
Paraguay	58	13	17	112	...	...	160	10	...	l) 9	6	...	51	157	35
United States ..	632	1319	120	...	664	1194	...	100	133	1697	191	225	163	7496	3596
LOCAL															
Bolivia	10	25	82	264	...	...	...	17	...	...	...	...	9	250	401
Colombia (c)...	867	1059	...	...	5	1694	126	210	...	12	...	...	...	216	...
Mexico	78	141	...	...	3	13	...	4	...	42	13	...	2	67	255
Nicaragua	5	2	...	3	...	4	2	...	...	9	...	6	...	...	7
United States ..	1502	12492	621	...	407	6810	...	234	106	1301	213	272	177	8280	4233

(a) Personnel engaged in special or internationally agreed health program or sanitary campaign, undertaken by the Government. Full-time personnel is that working 6 hours a day or "tiempo integral" in State or municipal service. Revised report.

(b) Including 19 topographers, 2 agriculturists and 3 chemists.

(c) Revised report. In Chile, other graduates including 573 "matronas."

(d) Only 15 served 6 working hours daily.

(e) Including 30 statisticians and 620 officials.

(f) In addition there are 65 part-time.

(g) Municipal contributions are made exclusively in payments of wages and material used in basic sanitary works.

(h) Including 10 auxiliary employees.

(i) Pharmacy and technical personnel.

(j) Revised by U. S. Health Service to include only personnel in public health services.

(k) In foreign service: 28; loaned to State or local Service: 30.

(l) Including 4 auxiliary personnel.

Chapter V

ORGANIZATION OF HEALTH SERVICES

The organization of health services varies notably in the countries of the Americas. Improvements are necessary in methods of administration of health services in order to keep pace with changing programs and with progress in administrative techniques. Studies of the structure of health organizations are valuable in providing basic information and stimulating discussion of satisfactory patterns of administration. Although the material provided in the Four-Year Reports was limited in this field, an attempt has been made to bring together certain information in this chapter.

In a few countries the organizational structure was outlined. To illustrate the variations and to present material for discussion, selected material regarding the administration of health services in five countries: Brazil, Chile, Mexico, United States, and Venezuela, is described briefly.

Brazil

The federal public health services of Brazil comprise four large agencies, i.e.: The National Department of Health, the National Children's Department, the Oswaldo Cruz Institute, and the Special Public Health Service. The first two are divided, functionally, into two main types of units, one normative and the other executive. One directs and lays down norms and standards, the other carries out the work. The Divisions are in the first group, and the National Services and the Federal Commissions in the second. Generally speaking, the Federal Government is concerned with the solution of public health problems on the nation-wide scale. In this work, the following are operated essentially as executive agencies at the national level: National Services for Malaria, Leprosy, Yellow Fever, Mental Diseases, Cancer, Plague, and Tuberculosis. In addition to the general public health services, the following agencies provide complementary services in this field to the entire country: the Port Health Service, the Federal Biostatistics Service, the National Drug Control Service, the National Health Education Service, and eight Federal Health Commissions, the activities of each of the latter being limited to a group of states. As to the Federal Government's supervision and planning offices, these comprise the so-called normative agencies or Divisions. One of them, the Public Health Division, is concerned not only with the communicable disease problem but also with nursing, sanitary engineering, and public health organization in general. Thus, for the benefit of the States, this central Division, acting through the Federal Health Commissions, establishes norms, provides orientation, directs, supervises, and supplements activities in response to the requirements of the State Departments of Health. The other division, the Hospital Organization Division, as its name implies, specializes in hospital activities, directing its efforts also toward hospital control, construction and inspection, and giving orientation in the various problems encountered by hospital establishments. Through the Division's Hospital Care Fund, hospitals receive the financial or material support they require. This combined group of agencies and services, as described, makes up the National Department of Health.

Chile

The National Health Service, established in 1952, combines in one agency the functions, duties, obligations, staff, and budgets of the curative and preventive medical services in Chile. The National Health Service comprises "Dirección General" and 18 Health Zones. The Director General delegates his duties of coordination, executive supervision, and regulation to two "Sub-Direcciones".

The "Sub-Dirección Normativa" correlates and coordinates the activities of the Departments, Subdepartments, and Technical Normative Sections. The "Sub-Dirección General" performs equivalent functions with respect to the executive activities of the Service, through the health zones and centres. The "Sub-Dirección Normativa" has 6 Departments: 1) Department of Epidemiology, 2) Medical Care Department, 3) Environmental Sanitation Department, 4) Maternal and Child Care and Health Promotion Department, 5) Laboratory Department, and 6) Department of General Technical Services. The Departments, in turn, are divided into Subdepartments according to specialized work and technical programs carried out. The Department of Epidemiology includes 5 Subdepartments: 1) Acute Communicable Diseases, 2) Parasitic Diseases, 3) Tuberculosis, 4) Venereal Diseases, and 5) Chronic Diseases and Accidents. The 5 Subdepartments of the Environmental Sanitation Department are: 1) Sanitary Engineering, 2) Industrial Hygiene and Security and Occupational Medicine, 3) Insects and Rodents, 4) Housing, and 5) Food Protection and Control. In the Department of General Technical Services there are 7 Subdepartments: 1) Biostatistics, 2) Health Education, 3) Nursing, 4) Chemical and Pharmaceutical Subdepartment, 5) Social Service, 6) Personnel Selection and Training, and 7) Medical Teaching Staff. The health zones now include 163 health centres of various types, which are the units responsible for carrying out all public health functions.

Mexico

The Public Health Service in Mexico comes under the Ministry of Public Health and Welfare, which has 16 Technical Offices and one "Jefatura de Servicios" in each federal unit (29 States, 2 Territories, and 1 Federal District). The Technical Offices are: Administration, Sanitary Engineering, Social Welfare, Coordinated Services, Cooperative Rural Medical Services, Public Health in the Federal District, Health Education, Epidemiology, Public Health Campaigns, Maternal and Child Health and Care, Rehabilitation, Nursing and Social Work, Industrial Hygiene, Drug Control, Food and Beverage Control, and Biostatistics.

There is one "Jefatura de Servicios" for Coordinated Public Health and Welfare Services in each federal unit, organized in sections as follows: communicable disease epidemiology and control, health education, sanitary engineering and industrial hygiene, medical care, maternal and child health and care, food and drug control, and laboratory, all exercising directive functions. The federal units having seaports, border posts, or airports also have an international health service.

The practical work is the responsibility of the Public Health and Welfare Centres and Units of the States and Territories, and of the Communicable Disease Prevention Centres and the Public Health Departments of the Federal District. The smallest work groups are the Centres, which are composed of one physician, one nurse, and one sanitary officer. The Units have more personnel and equipment according to the size of the population they cover; their facilities are set up in Dispensaries: antivenereal, antituberculosis, antiplague, and antimalaria, depending on the needs of the inhabitants, as well as in different Services: maternal and child health, general medical care, hospitals, maternity hospitals, sanitary engineering, health education, etc.

United States

There are three distinct levels of health organization in the United States: Federal, state and local. Federal official agencies are responsible for controlling interstate health hazards and protecting the country from the communicable diseases from abroad. The Federal Government sponsors research and demonstration into the cause, prevention and control of disease and allots grants-in-aid for the expansion of state and local health services. The United States Public Health Service is the chief Federal Health Agency, but numerous other agencies have certain health interests and responsibilities

directly related to their broader functions. Health functions of state official agencies range from regulatory authority or advisory services only, to the operation of complex direct service units. More adequate local health service is stimulated through promotional, advisory, and supervisory activities and through financial aid from state and Federal sources for approved health projects. Generally, protection of community health is a public responsibility discharged through official agencies of local government.

Venezuela

The Venezuelan public health organization is, essentially, nation-wide. All the preventive services and a large part of the government curative medicine services are under the technical direction of the Department of Public Health, which is divided into 3 groups: 1) Environmental Sanitation and Communicable Diseases, 2) Public Health Administration, and 3) Health Promotion. Under the Environmental Sanitation and Communicable Diseases, there are 8 Divisions, as follows: Engineering, Epidemiology and Vital Statistics, Yellow Fever and Plague, Malariology, Tuberculosis, Venereology, Leprosy and Laboratories. In addition to the Caracas Health Unit, the following are included in Public Health Administration: the Division of Health Units and Division of Rural Health, the Hospital Institute, the Aragua State Health Region, and the Health Centres. Under Health Promotion there are 8 Divisions: Maternal and Child Health, School Health, Dental Health, Mental Health, Health Education, Social Service, Oncology, and Pharmacy.

- - - - -

Fourteen countries provided information regarding the responsibility for specific functions. Information regarding the agency or subdivision of the National Health Service responsible for 12 specific activities is presented in brief form in Table 44. Although this table gives only limited information, the individual reports of several countries give more complete descriptions. In this table the divisions, departments, services are considered to be under the direction of the National Health Service except when another agency is specified and an asterisk indicates that this was not a part of the National Health Service.

Of the 14 countries providing data all stated that responsibility for communicable diseases was in the National Health Service, usually in a division or department of communicable diseases or epidemiology. The control of tuberculosis and venereal diseases was frequently in this same division or department or a section of it. In a few countries, there were in addition services designated with responsibility for some of the important communicable diseases such as malaria, yellow fever and leprosy.

Environmental sanitation was the responsibility of a major unit of the National Health Service in several countries; however, this service was not known to have been included in the structure of National Health Services in 3 countries.

In many countries maternal and infant hygiene services were included in the structure of the National Health Services; however, in two countries this activity was assigned in whole or in part to a separate agency, in one to the local level, and in two others no provision for this activity was stated. In 5 countries the National Health Service contained a unit with responsibility for industrial hygiene.

All except one country showed provision for biostatistics in the organizational structure of the National Health Service.

In many countries medical care was not a responsibility of the National Health Service; some other agency or no centralized agency was responsible. However, in 7 countries a Division of Hospitals or other administrative subdivision of the National Health Service was assigned this responsibility to various degrees. In one country medical care is an integral function of the National Health Service.

This chapter provides a brief introduction to the study of organization of health services in Member States. Through consideration of this material and the needs for study of health organizations and administrations, plans may be made for a complete and adequate summary in a future report.

TABLE 44

TWELVE ACTIVITIES IN THE ORGANIZATION OF NATIONAL PUBLIC HEALTH SERVICES, 1953

	Communicable Diseases	Tuberculosis Control	Venereal Disease Control	Environmental Sanitation	Industrial Hygiene	Vital and Health Statistics
Bolivia	Div. of Com. Diseases	Serv. in Div. of Com.Diseases	Serv. in Div. of Com. Diseases	Limited scale	SCISP	Nat'l. Dept. of Biostatistics.
Brazil	Div. of Public Health Org. Specialized Services	Nat'l. Tuberculosis Serv.	Div. of Public Health Org.	* Min. of Communications and Public Works	* Min. of Labor, Industry and Commerce	Federal Biostatistics Serv.
Chile	Dept. of Epidemiology	Sub-Dept. of Tuberculosis	Sub-Dept. of Venereal Diseases	Dept. of Environmental Health	Sub-Dept. of Indus. Hygiene	Sub-Dept. of Biostatistics
Colombia	Nat'l. Epidemiology Sect.	Nat'l.Administrative Sect.	Local level Antivenereal Inst. and Public Health Org.	Nat'l. San. Eng. Sect.	* Min. of Labor	Nat'l. Sect.
Costa Rica	Epidemiology Dept.	Antituberculosis Campaign	Antivenereal Campaign	Environmental Sanitation	None	Dept. of Biostatistics
Dominican Republic	Nat'l. Service	Tuberculosis Div.	Com. Disease Div.	San. Eng. Sect.	None	* General Statistics Div.
Ecuador	Div. of Epidemiology and Control of Communicable Diseases	Nat'l. Antituberculosis Serv.	Antivenereal Campaign	San. Eng. Dept.	...	Div. of Health and Demographic Statistics
Haiti	Div. of Public Health	...	Div. of Public Health	Div. of Public Health	None	Div. of Public Health
Mexico	Dir. of Epidemiology	Antituberculosis Campaign	Antivenereal Disease Campaign	San.Eng. Dir. * Sec. of Hydraulic Resources	Indus. Hygiene Dir.	Biostatistics Dir.
Panama	Sect.	Campaign	Epidemiological Serv.	Sect.	...	Public Health Dept. *Office of Statistics and Census
Paraguay	Dept. of Epidemiology	Inst. for Individual and Community Health	...	SCISP	Dept. of Indus. Hygiene	Div. of Biostatistics
Peru	Div. of Com. Diseases	Div. of Tuberculosis	Dept. of Venereology	...	Dept. of Indus. Hygiene	Dept. of Biostatistics
United States	Public Health Serv. * Dept. of Agriculture	Public Health Serv.	Public Health Serv.	Public Health Serv.	Public Health Serv. * Dept. of Labor	Public Health Serv.
Venezuela	Div. of Environmental Health and Com. Diseases	Div. of Tuberculosis	Div. of Venereology	Div. of Malariology Div. of San.Eng.	* Min. of Labor	Div. of Epidemiology and Vital Statistics

* Organization other than the National Public Health Service.

Abbreviations: Com. - Communicable; Dept. - Department; Dir. - "Dirección"; Div. - Division; Indus. - Industrial; Inst. - Institute; Min. - Ministry; Nat'l. - National; Org. - Organization; San.Eng. - Sanitary Engineering; Sec. - Secretariat; Sect. - Section; Serv. - Service; SCISP - International Cooperative Public Health Service.

TABLE 44

TWELVE ACTIVITIES IN THE ORGANIZATION OF NATIONAL PUBLIC HEALTH SERVICES, 1953 (Continued)

Country	Maternal and Child Health	Dental Health	Nutrition	Health Education	Diagnostic Laboratory	Medical Care
Bolivia	Serv. established	Limited scale	Dept. of Nutrition	SCISP	Initial stages	* State agencies * Nat'l. Social Security Fund
Brazil	* Nat'l. Children's Dept.	State and local	Nutrition Sect. * Min. of Labor * Inst. of Nutrition of the Univ. of Brazil	Nat'l. Health Education Serv.	State and local	Div. of Hospital Org. * Others
Chile	Dept. of Maternal and Child Care	Dental Health Sub-Dept.	Nutrition Sub-Dept.	Health Education Sub-Dept.	Central Laboratory Dept.	Medical Care Dept.
Colombia	Nat'l. Sect.	Nat'l. Sect.	Nat'l. Inst.	Central Sect.	Local level	Local activity
Costa Rica	Dept. of Maternal and Child Health	Dept. of Dental Health	Dept. of Nutrition	Dept. of Health Education	Public Health Laboratories	* General Welfare Div.
Dominican Republic	None	Local level	None	None	Public Health Lab. and Nat'l. Bromatology Lab.	Div. of Hospitals
Ecuador	Div. of Public Health Units and Health Centers	Div. of Public Health Units and Health Centers	National Inst. of Nutrition	Div. of Health Education	Nat'l. Inst. of Health	...
Haiti	Local level	Div. of Health	Planning stage	Div. of Public Health	General Hospital	Div. of Public and Social Welfare
Mexico	Dir. of Maternal and Child Health and Care	State and local	* Nat'l. Nutrition Committee	Dir. of Health Education	Central Laboratory and local laboratories	Dir. of Social Welfare
Panama	Serv. of the Public Health Units Sect.	Serv. of the Public Health Units Sect.	Serv.	Sect.	Central Public Health Laboratory	Hospital Div.
Paraguay	...	...	Local level	Dept.	...	...
Peru	Dept. of Maternal and Child Care	Dept. of Odontology	Dept. of Nutrition	Div. of Health Education	Nat'l. Inst. of Health	* General Dir. of Social Welfare and Hospitals
United States	* Children's Bureau Public Health Serv.	Public Health Serv.	* Children's Bureau Public Health Serv. * Dept. of Agriculture	Public Health Serv. * Children's Bureau * Office of Education	Public Health Serv.	Public Health Serv. * Social Security Administration * Other Depts.
Venezuela	Div. of Maternal and Child Health	Div. of Dental Health	Nat'l. Inst. of Nutrition	Div. of Health Education	Div. of Laboratories	Hospital Inst. and others

* Organization other than the National Public Health Service.

Abbreviations: Com. - Communicable; Dept. - Department; Dir. - "Dirección"; Div. - Division; Indus. - Industrial; Inst. - Institute; Min. - Ministry; Nat'l. - National; Org. - Organization; San.Eng. - Sanitary Engineering; Sec. - Secretariat; Sect. - Section; Serv. - Service; SCISP - International Cooperative Public Health Service.

CHAPTER VI

SANITATION PROGRAMS

One of the essential programs of health services is environmental sanitation. The contents of sanitation programs vary and for this report data were obtained on the seven following aspects of such programs: 1) Water systems, 2) Sewage disposal systems, 3) Rural sanitation, 4) Elimination of refuse, 5) Milk and other food control, 6) Insect vector control program, and 7) Housing.

Fifteen countries provided some information regarding water supply systems (Table 45). The percentage of the urban population served by these systems varied from 30 to 95. Efforts must be directed to providing water supply systems to the entire urban populations of the countries of the Americas. The provision of water which is free from disease-producing organisms is essential for the reduction in death rates from the gastro-intestinal diseases. As to be expected, in the rural areas the percentages were low. In nine countries the percentage of the total population served by water supply systems was reported and these varied from 10 to 67.

Sewerage systems are in operation in many urban areas (Table 46) and the percentage of the urban population served in 11 countries varied from 7 to 80. As with water supply systems, the provisions of sewage disposal systems are a primary health need for all urban centres.

Since the countries of the Americas are essentially rural, environmental sanitation programs are being extended to large rural areas. Although the provision of water supply and sewerage systems would logically be developed first for urban populations, there are increasing needs and opportunities for promotion by the health services of satisfactory water supplies and the safe disposal of sewage in rural areas. The rural sanitation programs, as given in Table 47, usually included the construction of sanitary privies. Also in several countries they included the control of water supplies and control of insects and the improvement of housing.

The program for elimination of waste is given in Table 48. In general, the responsibility for this program appeared to belong to the local areas, cities, provinces or states.

In 13 countries it was stated that the control of milk was at least partially a responsibility of the local or national health services (Table 49). Also several countries exercised control over food in markets and slaughterhouses.

The programs of control of insect vectors were principally for control of anopheline mosquitoes and Aedes aegypti by application of DDT to houses (Table 50). The status of programs in these fields were described in Chapter III under Malaria and Yellow Fever. However, in a few countries programs against rats, fleas and lice were also carried on.

Housing is a relatively new program in health services. Although the activities in this field in the Americas in health services were limited, Table 51 provides some data regarding this problem and indicates that this activity is being considered by health authorities.

TABLE 45
NUMBER OF WATER SUPPLY SYSTEMS AND POPULATION SERVED[a] IN URBAN AND RURAL AREAS OF 15 COUNTRIES OF THE AMERICAS

Country	Total			Urban areas			Rural areas		
	Number of water systems	Population		Number of water systems	Population		Number of water systems	Population	
		Number	Per Cent		Number	Per Cent		Number	Per Cent
Argentina . .	395	7 876 000	50	132	7 707 000	78	263	167 500	3
Bolivia. . . .	...	...	...	123	596 350	59	...	...	...
Brazil (b)	...	...	...	763	1 332 560	...	...	...	...
Chile.	...	...	...	...	2 593 500	72	...	...	...
Colombia . .	407	2 823 000	25	316	2 723 000	65	91	100 000	14
Cuba	112	...	30-75	112	...	30-75	...	...	...
Dom. Rep . .	292	652 000	31	77	482 000	95	215	170 000	10
El Salvador .	...	...	...	151	594 550	88	...	...	...
Haiti	19	...	...	15	...	...	4	...	...
Mexico	...	11 532 660	45	...	...	...	...	...	...
Nicaragua . .	13	109 550	10	12	109 300	30	1	250	0
Panama . . .	219	415 368	55	12	232 357	80	c) 207	183 011	32
Peru	...	...	30	...	...	60	...	...	10
United States	22 676	101 400 000	67	8 196	84 600 000	95	d) 14 480	16 800 000	22
Venezuela . .	...	...	...	133	...	e) 88	...	...	...

a) Percentages of population are calculated using total population living in area.
b) Number of cities and number of dwellings (predios) served in 1950.
c) Including 38 aqueducts for 61 020 and 169 wells for 121 991 population.
d) Communities of less than 5 000 population with water supply system.
e) Of 152 communities of 2 500 or more population, 133 had water supply systems.

TABLE 46
NUMBER OF SEWERAGE SYSTEMS AND POPULATION SERVED[a] IN TOTAL AND URBAN AREAS OF 13 COUNTRIES OF THE AMERICAS

Country	Total			Urban areas		
	Number of sewerage systems	Population		Number of sewerage systems	Population	
		Number	Per Cent		Number	Per Cent
Argentina	39	5 298 000	33	39	5 298 000	53
Bolivia	...	...	...	7	352 000	35
Brazil(b)	...	...	...	371	800 204	...
Chile	...	...	...	...	1 488 000	41
Colombia	281	2 500 000	22	281	2 500 000	60
Cuba	10	...	70	10	...	70
El Salvador	...	...	...	23	199 764	30
Haiti	2	180 000	6	2	180 000	46
Nicaragua	5	24 360	2	5	24 360	7
Panama	12	232 357	31	12	232 357	80
Peru	...	...	20	...	...	40
United States	11 811	91 800 000	61	...	...	...
Venezuela	...	...	...	56	...	c) 37

a) Percentages of population are calculated using total population living in area.
b) Number of cities and number of dwellings served in 1950.
c) Of 152 communities of 2 500 or more populations, 56 had sewerage system.

TABLE 47

RURAL SANITATION PROGRAM IN 13 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Program operates on a small scale. There is one mobile unit equipped to install privies. This unit, which is the last four years has built 1013 blind shaft privies, also encourages the inhabitants themselves to control privies.
Brazil	The Ministry of Communications and Public Works, through the national Department of Sanitation Works, is the agency chiefly responsible for sanitation, soil recovery, and land development. An example of its activities is the recovery and sanitation of the so-called "Baixada Fluminense" area near the Federal Capital. The Special Public Health Service of the Ministry of Health is carrying on extensive rural sanitation work in the greater part of the Amazon Valley and in the valleys of the Dôce and São Francisco rivers. The Division of Public Health Organization, of the National Department of Health, conducts activities for the improvement of water supply and waste disposal, and also for housing improvement in rural areas. Instructions for the construction of sanitary wells have been widely distributed. In the northeast region of the country, this Division constructed 228 collective septic tanks and is endeavoring to carry forward in rural areas the installation of privies, principally of the type "surface absorbent pit with sanitary receptacle." In the rural area in the south of the country, 554 artesian wells were drilled and are in operation. (Condensed from the Report to the XIV PASC, page 87.)
Chile	Programs for water supply and excreta disposal are being continued in the provinces of Aconcagua, Santiago, and O'Higgins-Colchagua. Studies were completed for a vast program of rural sanitation linked with a plan for the promotion of farm and livestock production and rural health in the provinces of Maule, Nuble, and Concepción.
Colombia	Soil sanitation through construction of privies, some sewers. Water protection. Proper sewage disposal.
Costa Rica	There is no separate program. The work is done by the Inspectors and the Sanitary Engineering Department (aqueducts, privies, drains, etc.
Cuba	This type of work is done sporadically. Attention is given to points where topographical conditions create a danger, and the work is intensified in certain circumstances, as sanitary needs require.
Dominican Rep.	Rural sanitation forms part of the programs operated under the Public Health Section, e. g.: construction of sanitary privies; insect control campaign; recommendations and notifications regarding the improvement and conditioning of dwellings; control of potable water supply. The construction and improvement of potable water facilities are activities of the National Department of Aqueducts.
El Salvador	The National Department of Public Health has initiated a program for the protection of river waters in the country, and is enforcing a prohibition on the river dumping of waste water from coffee-washing establishments and similar industries. At the same time it operates a limited program to protect drinking-water wells by sanitary installation of hand pumps. The Health Department has a plant in the capital

TABLE 47

RURAL SANITATION PROGRAM IN 13 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
El Salvador (Cont.)	city for the construction of cement privies, which are distributed to communities throughout the country for sale at low cost, the present demand being about 8,000 units per year.
Mexico	The rural sanitation activities conducted by the Sanitary Engineering Department of the Public Health and Welfare Ministry are part of the rural social welfare program, which has the aim of improving community organization from the social, economic, and cultural viewpoints and includes, as one of its specific projects, the promotion of environmental sanitation. It is estimated that primitive and inadequate sanitary practices exist in over 90% of the communities. According to the number of inhabitants, the type of social organization, and the economic resources of the community, the following activities will be carried out in the order listed: Water Supply: Taking into account the limited water resources in the region, water supply installations will be constructed with due attention to sanitary protection, priority being given to collective service at the point where the water source is located if the distance to the community is not over one kilometer, and to collective services through gravity or more elaborate conduction to the community if the source is more than one kilometer away. Excreta Disposal: Construction of privies at rural schools, where these are found; construction of privies at schools and in the community; installation of sanitary facilities and septic tank at the school, and privies in the community; construction of privies in the community, sewage system to serve public buildings, and septic tank. House Sanitation: Minimum improvement: separation of the kitchen and isolation of animals; in addition to the above-enlargement of the dwellings; in addition to the above-improvement of floors, walls, and roofs.
Panama	Included in the general plan of work of the health units.
Peru	Rural sanitation programs are conducted in small communities for the harnessing of springs and the building of wells with simply constructed facilities and basins in the public squares in the Departments of Ica, Arequipa, and Lima, and in the Lima, Pativilca, Huarás demonstration areas in collaboration with WHO and UNICEF.
United States	At present, slightly more than 1,600 of the 3,071 counties in the Nation have public health organizations. Most of these provide some health services to the approximately 73 million persons residing therein. The Public Health Service offers technical guidance and consultation to states, issues publications and sponsors research that is designed to improve the sanitation of the rural environment. However, the advancement of rural sanitation is handicapped both by lack of awareness of the need and by lack of professional health workers in rural areas.

TABLE 47

RURAL SANITATION PROGRAM IN 13 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Venezuela	Of the estimated 435,000 dwellings in rural areas of the country in 1950, 90% lacked privies or other adequate facilities for excreta disposal, 85% had dirt floors, 75% had roofs of thatch or other inadequate material, and 90% were supplied with water from contaminated or doubtful sources. The Ministry of Health and Welfare is promoting the construction of privies in rural areas and during the past 7 years some 70,000 were built, a figure that represents only 16% of the requirements. With respect to water supply, the Government is conducting a program, with the assistance of the Institute of Inter-American Affairs, for the construction of aqueducts in small communities (500 to 5,000 inhabitants) and has completed 81 aqueducts serving 107 communities with a total of 106,984 inhabitants. In recent years improvement has been observed in the roofing of many rural dwellings, the thatch being replaced by corrugated aluminum sheets. The inhabitants made the change on their own initiative.

TABLE 48

GARBAGE AND REFUSE DISPOSAL IN 16 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Few towns have garbage disposal services. Such wastes are simply emptied in areas away from the inhabited places, the material being deposited in trenches and natural ditches.
Brazil	This service is conducted by the municipal government under the supervision and direction of the State services. In rural areas waste material often is simply buried. Incineration is gradually coming into use in rural areas, the material being disposed of either by simple burning or in Caldwell type incinerators. This has resulted from the efforts of the Division of Public Health Organization, which has also endeavored to popularize the rock-pile incinerator, a measure not well received by rural dwellers. In cities the problem is given closer attention by the municipal authorities, waste being collected and disposed of either daily, or alternate days, or twice a week, according to the number of inhabitants and the capacity of the local sanitary services. Usually, the waste material is deposited in low-lying or marshy places. In some communities it is covered with earth, and in certain state capitals the incineration process is used, the ovens usually being placed in suburban areas. Four state capitals, São Paulo, Belo Horizonte, Porto Alegre, and Recife, use the modern process of fermentation, converting the material in "Beccari cells." (Condensed from the Report to the XIV PASC, pages 87 to 88.)
Chile	It is planned to decrease greatly the number of open waste deposits. In Santiago the work will be done by incineration and sanitary earth fill and in five other cities by "composting" - the Indore system. Incinerators will be installed in three other cities.
Colombia	Local program for collection, disposal, and conversion of waste, etc.
Costa Rica	All provincial capitals have waste incineration services.
Cuba	In Cuba the waste disposal services are under the Ministry of Public Health and Welfare. The waste material is transported to dumps away from the inhabited places for incinerating and burying.
Dominican Rep.	Incineration and dumping are the systems used. There are two incineration plants in the country, one in Ciudad Trujillo and the other in San Cristobal; these have an incineration capacity of 300 tons and 50 tons in 24 hours, respectively.
El Salvador	During 1952 and 1953 the National Department of Health undertook a national clean-up campaign to combat flies by doing away with waste dumps within and outside the cities, and by applying a special treatment to the fresh pulp from coffee washing plants. As the result of this campaign, municipal waste-collecting services and, frequently, facilities for the conversion of waste into organic fertilizer were organized in communities that lacked such services.
Haiti	Construction of public latrines in Cap-Haitien and Ville-Bonheur.

TABLE 48

GARBAGE AND REFUSE DISPOSAL IN 16 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Mexico	No statistics are available on the manner in which waste disposal is carried out in urban centers. In the majority of cases observed, there are open dumps at short distances from the inhabited areas, and only rarely is the waste transported an adequate distance from inhabited places. Frequently, commercially valuable materials are collected by "pepenadores" ("scavengers"), who live under precarious economic and sanitary conditions. In many communities animal manure is allowed to accumulate in stables and pigsties located within the urban zone. Two separate studies on the disposal of garbage and animal waste material have been made without practical results, thus far.
Nicaragua	Sanitary earth fill in Managua; part is burned or buried at the dwellings, the remainder not disposed of. The latter practice can be found throughout the Republic.
Panama	Work is conducted under a special service (DACA) in the cities of Panama and Colon, and in the health units throughout the rest of the country.
Peru	The system of earth fill is used in all towns in the country. Studies have been made for the use of sanitary earth fill system in the cities of Lima, Callao, and Cuzco, but funds to finance such measures are lacking.
United States	Thirty-nine states have a promotional program of improvement in all refuse practices; 42 states maintain advisory services to municipalities on their garbage collection and disposal problems. In 1951 refuse collection service was available to 89% of the urban population (84.2 million); 50% of the population residing in urban areas is reported to have refuse disposal systems meeting state approved standards. During the past two years, agricultural and health authorities have cooperatively developed a program designed to bring about the heat treatment of all garbage fed to swine. Forty-one of the 48 states now have regulations requiring that garbage be heat-treated prior to feeding it to swine.
Uruguay	The Health Department of the Municipality of Montevideo maintains a Cleaning and Plant Service to keep the city clean and to dispose of daily waste. Eighty-seven automotive and 143 horse-drawn vehicles are in service for the collection of wastes from dwellings. From 1949 to 1952, the amount of waste materials collected increased from 330 to 490 tons per day. In Montevideo the street cleaning service is carried out by 35 sweepers using 30 trucks on the main streets where such work can be effected, and by laborers on other streets. The waste material is transported to the incinerating plants, whose capacity is 400 tons. The oven-type incinerator consists of a furnace, into which the material is mechanically fed, and a combustion chamber. The furnace heat is utilized for providing hot water to the public baths. In the agricultural area of the Montevideo Department the municipal authorities constructed a mechanized plant with 26 waste fermentation chambers, Beccari type, to convert waste into material suitable for land fertilizer. (Condensed from the Report to the XIV PASC, pages 44 to 47.)

TABLE 48

GARBAGE AND REFUSE DISPOSAL IN 16 COUNTRIES OF THE AMERICAS (Continued)

Country	Status of Program
Venezuela	Waste collection and disposal is a municipal service. In the principal cities, dwellings have quite satisfactory collection service when they can be reached easily by the vehicles, but service is practically non-existent in the poor districts, which have grown irregularly, especially those on hills and highlands. Waste disposal is usually done by dumping or heaping, sometimes at a short distance from inhabited areas. The city of Maracaibo is an exception, as the Public Health and Welfare Ministry is collaborating with the municipality on an experimental basis; it assumes responsibility for collection and disposal and is providing good service to nearly all dwellings, using the sanitary earth fill method for the disposal of waste. The Sanitary Engineering Division provides technical advisory services to municipalities that wish to improve their waste collection and disposal systems.

TABLE 49

MILK AND FOOD CONTROL PROGRAM IN 14 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	There is little or no control over milk. Control of other foods is limited to certain bromatological analyses, some surveillance over food-handlers, and occasional visits to dispensers. The two pasteurization plants in operation are out-dated and not subject to sanitary inspection.
Brazil	Control over inter-state marketing and exporting of certain products of animal and vegetable origin is carried out by the Ministry of Agriculture. through the Animal Health Protection Service, the National Department of Animal Production, and the Department of Agricultural Development. These agencies make inspections to check on the health of animals, as well as on installations and transportation facilities used, etc. Sales to the public are under the control of the state health services. The Ministry of Health, National Department of Health, through its Nutrition Section (Division of Public Health Organization) surveys sanitary conditions as regards milk supplied to the state capitals, making weekly examinations of milk samples. Bills covering the Organic Health Law and the National Food Code are before the National Congress for approval. (Condensed from the Report to the XIV PASC, page 86.)
Chile	Regulations for the protection of foods continue to be enforced, from the production to the dispensing stages.
Colombia	Local programs covering milk and foods, animal herds, dispensing and transportation of products, and hygiene of the personnel, are carried out by public health agencies.
Costa Rica	In the control of both domestic and imported foodstuffs, the office in charge of this work is assisted by the sanitary inspectors, the chemical and bacteriological laboratories, the Customs Office personnel, the Animal Health Section, and the juridical agencies. Before imported products are given clearance, samples are taken to determine whether they meet the legal sanitary requirements. In the case of national products, all foods, and also the processes used in preparing some of them, are subject to control by the sanitary inspectors. Samples of milk are taken to ensure that the product meets the legal requirements, and control is maintained also over pasteurization and sterilization plants and over dairies in general.
Cuba	Milk, food, and beverages are subject to control through periodic bacteriological examinations and by inspection of the industries by sanitary inspectors and specialists.
Dominican Rep.	Control over milk and other foods is the responsibility of the Public Health Ministry, which has a food section for this purpose. Public health physicians and sanitary inspectors are responsible for checking on the conditions under which food is sold in markets, milk stations, butcher shops, etc. In addition, a check is maintained on conditions in stables or barns, slaughterhouses, canneries or bottling plants, and carriers, as well as on the health of dairy animals and beef cattle. The services of the National Public Health Laboratories are utilized for on-the-spot investigations.
Honduras	The Bromatological Department of the National Health Department is responsible for the analysis of food intended for consumption, as well as for the study of food composition and conditions under which foodstuffs are sold.

TABLE 49

MILK AND FOOD CONTROL PROGRAM IN 14 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Mexico	Control measures are applied with respect to the health of dairy animals, sanitary milking methods, equipment and machinery used for pasteurization, conditions on the premises (stables, pasteurization plants, dairies, milk trucks, etc.). All persons handling or transporting milk must pass physical examinations. Clandestine sales and adulteration in all its forms are combatted, and pasteurization plants are subject to control. Records are kept for all stables and pasteurization plants, suppliers or transporters of milk, distributors and dispensers. Physio-chemical and bacteriological analyses are made periodically. Further efforts will be made to improve sanitary conditions in slaughterhouses and markets, waste disposal methods, and treatment of manure for fertilizing purposes. Other foods, such as milk derivatives, meat and meat products, fish, and canned and bulk foodstuffs are periodically examined by means of samples taken by inspectors of the food and beverage service. The samples are analyzed by the Central Laboratory of the Public Health and Welfare Ministry, whose findings serve as the basis for withdrawing altered or adulterated foods from the market. All personnel preparing or handling foods and beverages undergo clinical examinations, so as to prevent the spread of communicable diseases by infected persons.
Panama	Included in the general plan of activities of the health units.
Peru	Control measures are carried out by the Ministry of Agriculture and the municipalities, under the supervision of the Ministry of Public Health, Sanitary Engineering Department. A project for Control of Milk and Milk Products (Regulations) is pending approval.
United States	All of the states have milk sanitation programs, some of which are administered by the state departments of health, some by state departments of agriculture, and a few by other state departments. The adequacy of the state milk sanitation regulations and the effectiveness of these programs is not known in all of the states; however, the Milk Ordinance and Code - 1953 Recommendations of the Public Health Service has been adopted as the basic standard for the sanitary control of milk in 34 states and 2 territories, and as local ordinances in 1571 municipalities and 405 counties. The total population of the areas covered by this Ordinance and Code is approximately 70,000,000 persons. It is estimated that 94% of the market milk sold to urban populations is protected by pasteurization. All of the states have food sanitation programs varying from broad laws dealing primarily with wholesomeness, adulteration and labeling of food products, to detailed sanitation standards for the various types of food processing and food service establishments. The Ordinance and Code Regulating Eating and Drinking Establishments - 1943 Recommendations of the Public Health Service has been adopted as the basic standard in 30 states, 2 territories and the District of Columbia, and as local ordinances in 685 municipalities and 348 counties. The total population of the areas covered by this Ordinance and Code is approximately 90,000,000 persons.

TABLE 49

MILK AND FOOD CONTROL PROGRAM IN 14 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Uruguay	A monopoly for the pasteurization of milk, using the rapid method, was established in Uruguay in 1936. The total figure for pasteurized milk is 400,000 liters daily and that for inspected raw milk, 50,000 liters daily. An ordinance of the municipal authorities of Montevideo makes the sealing of milk bottles compulsory. In addition, the Sanitary Milk Control Service makes a daily inspection of milk in Montevideo hospitals and maintains control over dairy farms that supply milk to aid centers (Centros Auxiliares) and hospitals in the Republic. (Condensed from Report to the XIV PASC, page 26.)
Venezuela	The staffs of the health units are entrusted with the control of milk and other foods, since the Ministry of Public Health and Welfare is the responsible central agency, by national law. There are six modern pasteurization plants in the country which supply milk to the most important cities. These plants are under constant inspection. In the rest of the country milk is sold raw, but it is the custom to boil it when received in the home, so as to preserve it. The majority of the slaughterhouses are municipal industries. In cities where there are health units, meats are inspected, after quartering, by veterinarians or specialized inspectors. Samples of all types of foods must be submitted for bromatological examination before they are approved for sale. This measure is enforced, but periodic examinations are undertaken only occasionally. All food handlers must carry a health certificate issued by the public health authority and subject to renewal each year.

TABLE 50

PROGRAM FOR INSECT VECTOR CONTROL IN 15 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Systematic control of Anopheles. In 1953, 31,847 houses with 5,944,405 square meters were sprayed and 161,272 inhabitants in the malaria zone protected. DDT treatment against fleas and lice for the control of plague and typhus was undertaken irregularly. The figures for 1953 were 2,031 persons, 1,185 beds, and 24,965 square meters of flooring in dwellings treated with DDT against fleas and 80,858 persons treated for lice.
Brazil	Vector control is carried out by the Federal Government, through the Agriculture and Health Ministries. In the Ministry of Health, the work is conducted principally through the Malaria, Plague, and Yellow Fever Services and the Division of Public Health Organization. The measures used in vector control are mechanical, physical, chemical, and biological, ranging from simple manual capture, drainage, and petroleum spraying, to the use of flame throwers, DDT, Clayton gas, hydrocyanic acid, etc. (Condensed from the Report to the XIV PASC, pages 86 to 87.)
Chile	Systematic programs to control the Anopheles pseudopunctipennis, malaria vector in Chile, and the Aëdes aegypti have been carried out with splendid results. Other intensive activities were conducted for the control of pediculosis, especially in the southern provinces of the country and in the Indian settlements. As louse infestation is high in urban and suburban areas of the country and among the needy inhabitants in large cities, intensive mass disinsectization programs have been carried out in large population centers, with preference given to the poorer districts, Indian settlements, and closed institutions where people may carry parasites. Aside from the large number of garments and beds that were treated, over one-half million persons and 140,000 dwellings were disinsected in 1951. After a slight decrease in activities in 1952, the work was intensified in the following year, when about 758,000 persons and 419,000 dwellings, together with some one-half million beds and four and one-half million garments were disinsected. In the rural and mountainous sectors of the provinces of Santiago, Valparaiso, and Aconcagua, the disinsectization work carried out against the Triatoma infestans with the use of gammexane, Dieldrin, and other drugs, covered an average of 1,700 dwellings per year, with 500,000 square meters treated.
Colombia	Control of Anopheles and Aëdes aegypti throughout the Republic affords protection to 30% of the population in affected areas.
Costa Rica	This type of program is limited to DDT campaigns in malaria zones and to the control of Aëdes aegypti.
Cuba	In the 126 "Municipal Districts" into which the country is divided for public health purposes, a campaign is being conducted for the control of mosquitoes, flies and other insects, as well as for rat control.

TABLE 50

PROGRAM FOR INSECT VECTOR CONTROL IN 15 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Dominican Rep.	An insect control program (Anopheles and Aëdes aegypti) has been carried on since 1943; this program has the assistance of the Pan American Sanitary Bureau and UNICEF. The insecticide used is DDT. The work teams periodically spray houses located in the urban and rural areas and all possible mosquito reservoirs.
El Salvador	The Vector Control Service has participated in the Antimalaria Campaign by carrying out house spraying with DDT, beginning with the hyper-endemic zone of the country and expanding the work area each year. Summary figures covering the campaign from 1950 through 1952 are briefly as follows: Two DDT sprayings per year were applied to 19,056 houses in 138 localities during 1952; the corresponding figures for 1951 were much higher, i.e. 31,082 houses in 260 localities. In 1952, a single yearly DDT treatment was applied to 118,056 houses in 932 localities, which represented an increase in activities over 1951.
Haiti	Program for the eradication of Aëdes aegypti and Anopheles.
Honduras	Vector control with the use of DDT.
Mexico	Onchocerciasis (Simuliidae). Fortnightly application of insecticides in waterways of the infected zone. Gammexane P-500 during 15 consecutive days. Epidemic typhus (Lice). Application of residual insecticides throughout the country, especially in rural areas, basic importance being given to changes in noxious habits. Murine typhus (Fleas). Increased use of residual-type modern raticides and antiflea insecticides. Construction of rat-proof buildings. Spotted fever (Ticks). Educational program for the application or residual antitick insecticides in dwellings in Coahuila, Nuevo Leon, Tamaulipas, Zacatecas, and Durango. Study of other possible vectors. Malaria (Anopheles). Application of anti-Anopheles methods (against adults and larvae), sanitary engineering measures, and health education. Use of DDT and other residual-action insecticides in the neotropical region and in the principal malaria foci in the neartic region. Study of the biology of mosquitoes in different areas of the country. Yellow fever (Aëdes aegypti). Application of residual-action insecticides in Campeche, Colima, Michoacan, Chiapas, Guerrero, Nuevo Leon, Tabasco, Tamaulipas, Sinaloa, Veracruz, and Yucatan. Surveillance at seaports by the antilarva services.
Panama	Included in the general plan of work of the health units, with assistance given by the Antimalaria Campaign.

TABLE 50

PROGRAM FOR INSECT VECTOR CONTROL IN 15 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
Peru	The Communicable Disease Division of the National Department of Public Health, through the Vector Control Department, carries on a nation-wide campaign for the eradication of Anopheles and for the control of plague.
United States	In its environmental health program, the Public Health Service conducts a special campaign to determine how diseases are transmitted, what are the specific and important vectors, and what are the best practical methods for controlling the vectors. Research laboratories gather facts about disease, vectors, and controls; next, research laboratory findings are listed on a small scale in field studies; third, if the findings prove sound, they are broadened into large-scale control operations carried on by state and local health departments.
Venezuela	The Anopheles control work is conducted by the Malariology Division. The figures reached in 1953 were 548,304 houses (87% of the total in the malaria zone) and 2,172,500 persons protected with residual-action insecticides. The Aëdes aegypti control work under the Division of Malariology was extended to 296 localities in the non-malarious zones, and only 8 localities remained positive for this vector at the end of 1953. The Malariology Division also has undertaken an extensive campaign against Triatomidae with the use of Dieldrin. Rodent control is entrusted to two Divisions. The first, the Yellow Fever Division, conducts activities in the sylvatic plague zone, where 869 kilograms of 10% DDT and 350 kilograms of bait with Warfarin were used in 1953. The Malariology Division, operating outside the plague zone, carries on campaigns against domestic rodents.

TABLE 51

STATUS OF THE HOUSING PROGRAM IN 14 COUNTRIES OF THE AMERICAS

Country	Status of Program
Bolivia	Although the 1950 census figures on the number of home-owning inhabitants are not yet available, the figure is estimated to be between 80 and 90%. Houses range from the most primitive type, in the rural tropical area, to the most modern styles. The Federal Government, through the Social Security Funds, is endeavoring to raise housing standards by constructing low-cost units in populated centres for the benefit of laborers and persons in low-income brackets.
Brazil	Proper house construction is a problem attended to by the municipal authorities. The question of habitability of houses is the concern of the state services, which, through the Health Posts and Centres, make inspections and issue permits to new occupants, when houses have undergone alterations to meet sanitary regulations. The license granted usually bears the title "For Occupancy." The same license is required for new constructions, which are passed for occupancy after inspection by the local sanitary authorities. Such requirements are less strict in rural areas because of the special conditions found in that environment. (Condensed from the Report to the XIV PASC, page 88.)
Chile	Support and advisory services are given for the improvement or renovation of rural housing in the Provinces of Aconcagua, Valparaiso, and O'Higgins. Nation-wide surveys of crowded temporary housing centres are undertaken with a view to solving the problem of housing for needy people. Coopération is given in the programs of the Housing Corporation, a body that carries out town development projects.
Colombia	Sanitation and control at the local level.
Costa Rica	Housing sanitation comes under the supervision of the sanitary inspectors, but there is little activity in this field. The Engineering Department reviews plans for new urban constructions from the sanitary point of view.
Cuba	The sanitary inspectors maintain surveillance over sanitary conditions in urban dwellings, especially apartment buildings. In the case of rural housing, efforts are being made to have dwellings meet the minimum sanitary requirements, such as cement floors, potable water, sanitary privies, etc.
Dominican Rep.	The Sanitary Engineering Service of the Public Health Section is responsible for reviewing all construction plans in the country for the following sanitary points, as required by present health legislation: ventilation of dwellings; area of dwellings; area of yards; sanitary installations; final inspection.
El Salvador	In its three years' existence, the Urban Housing Institute, with state funds, has constructed an average of 1,000 houses per year, including the "Worker" type, "Low Income" type, and some schools, markets, and "Residential" type houses, all of which were turned over to the future occupants to be paid for in monthly installments over a 20-year period. The Rural Colonization Institute in the past two years has

TABLE 51

STATUS OF THE HOUSING PROGRAM IN 14 COUNTRIES OF THE AMERICAS
(Continued)

Country	Status of Program
El Salvador (Cont.)	built 3 schools, 3 civic centres, and 120 houses for rural dwellers. During 1953, some 500 permits were granted for the construction of privately-owned houses in the capital city and another 500 for constructions in other principal cities. These constructions ranged from the smallest dwellings to commercial buildings with several stories. No statistics are available on houses for rural dwellers built by private enterprise during 1953.
Haiti	Construction of housing developments for workers in Port-au-Prince and Gonaives.
Mexico	The most complete housing survey was made in Mexico City in 1952, with the dwellings classified as follows: huts 13%; cabins 10%; worker type 21%; decadent 21%. The hut and cabin type dwellings are considered to require over-all improvement and the worker and decadent type to need partial improvement. The 1940 census figures on dwellings in the country showed that 45% are huts, cabins, or shanties, and that 72% lack water service.
Panama	Included in the general plan of activities of the health units.
Peru	The housing shortage is felt strongly in all state capitals because of the influx of country dwellers into the main cities. This has given rise to a problem of unhealthful neighborhoods which the Government is now endeavoring to correct. The National Housing Corporation and the Public Health Ministry, through the National Health and Welfare Fund, have begun the large-scale construction of Neighborhood Units, or low-cost housing developments, to alleviate the serious health problem resulting from the growth of these unhealthful districts in the suburbs of the capitals.
United States	The Public Health Service is concerned with the environmental effects of shelter on communicable disease, on chronic disease, on safety, and on mental health. Studies of design, structure, lighting, heating, ventilation, and sanitation of housing, undertaken by more than 50 universities and privately endowed institutions, help in the attack on these problems. It is estimated that approximately 100 health departments have programs concerned primarily with the hygiene of housing. There are also demonstration programs in home accident prevention carried on by eight state health departments and four local health departments on a cooperative, private, federal, state, local basis.
Uruguay	In the period 1950-1953 the National Institute for Low-Cost Housing constructed 811 dwellings and completed several studies and experiments designed to lower the cost of the constructions. On an experimental basis it built 200 prefabricated houses. The Institute has also been seeking how to help the rural laborer and his family to build their dwelling themselves.