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SUMMARY OF  
FOUR-YEAR REPORTS ON  
**HEALTH CONDITIONS**  
IN THE AMERICAS

PREPARED FOR  
**THE XV PANAMERICAN SANITARY CONFERENCE**

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**PAN AMERICAN SANITARY BUREAU  
REGIONAL OFFICE OF THE  
WORLD HEALTH ORGANIZATION**

**WASHINGTON, D.C.**

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## PREFACE

The Pan American Sanitary Code and the Constitution of the Pan American Sanitary Organization provide for the exchange of information regarding the prevention of disease and preservation of health in the Western Hemisphere. For the Pan American Sanitary Conferences which are held every four years the Member States have provided reports of health conditions during the preceding four years. For the XIV Pan American Sanitary Conference held in Chile in 1954 the reports received from the National Health Services of the countries were combined and a summary of health conditions in the Americas<sup>(a)</sup> was presented to the Conference, Summary of Reports of the Member States 1950-1953. This Conference passed Resolution XXIV which stated that the report was "a valuable document for providing knowledge of the health problems of the Americas and for coordinating health programs, inasmuch as it contains statistical data on population, births, deaths, cases of communicable diseases, personnel and organization of health services and description of programs;..." and recommended that the Member States "agree to increase the statistical information that their reports to the next Pan American Sanitary Conference should contain..."

The Report for the XIV Conference showed that nearly all of the countries and other areas of the Americas had very young populations and that health programs would be directed principally to the problems of infancy, childhood and young adult life. In many of the areas over 40 per cent of the population was under 5 years of age. Therefore it seemed desirable that the report for the XV Conference give emphasis to the problems in infancy and childhood and to maternal and child health programs. Thus the present report has been extended to include a chapter on this subject. The information provided here has strengthened the conclusions regarding the importance of these health problems.

During the four-year period increasing attention has been given by the Governing Bodies of the Organization to national health planning and to the organization and financing of central and local health services. As a result more adequate information is provided regarding health services, medical and other health personnel and hospital facilities in this present report.

The Ninth World Health Assembly, in Resolution WHA 9.27 invited the Member Countries to prepare a report covering the period 1954-1956. For the countries of the Americas, the reports prepared for the XV Pan American Sanitary Conference are to serve also to meet the needs of the World Health Organization. However, in order to enable Headquarters of WHO to prepare a report on the world health situation for presentation to the Eleventh World Health Assembly in May 1958 it was necessary to request that the various countries transmit the reports by 1 September 1957. Therefore, it was impossible to obtain vital statistics and reports of communicable diseases for the 4-year period 1954-1957 and such data are given in this report for the 4 years 1953-1956. However, certain information on health personnel and health services are provided for 1957. The data, therefore, are not strictly for a given four-year period but provide the data given by the National Health Services in their Four-Year Reports.

The great progress being made in health work can be viewed by study of the data in this present report and in the previous reports prepared in the National

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(a) Additions and minor corrections were made after the Conference and the report was released as Summary of Reports on the Health Conditions in the Americas, 1950-1953, Scientific Publications No. 25, Pan American Sanitary Bureau, June 1956.

Health Services for the Conferences. Considerable progress has been made in the quality of the data reported especially in the field of vital statistics and communicable disease. There is also evidence of progress in many countries in other aspects of the programs for the protection, promotion and restoration of health reported for the first time here. Outstanding additional information concerns the development of local health services of which the strengthening is the ultimate goal of international collaboration.

In 1955 the VIII Directing Council adopted the Program of Work<sup>(b)</sup> for the period of 1957-1960 which stressed the inventory of national health conditions and resources for presentation at the XV Pan American Sanitary Conference, preparation of national health plans, establishment of a professional public health career with full-time employment and adequate salaries, intensification of programs for eradication of communicable diseases, and concentration of efforts to eliminate major health hazards, especially those related to environmental conditions. This present report through its inventory of national health conditions enables administrators to consider the priority of specific health problems in the Americas. As the eradication programs reach completion, through a coordinated program efforts should be concentrated on the establishment of the public health career, on improvement of environmental conditions and on national health planning.

(b) Proceedings of the VIII Meeting of the Directing Council of the Pan American Sanitary Organization and VII Meeting of the Regional Committee of the World Health Organization for the Americas, CD8/12.

#### EXPLANATION OF SYMBOLS

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

## ERRATA

At the request of the Government of the Dominican Republic the data of cases of notifiable diseases included in this report are withdrawn as they were found to be inaccurate.

At the request of the Government of Venezuela the following corrections should be noted in Table 9:

Total deaths with medical certification to read 52,584 instead of 37,833 and total deaths without medical certification to read 6,785 instead of 21,536; for "Senility, ill-defined and unknown" (780-795), deaths with medical certification to read 16,003 instead of 1,252 and deaths without medical certification to read 6,402 instead of 21,153.

Additions to the index should be made as follows:

	Page
Dominica .....	61, 93
Dominican Republic .....	72, 75, 90

## CHAPTER I

### General Vital Statistics

For measurement of health conditions, vital statistics data are essential. In this chapter birth and death rates and death rates from specific causes are given to provide basic data for health planning. Since it is necessary to consider the population served by health agencies and also to use populations as the denominators for rates, the estimated populations for the period covered are presented first.

#### ESTIMATED POPULATIONS

The previous four-year report<sup>(a)</sup> provided population figures as given in the latest census taken in or around 1950. Census data were presented by age group and for urban and rural areas. Although there were variations in the age compositions, nearly all of the countries and several of the other areas of the Americas had a very young population with only a small proportion of the population in the older age groups. Thus health programs would be directed principally to problems of infancy, childhood and young adult life.

The statistical offices of the countries provide population estimates routinely to the United Nations which are published currently in the Demographic Yearbook, Statistical Yearbook and Monthly Bulletin of Statistics. Thus efforts have been made to utilize these estimates of population. However, in a few instances the estimates provided by the National Health Services differed sufficiently to justify using their estimates on the basis that such estimates were considered the most accurate to use in relation to the data on health conditions which they provided also.

These estimates of population have been used to obtain the total population of the Americas and of the three regions,<sup>(b)</sup> Northern, Middle and South America on July 1, 1957 (Table 1). The total estimated popula-

tion included in the region of the Americas was approximately 376,739,000. Of this population 187,179,000 lived in Northern America (Alaska, Bermuda, Canada, the United States, St. Pierre and Miquelon, and Greenland), and 61,569,000 in Middle America (the remainder of North America including the Caribbean). The population of the entire continent of South America of 127,991,000 constituted one-third of the total population of the Americas.

TABLE 1. ESTIMATED POPULATION ON JULY 1, 1950 AND JULY 1, 1957, AND INCREASE IN 7 YEARS IN 3 REGIONS IN THE AMERICAS

Region	July 1, 1950	July 1, 1957	Increase	Per cent
Total	326,224,000	376,739,000	50,515,000	15.5
Northern America	165,124,000	187,179,000	22,055,000	13.4
Middle America	51,404,000	61,569,000	10,165,000	19.8
South America	109,696,000	127,991,000	18,295,000	16.7

Estimates comparable to those for July 1, 1957 are given for July 1, 1950 in order to obtain the estimated growth of population since 1950, which was slightly more than 50 million. The estimated percentage increases are greater for Middle and South America than for Northern America.

The estimated populations for the countries and other areas of the Americas for the 5 years, 1953-1957 which are used as the basis of rates in the various chapters of this report are given in Table 2.

Estimated populations are also needed for calculation of death rates in childhood. Since estimates were not provided for some of the countries and other areas it seemed advisable to apply the percentage distribution from the recent census to the estimated populations for all ages given in Table 2. Estimated populations for the 3 age groups, 1-4 years, 5-9 years and 10-14 years used in this report are given in Appendix Table A.

(a) Summary of Reports on the Health Conditions in the Americas, 1950-1953, Scientific Publications No. 25, Pan American Sanitary Bureau, June 1956.

(b) The division into three regions is in accordance with that of United Nations, with the addition of Hawaii assigned to the region of Americas by the World Health Organization.

TABLE 2. ESTIMATED POPULATION IN THE AMERICAS ON JULY 1, 1953-1957

Area	1953	1954	1955	1956	1957
Argentina	18,400,212	18,754,101	19,118,469	19,485,869	19,857,654
Bolivia	3,125,262	3,161,510	3,198,168	3,235,251	3,272,764
Brazil(a)	55,772,154	57,098,171	58,455,130	59,845,556	61,268,423
Canada(b)	14,820,000	15,260,000	15,669,000	16,049,288	16,558,000
Chile	6,315,000	6,407,000	6,498,000	6,589,000	6,681,000
Colombia	12,111,260	12,381,160	12,657,070	12,939,140	13,227,480
Costa Rica	881,313	914,717	951,093	987,778	1,035,200
Cuba	5,880,588	6,004,609	6,131,255	6,260,918	6,392,964
Dominican Republic	2,356,476	2,437,602	2,521,521	2,608,329	2,698,126
Ecuador(c)	3,501,716	3,566,717	3,690,820	*3,795,651	*3,890,000
El Salvador	2,053,992	2,121,869	2,193,122	2,268,464	2,350,201
Guatemala	3,058,339	3,158,694	3,258,010	3,348,347	3,429,600
Haiti	3,226,668	3,265,468	3,304,564	3,344,018	3,383,762
Honduras	1,555,664	1,607,668	1,659,834	1,711,449	1,770,000
Mexico	28,056,361	28,853,428	29,679,415	30,538,050	31,426,190
Nicaragua	1,165,522	1,204,336	1,245,440	1,288,007	1,331,322
Panama(d)	813,800	837,140	861,100	885,700	911,100
Paraguay	1,496,000	1,530,000	1,565,000	1,601,000	1,638,000
Peru	7,992,500	8,151,700	8,314,500	8,552,000	8,805,000
United States(e)	158,313,000	161,191,000	164,303,000	167,259,000	170,333,000
Uruguay	2,535,319	2,579,165	2,614,775	2,649,957	# 2,690,000
Venezuela	5,376,750	5,508,763	5,640,797	5,772,790	5,904,803
Alaska	205,000	208,000	209,000	206,000	# 214,000
Bahama Islands	85,328	89,628	95,489	107,509	# 120,000
Barbados	220,545	224,974	228,897	228,209	230,506
Bermuda(f)	39,352	40,096	40,850	41,624	42,407
British Guiana(g)	441,090	453,790	466,980	* 480,280	* 495,000
British Honduras	74,610	77,008	79,706	81,779	83,590
Canal Zone(h)	42,049	38,953	38,953	37,294	36,665
Falkland Islands(i)	2,225	2,216	2,200	2,276	# 2,000
French Guiana	* 28,000	27,863	28,700	*29,300	#29,000
Guadeloupe	223,000	229,120	236,900	244,500	# 250,000
Hawaii(h)	475,000	484,000	503,000	526,000	550,000
Jamaica	1,486,100	1,517,700	1,541,700	1,563,700	1,594,000
Leeward Islands					
Antigua	48,892	50,076	51,917	53,341	54,800
Montserrat	13,272	13,700	14,300	14,378	# 17,000
St. Kitts-Nevis-Anguilla(j)	51,555	52,827	53,964	54,831	# 54,000
Virgin Islands	7,375	7,525	7,680	7,680	7,760
Martinique	234,000	239,130	246,800	253,000	# 255,000
Netherlands Antilles	178,229	181,116	182,469	185,162	# 190,000
Puerto Rico	2,213,000	2,229,000	2,263,000	*2,267,000	*2,280,000
St. Pierre and Miquelon	4,812	4,874	4,900	** 4,900	4,879
Surinam(k)	200,500	207,000	213,500	221,000	# 230,000
Trinidad and Tobago	678,300	697,550	720,800	742,500	764,900
Virgin Islands (USA)	27,000	24,000	24,000	# 24,000	# 24,000
Windward Islands					
Dominica	58,078	60,267	62,242	# 62,000	# 62,000
Grenada	83,047	85,300	88,215	# 90,000	# 94,000
St. Lucia	83,885	85,516	87,185	89,006	# 91,000
St. Vincent	72,121	73,486	75,958	77,669	# 80,000

\* Provisional. \*\* PASB estimate. # United Nations estimate.

(a) Excluding Indian jungle population numbering 45,429 at 1950 census.

(b) June 1 estimates excluding Yukon and Northwest Territories. 1956 shows census figure for that year.

(c) De jure estimates.

(d) Excluding tribal Indian population.

(e) Excluding armed forces overseas.

(f) Resident civilian population.

(g) Excluding Amerindians estimated as 20,099 as of December 31, 1956.

(h) Civilian population only, excluding armed forces.

(i) Excluding data for dependencies.

(j) Mean population.

(k) Excluding Indian and Negro population living in tribes estimated at 20,880 in 1956.

## BIRTHS AND DEATHS

The interpretation of birth and death rates requires knowledge of the definitions and procedures followed in the registration systems as well as conditions in the countries. The Handbook of Vital Statistics Methods<sup>(c)</sup> of United Nations provides valuable information regarding the systems in operation as well as recommended statistical standards. Efforts are being made constantly by national and international agencies to bring uniformity into vital statistics systems. Not only are there variations in definitions and procedures but also the completeness of registration varies widely. In this report data are included only for areas for which an estimated population was available for the same area. Birth and death rates are so low for certain areas that obviously registration is incomplete. Thus persons utilizing the data provided must be aware of the registration problems and the lack of comparability of the data. However, the data serve to show some of the problems and the needs in terms of improvement of vital statistics systems as well as in terms of health programs.

The numbers of live births with rates per 1,000 population are given in Table 3 for 20 countries and 22 other areas of the Americas. In general the birth rates are high; in 1955 in nearly one-half of them the rates are 40 per 1,000 population or higher. In several such as in Paraguay the rates are considerably lower than expected, due to incompleteness of registration. In some of the areas, certificates of birth for infants dying soon after birth are not included and thus the data are incomplete due to this factor. According to the internationally recommended definition,<sup>(d)</sup> every product of conception which shows any evidence of life after birth is to be recorded as a live birth.

The numbers of deaths were provided for one or more of the years 1953-1956 for 21 countries and 22 other areas of the Americas (Table 4). The wide variation in these death rates indicates considerable variation in

completeness of registration as well as in health conditions. Although in a few areas such as the Canal Zone an unusual age distribution probably accounts for the low rate, in general low death rates such as those in Paraguay and Netherlands Antilles are probably due to the failure to have many deaths registered. Efforts must continue to be placed on improvement of registration in order to provide satisfactory information regarding the size of health problems.

## SPECIFIC CAUSES OF DEATH

For most of the Americas, information regarding causes of death from death certificates is the best source of data on specific health problems. Data were provided by 20 countries and 14 other areas for specific causes of death for 1956 or an earlier year if data for 1956 were not available. Causes of death were given in accordance with the Abbreviated List of the International Classification of Diseases<sup>(e)</sup> with a few modifications. Certain additional causes were needed for study of health problems in the Americas since many communicable diseases are important causes of death and need to be considered in health planning. Data on such causes as leprosy, tetanus, yaws and yellow fever were deemed essential. Also malnutrition is known to be an important health problem in many areas and although deaths due to malnutrition may be included in ill-defined diseases of early infancy or in ill-defined causes the group, avitaminoses and other metabolic diseases, provides some information regarding this important health problem. The numbers of deaths from specific causes are given in Table 5 and the death rates per 100,000 population in Table 6 for countries and other areas for which satisfactory information was available. In considering the specific causes of deaths it is important to note the number of deaths due to senility, ill-defined and unknown causes (780-795) and to the residual groups. Irrespective of variations in the completeness of registration and lack of comparability, death rates

(c) Handbook of Vital Statistics Methods, Studies in Methods, Series F, No. 7, United Nations, New York, April 1955.

(d) Official Records, No. 28, World Health Organization, Geneva, 1950.

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

TABLE 3. NUMBER OF LIVE BIRTHS WITH RATES PER 1,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	459,734	25.0	452,870	24.1	458,196	24.0	464,197	23.8
Bolivia .....	117,447	37.6	*106,411	33.7	...	...	...	...
Brazil (a) .....	164,460	29.9	179,994	31.7	179,003	30.7	180,721	30.1
Canada (b).....	416,825	28.1	435,142	28.5	441,681	28.2	449,473	28.0
Chile .....	240,142	38.0	240,441	37.5	237,571	36.6	252,093	38.3
Colombia .....	471,019	38.9	474,585	38.3	511,011	40.4	538,485	41.6
Costa Rica .....	47,469	53.9	48,157	52.6	48,903	51.4	51,481	52.1
Dominican Republic .....	95,052	40.3	103,010	42.3	104,840	41.6	...	...
Ecuador (c).....	...	...	153,718	43.1	166,977	45.2	...	...
El Salvador .....	98,474	47.9	102,009	48.1	105,040	47.9	106,539	47.0
Guatemala .....	156,337	51.1	162,773	51.5	158,856	48.8	...	...
Honduras .....	65,591	42.2	67,413	41.9	71,533	43.1	...	...
Mexico .....	1,261,775	45.0	1,339,837	46.4	1,377,917	46.4	...	...
Nicaragua .....	49,367	42.4	51,203	42.5	51,940	41.7	52,626	40.9
Panama .....	31,428	38.6	33,074	39.5	34,469	40.0	36,004	40.7
Paraguay (d) .....	27,194	18.2	24,474	16.0	20,545	13.1	22,063	13.8
Peru .....	287,426	36.0	300,417	36.9	...	...	...	...
United States .....	3,902,120	24.6	4,017,362	24.9	4,047,295	24.6	4,168,000	24.9
Uruguay .....	47,464	18.7	49,888	19.3	...	...	...	...
Venezuela .....	250,942	46.7	262,134	47.6	271,647	48.2	277,823	48.1
Alaska (e).....	6,780	33.1	7,039	33.8	7,348	35.2	7,615	37.0
Bahama Islands .....	3,056	35.8	3,410	38.0	2,844	29.8	3,290	30.6
Barbados .....	7,304	33.1	7,576	33.7	7,593	33.2	7,082	31.0
Bermuda .....	1,026	26.1	1,112	27.7	1,052	25.8	1,169	28.1
British Guiana .....	19,445	44.1	19,449	42.9	20,185	43.2	20,300	42.3
British Honduras .....	2,986	40.0	3,231	42.0	3,463	43.4	3,725	45.5
Canal Zone .....	1,393	33.1	1,233	31.7	1,225	31.4	1,132	30.4
French Guiana .....	...	...	...	...	...	...	966	33.0
Guadeloupe .....	8,732	39.2	8,938	39.0	9,525	40.2	9,706	39.7
Hawaii .....	16,103	33.9	16,191	33.5	16,305	32.4	17,135	32.6
Jamaica .....	51,131	34.4	53,630	35.3	55,881	36.2	58,265	37.3
Leeward Islands								
Antigua .....	1,687	34.5	1,660	33.1	1,880	36.2	1,917	35.9
St. Kitts-Nevis-Anguilla .....	1,964	38.1	2,226	42.1	2,494	46.2	2,418	44.1
Virgin Islands .....	317	43.0	305	40.5	290	37.8	318	41.4
Martinique .....	9,495	40.6	9,276	38.8	9,527	38.6	9,800	38.7
Netherlands Antilles .....	5,861	32.9	5,798	32.0	5,770	31.6	5,793	31.3
Puerto Rico .....	77,380	35.0	78,008	35.0	79,221	35.0	77,384	34.1
Trinidad and Tobago .....	25,565	37.7	29,253	41.9	30,216	41.9	27,447	37.0
Virgin Islands (USA).....	871	32.3	881	36.7	931	38.8	971	40.5
Windward Islands								
Dominica .....	2,113	36.4	2,345	38.9	2,543	40.9	2,416	39.0
St. Lucia .....	3,069	36.6	3,090	36.1	3,549	40.7	3,571	40.1
St. Vincent .....	3,069	42.6	3,117	42.4	3,607	47.5	3,601	46.4

\*Provisional.

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico*, Vol. 2, Nº 3 (October 1957).

(d) Incomplete registration.

(e) Data not corrected for residence.



TABLE 4. NUMBER OF DEATHS WITH RATES PER 1,000 POPULATION IN THE AMERICAS,  
1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	162,217	8.8	153,628	8.2	164,647	8.6	159,191	8.2
Bolivia .....	45,309	14.5	* 35,575	11.3	...	...	...	...
Brazil (a) .....	62,663	11.4	65,889	11.6	67,944	11.6	71,158	11.9
Canada (b).....	127,381	8.6	124,520	8.2	128,154	8.2	131,585	8.2
Chile .....	77,278	12.2	84,635	13.2	87,386	13.4	83,744	12.7
Colombia .....	163,653	13.5	150,853	12.2	161,863	12.8	171,984	13.3
Costa Rica .....	10,312	11.7	9,713	10.6	9,988	10.5	9,518	9.6
Cuba .....	37,160	6.3	35,712	5.9	37,264	6.1	36,321	5.8
Dominican Republic .....	20,551	8.7	20,599	8.5	22,864	9.1	...	...
Ecuador (c).....	...	...	56,615	15.9	57,226	15.5	...	...
El Salvador .....	30,280	14.7	31,810	15.0	31,151	14.2	28,127	12.4
Guatemala .....	70,794	23.1	58,132	18.4	67,088	20.6	...	...
Honduras .....	18,166	11.7	17,966	11.2	18,887	11.4	...	...
Mexico .....	446,127	15.9	378,752	13.1	407,522	13.7	...	...
Nicaragua .....	11,317	9.7	10,860	9.0	10,160	8.2	9,792	7.6
Panama .....	7,638	9.4	7,511	9.0	8,023	9.3	8,268	9.3
Paraguay (d) .....	6,747	4.5	6,829	4.5	7,331	4.7	7,260	4.5
Peru .....	97,196	12.2	95,506	11.7	...	...	...	...
United States .....	1,517,541	9.6	1,481,091	9.2	1,528,717	9.3	1,565,000	9.4
Uruguay .....	19,408	7.7	19,153	7.4	20,611	7.9	...	...
Venezuela .....	53,925	10.0	56,978	10.3	58,959	10.5	59,369	10.3
Alaska (e) .....	1,303	6.4	1,194	5.7	1,204	5.8	1,225	5.9
Bahama Islands .....	1,035	12.1	973	10.9	957	10.0	921	8.6
Barbados .....	2,997	13.6	2,544	11.3	2,887	12.6	2,430	10.6
Bermuda .....	333	8.5	307	7.7	337	8.2	337	8.1
British Guiana .....	5,876	13.3	5,635	12.4	5,557	11.9	5,358	11.2
British Honduras .....	820	11.0	876	11.4	858	10.8	821	10.0
Canal Zone (f).....	230	5.5	266	6.8	176	4.5	155	4.2
French Guiana .....	...	...	...	...	...	...	412	14.1
Guadeloupe .....	2,960	13.3	2,694	11.8	2,781	11.7	2,477	10.1
Hawaii (g) .....	2,852	6.0	2,955	6.1	3,105	6.2	3,085	5.9
Jamaica .....	15,442	10.4	16,302	10.7	15,273	9.9	14,866	9.5
Leeward Islands								
Antigua .....	599	12.3	532	10.6	516	9.9	497	9.3
St. Kitts-Nevis-Anguilla.....	683	13.2	589	11.1	666	12.3	602	11.0
Virgin Islands .....	85	11.5	78	10.4	74	9.6	87	11.3
Martinique .....	2,455	10.5	2,488	10.4	2,558	10.4	2,381	9.4
Netherlands Antilles (d).....	718	4.0	840	4.6	857	4.7	777	4.2
Puerto Rico .....	17,966	8.1	16,871	7.6	16,243	7.2	16,592	7.3
Trinidad and Tobago .....	7,262	10.7	6,807	9.8	7,462	10.4	7,136	9.6
Virgin Islands (USA).....	279	10.3	301	12.5	318	13.3	357	14.9
Windward Islands								
Dominica .....	788	13.6	759	12.6	870	14.0	925	14.9
St. Lucia .....	1,156	13.8	1,028	12.0	1,034	11.9	1,127	12.7
St. Vincent .....	1,127	15.6	1,125	15.3	1,102	14.5	937	12.1

\*Provisional.

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico*, Vol. 2, Nº 3 (October 1957).

(d) Incomplete registration.

(e) Data not corrected for residence.

(f) Population has high proportion of young adults.

(g) Civilian population only.

TABLE 5. NUMBER OF DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS, 1956

Cause*	Argentina	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Dominican Republic	Ecuador
	(a)	(a)	(b)	(c)				(d)	(d,e)
Total deaths	162,217	45,309	71,158	131,585	83,744	171,984	9,518	22,864	57,226
Tuberculosis, all forms . . . . .001-019	5,399	1,739	4,026	1,228	4,129	3,487	198	768	1,213
Syphilis and its sequelae . . . . .020-029	528	77	547	209	141	297	35	194	71
Typhoid fever . . . . .040		209	94	9	149	561	16	182	936
Paratyphoid fever and other	185								
Salmonella infections . . . . .041,042		17	3	7	18	56	6	...	35
Dysentery, all forms . . . . .045-048	27	848	466	29	85	702	51	149	287
Scarlet fever and streptococcal sore throat . . . . .050,051	15	846	5	24	14	10	2	-	5
Diphtheria . . . . .055	99	55	151	8	143	392	26	92	117
Whooping cough . . . . .056	257	5,119	224	116	354	3,946	88	144	8,068
Meningococcal infections . . . . .057	24	3	113	84	37	31	4	1	12
Plague . . . . .058	-	120	-	-	-	-	-	-	85
Leprosy . . . . .060	43	8	54	1	-	117	4	...	3
Tetanus . . . . .061	...	85	522	5	56	352	190	...	708
Yaws . . . . .073	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	179	1	72	51	87	74	8	-	33
Smallpox . . . . .084	-	1,326	24	-	1	157	-	-	219
Measles . . . . .085	115	534	241	162	452	2,697	72	109	2,720
Yellow fever . . . . .091	-	20	-	-	-	14	-	-	k) 2
Rabies . . . . .094	8	3	22	-	4	30	-	-	36
Louse-borne epidemic typhus . . . . .100	-	34*	-	-	6	12	-	-	15
Typhus, other forms . . . . .101-108	15	226	3	1	3	895	1	-	8
Malaria . . . . .110-117	7	519	75	-	-	1,639	111	848	1,411
Infestation by helminths . . . . .123-130	...	12	...	...	66	4,263	291	...	402
All other infective and parasitic diseases									
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	1,474	464	995	366	392	983	72	1,771	461
Malignant neoplasms, etc. . . . .140-205	21,374	266	6,385	20,853	6,602	5,438	747	474	1,024
Benign and unspecified neoplasms . . . . .210-239	989	37	221	356	185	1,311	39	121	89
Diseases of thyroid gland . . . . .250-254	...	3	44	129	17	37	1	...	8
Diabetes mellitus . . . . .260	1,487	8	791	1,819	407	425	69	48	61
Avitaminoses and other metabolic diseases . . . . .280-289	...	1,412	348	182	378	4,055	85	...	187
Anaemias . . . . .290-293	241	1,319	111	355	113	2,574	153	320	744
Vascular lesions affecting central nervous system . . . . .330-334	11,903	208	3,725	14,443	4,242	3,079	296	277	438
Nonmeningococcal meningitis . . . . .340	1,293	247	356	242	457	2,015	55	155	235
Rheumatic fever . . . . .400-402	...	10	260	109	263	81	22	1	32
Diseases of the heart . . . . .410-443	2,049	12,708	43,949	8,014	9,576	665	1,346	1,550	1,550
Arteriosclerosis . . . . .450	33,086	16	1,337	2,344	836	583	50	...	116
Other diseases of circulatory system . . . . .444-447,451-468	...	90	1,057	2,076	944	950	66	127	255
Influenza and pneumonia . . . . .480-483,490-493	9,014	4,408	5,016	5,688	14,779	12,049	554	848	3,462
Bronchitis . . . . .500-502	742	706	312	719	299	7,035	206	739	5,724
Other diseases of respiratory system . . . . .470-475,510-527	...	2,045	902	1,423	597	1,033	63	...	396
Ulcer of stomach and duodenum . . . . .540,541	289	24	290	777	262	587	36	18	94
Appendicitis . . . . .550-553	201	15	82	188	70	191	6	18	24
Intestinal obstruction & hernia . . . . .560,561,570	670	171	405	834	454	624	51	68	397
Gastritis, enteritis, etc. . . . .543,571,572	3,014	1,771	9,421	905	5,645	15,638	1,221	2,645	3,928
Other diseases of digestive system . . . . .530-539	...	2,831	1,531	1,991	2,857	7,137	235	98	1,200
542,544,545,573-587	3,589	159	1,257	2,143	781	2,355	102	174	407
Nephritis and nephrosis . . . . .590-594	...	120	588	1,379	319	358	44	1	93
Other diseases of genito-urinary system . . . . .600-637	...	120	588	1,379	319	358	44	1	93
Complications of pregnancy, childbirth and puerperium . . . . .640-689	513	534	519	275	774	1,673	90	129	511
Congenital malformations . . . . .750-759	12,374	4	908	2,829	566	1,054	114	118	108
Certain diseases of early infancy . . . . .760-776	...	567	5,761	7,509	10,779	15,137	1,001	2,815	3,726
Senility, ill-defined and unknown . . . . .780-795	24,509	11,743	1,255	1,767	1,135	41,345	1,665	5,166	12,511
All other diseases . . . . .Residual	20,061	1,008	3,287	3,369	2,334	3,328	283	2,321	1,274
Accidents . . . . .E800-E962	...	474	2,937	9,226	3,709	6,300	355	403	...
Suicide and self-inflicted injury . . . . .E963,E970-E979	8,493	36	1,075	1,218	606	114	26	77	1,785
Homicide and operations of war . . . . .E964,E965,E980-E999	...	763	632	188	1,183	5,187	43	99	...

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(d) Year 1955.

(b) Federal District and seven State capitals.

(e) Data from *Boletín Estadístico*, Vol. 2, Nº 3 (October 1957).

(c) Excluding Yukon and Northwest Territories.

(k) Data not confirmed.

TABLE 5. NUMBER OF DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS, 1956\* (Continued)

Cause*	El Salvador (d)	Guatemala (d)	Honduras (f)	Mexico (d)	Nicaragua	Panama	Paraguay (g)	Peru (a)	United States (d)
Total deaths	31,151	67,088	18,471	407,522	9,792	8,268	7,260	97,196	1,528,717
Tuberculosis, all forms . . . . .001-019	456	1,311	251	7,708	88	292	242	5,825	14,940
Syphilis and its sequelae . . . . .020-029	248	11	10	1,119	1	27	73	136	3,834
Typhoid fever . . . . .040	45	332	65	3,340	47	3	13	723	34
Paratyphoid fever and other Salmonella infections . . . . .041,042	2	26	1	779	399	-	6	...	62
Dysentery, all forms . . . . .045-048	133	2,790	180	4,963	39	17	71	1,430	556
Scarlet fever and streptococcal sore throat . . . . .050,051	1	8	-	238	12	-	-	481	235
Diphtheria . . . . .055	14	39	5	527	-	2	13	56	150
Whooping cough . . . . .056	217	2,926	617	7,462	73	218	17	7,514	467
Meningococcal infections . . . . .057	-	5	-	86	-	3	11	33	907
Plague . . . . .058	-	-	-	-	-	-	-	7	-
Leprosy . . . . .060	1	5	5	74	-	1	6	...	5
Tetanus . . . . .061	343	79	77	1,955	308	187	168	181	265
Yaws . . . . .073	-	-	-	...	-	2	-	...	-
Acute poliomyelitis . . . . .080	4	36	22	342	2	14	6	39	1,043
Smallpox . . . . .084	-	-	-	-	-	-	1	277	-
Measles . . . . .085	657	1,481	271	9,716	105	61	16	1,102	345
Yellow fever . . . . .091	-	-	-	-	-	1	-	-	-
Rabies . . . . .094	1	9	-	54	-	-	5	...	4
Louse-borne epidemic typhus . . . . .100	-	-	-	334	-	-	-	...	-
Typhus, other forms . . . . .101-108	-	22	-	-	-	1	-	948	15
Malaria . . . . .110-117	955	6,831	2,468	19,639	752	152	19	1,424	18
Infestation by helminths . . . . .123-130	520	5,057	800	628	273	216	47	...	69
All other infective and parasitic diseases 030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	161	653	243	3,536	46	29	65	1,209	3,746
Malignant neoplasms, etc. . . . .140-205	426	834	283	8,686	170	417	318	1,772	240,681
Benign and unspecified neoplasms . . . . .210-239	28	62	12	1,603	75	43	121	411	5,168
Diseases of thyroid gland . . . . .250-254	107	4	5	1,26	5	5	5	...	1,210
Diabetes mellitus . . . . .260	32	62	21	1,571	37	55	43	68	25,488
Avitaminoses and other metabolic diseases . . . . .280-289	784	716	79	m)9,037	17	43	16	494	1,248
Anaemias . . . . .290-293	220	915	181	3,057	119	178	55	713	3,107
Vascular lesions affecting central nervous system . . . . .330-334	199	546	218	5,263	148	357	171	969	174,142
Nonmeningococcal meningitis . . . . .340	55	243	-	1,514	69	41	59	875	1,873
Rheumatic fever . . . . .400-402	7	8	1	216	-	5	21	75	1,131
Diseases of the heart . . . . .410-443	392	955	346	22,653	542	547	311	2,980	584,620
Arteriosclerosis . . . . .450	22	85	5	-	-	103	114	403	32,486
Other diseases of circulatory system . . . . .444-447,451-468	93	105	63	4,139	31	120	72	n) 194	23,153
Influenza and pneumonia . . . . .480-483,490-493	908	8,124	960	58,328	516	528	390	19,923	44,510
Bronchitis . . . . .500-502	646	2,123	187	8,465	22	296	100	2,773	3,057
Other diseases of respiratory system . . . . .470-475,510-527	228	378	114	3,791	71	123	57	o) 282	15,257
Ulcer of stomach and duodenum . . . . .540,541	43	68	15	1,044	9	26	5	120	9,730
Appendicitis . . . . .550-553	13	35	9	306	20	8	17	50	2,273
Intestinal obstruction & hernia . . . . .560,561,570	73	171	30	1,756	33	43	95	468	8,654
Gastritis, enteritis, etc. . . . .543,571,572	4,951	8,808	640	67,563	1,191	490	264	3,883	7,754
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	2,083	1,413	1,845	18,407	582	240	240	...	30,997
Nephritis and nephrosis . . . . .590-594	39	400	69	5,037	56	104	84	634	18,214
Other diseases of genito-urinary system . . . . .600-637	53	69	15	543	16	46	55	...	15,269
Complications of pregnancy, childbirth and puerperium . . . . .640-689	219	463	232	2,866	127	90	80	414	1,901
Congenital malformations . . . . .750-759	26	99	5	2,411	5	44	33	237	20,502
Certain diseases of early infancy . . . . .760-776	2,668	5,802	338	42,218	973	511	496	7,864	64,043
Senility, ill-defined and unknown . . . . .780-795	10,045	10,166	5,251	40,194	1,923	1,892	2,740	19,710	19,914
All other diseases . . . . .Residual	1,316	1,344	1,339	8,872	241	244	167	7,735	27,990
Accidents . . . . .E800-E962	645	1,125	-	14,292	387	364	232	2,546	93,443
Suicide and self-inflicted injury . . . . .E963,E970-E979	218	91	1,193	382	12	28	16	53	16,760
Homicide and operations of war . . . . .E964,E965,E980-E999	854	253	-	10,782	250	51	104	165	7,447

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(f) Detailed list numbers 250-252.

(d) Year 1955.

(m) Detailed list numbers 280-286.

(i) Data for 1954-55.

(n) Detailed list numbers 444-447.

(g) Incomplete registration.

(o) Detailed list numbers 470-475.

TABLE 5. NUMBER OF DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Uruguay (d)	Venezuela	Alaska (d,h)	Barbados	Bermuda	British Guiana (d)	British Honduras	Canal Zone	Hawaii (i)
Total deaths	20,611	59,369	1,250	2,430	337	5,557	821	155	3,085
Tuberculosis, all forms . . . . .001-019	635	1,723	54	43	2	124	19	6	35
Syphilis and its sequelae . . . . .020-029	192	287	5	47	2	25	2	2	11
Typhoid fever . . . . .040	23	63	-	7	-	26	2	-	-
Paratyphoid fever and other Salmonella infections . . . . .041,042	-	19	-	-	-	-	-	1	1
Dysentery, all forms . . . . .045-048	1	292	-	4	-	56	18	-	4
Scarlet fever and streptococcal sore throat . . . . .050,051	6	5	-	-	-	-	-	-	1
Diphtheria . . . . .055	8	73	-	5	-	18	1	-	-
Whooping cough . . . . .056	42	308	3	23	-	-	-	-	-
Meningococcal infections . . . . .057	6	8	-	4	-	1	9	-	1
Plague . . . . .058	-	1	-	-	-	-	-	-	-
Leprosy . . . . .060	8	22	-	1	-	3	-	-	1
Tetanus . . . . .061	37	595	-	21	-	22	2	-	2
Yaws . . . . .073	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	38	29	5	-	-	4	-	2	4
Smallpox . . . . .084	2	-	-	-	-	-	-	-	-
Measles . . . . .085	11	221	-	-	-	-	-	-	3
Yellow fever . . . . .091	-	3	-	-	-	-	-	-	-
Rabies . . . . .094	-	19	-	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	4	-	-	-	-	-	-	-
Malaria . . . . .110-117	-	12	-	-	-	6	5	-	-
Infestation by helminths . . . . .123-130	...	...	...	...	...	...	...	...	...
All other infective and parasitic diseases 030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	104	676	4	17	2	56	2	1	6
Malignant neoplasms, etc. . . . .140-205	3,910	3,215	87	202	55	217	39	18	508
Benign and unspecified neoplasms . . . . .210-239	88	96	4	7	-	17	-	-	12
Diseases of thyroid gland . . . . .250-254	13	16	1	-	-	-	-	-	2
Diabetes mellitus . . . . .260	358	281	6	28	2	69	3	-	92
Avitaminoses and other metabolic diseases . . . . .280-289	11	874	1	29	-	89	18	2	4
Anaemias . . . . .290-293	64	181	2	14	-	73	4	-	8
Vascular lesions affecting central nervous system . . . . .330-334	2,247	1,295	66	310	57	302	35	15	272
Nonmeningococcal meningitis . . . . .340	74	324	5	3	-	18	-	1	9
Rheumatic fever . . . . .400-402	32	39	2	4	3	6	2	-	-
Diseases of the heart . . . . .410-443	3,593	4,208	235	282	93	517	55	25	1,039
Arteriosclerosis . . . . .450	...	291	8	118	4	-	21	4	32
Other diseases of circulatory system . . . . .444-447,451-468	773	401	6	37	-	121	2	6	45
Influenza and pneumonia . . . . .480-483,490-493	864	2,780	65	215	22	314	41	11	106
Bronchitis . . . . .500-502	165	426	5	21	1	282	5	-	3
Other diseases of respiratory system . . . . .470-475,510-527	194	307	36	18	-	43	2	5	27
Ulcer of stomach and duodenum . . . . .540,541	110	76	9	13	1	22	1	1	14
Appendicitis . . . . .550-553	58	51	1	3	-	8	1	-	3
Intestinal obstruction & hernia . . . . .560,561,570	141	278	7	17	4	36	6	1	13
Gastritis, enteritis, etc. . . . .543,571,572	524	5,577	8	83	2	537	79	1	17
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	458	859	20	25	3	42	4	2	78
Nephritis and nephrosis . . . . .590-594	271	843	16	30	2	196	14	2	64
Other diseases of genito-urinary system . . . . .600-637	188	200	6	19	2	30	10	2	21
Complications of pregnancy, childbirth and puerperium . . . . .640-689	89	382	4	24	2	77	16	1	5
Congenital malformations . . . . .750-759	219	493	27	20	5	40	13	5	75
Certain diseases of early infancy . . . . .760-776	1,221	4,342	126	363	26	720	81	18	254
Senility, ill-defined and unknown . . . . .780-795	1,636	22,405	56	277	22	990	22	3	17
All other diseases . . . . .Residual	890	1,416	31	78	17	150	248	4	86
Accidents . . . . .E800-E962	890	2,678	287	16	5	275	37	14	162
Suicide and self-inflicted injury . . . . .E963, E970-E979	297	358	36	-	1	18	2	2	40
Homicide and operations of war . . . . .E964, E965, E980-E999	120	317	16	2	2	7	-	-	8

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(d) Year 1955.

(h) Data corrected for residence.

(i) Excluding 62 deaths among military personnel stationed in the Territory.

TABLE 5. NUMBER OF DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Jamaica (j)	Leeward Islands		Martinique	Puerto Rico (d)	Trinidad and Tobago	Windward Islands	
		Antigua	St. Lucia				St. Vincent (d)	
Total deaths	16,302	497		2,381	16,243	7,136	1,127	1,102
Tuberculosis, all forms . . . . .001-019	500	21		106	743	169	41	23
Syphilis and its sequelae . . . . .020-029	348	5		1	63	55	13	10
Typhoid fever . . . . .040	71	-		10	2	12	-	1
Paratyphoid fever and other								
Salmonella infections . . . . .041,042	4	-	...	-	-	-	-	-
Dysentery, all forms . . . . .045-048	15	1		-	9	29	-	2
Scarlet fever and streptococcal								
sore throat . . . . .050,051	1	-		-	-	-	-	-
Diphtheria . . . . .055	12	-		-	10	6	-	-
Whooping cough . . . . .056	18	-		17	18	5	54	35
Meningococcal infections . . . . .057	3	-		-	13	2	-	-
Plague . . . . .058	-	-		-	-	-	-	-
Leprosy . . . . .060	6	-		-	1	3	1	-
Tetanus . . . . .061	45	2		13	68	35	3	-
Yaws . . . . .073	-	-		-	-	-	-	-
Acute poliomyelitis . . . . .080	58	-		-	21	-	1	-
Smallpox . . . . .084	-	-		-	-	-	-	-
Measles . . . . .085	39	-		-	30	2	-	-
Yellow fever . . . . .091	-	-		-	-	-	-	-
Rabies . . . . .094	-	-		-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-		-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-		-	-	-	1	-
Malaria . . . . .110-117	498	-		-	-	21	31	-
Infestation by helminths . . . . .123-130	...	...		...	...	...	3	...
All other infective and parasitic diseases								
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	217	12		60	227	70	10	32
Malignant neoplasms, etc. . . . .140-205	798	31		48	1,592	466	36	23
Benign and unspecified neoplasms . . . . .210-239	23	-		9	9	6	4	-
Diseases of thyroid gland . . . . .250-254	20	-		-	4	-	-	-
Diabetes mellitus . . . . .260	144	5		2	131	126	1	4
Avitaminoses and other metabolic								
diseases . . . . .280-289	307	5		-	155	96	12	-
Anaemias . . . . .290-293	63	5		22	109	88	15	3
Vascular lesions affecting central								
nervous system . . . . .330-334	649	46		49	903	582	32	22
Nonmeningococcal meningitis . . . . .340	59	-		35	81	25	5	1
Rheumatic fever . . . . .400-402	12	1		-	28	18	-	-
Diseases of the heart . . . . .410-443	1,308	2		18	2,244	1,212	105	96
Arteriosclerosis . . . . .450		52		-	253	97		
Other diseases of circulatory								
system . . . . .444-447,451-468	230	22		-	187	272	9	2
Influenza and pneumonia . . . . .480-483,490-493	705	39		96	905	391	90	38
Bronchitis . . . . .500-502	157	1		8	79	238	24	55
Other diseases of respiratory								
system . . . . .470-475,510-527	73	9		-	162	88	5	-
Ulcer of stomach and duodenum . . . . .540,541	101	3		-	41	27	2	2
Appendicitis . . . . .550-553	16	-		2	21	16	-	-
Intestinal obstruction & hernia . . . . .560,561,570	127	-		-	74	41	1	3
Gastritis, enteritis, etc. . . . .543,571,572	649	37		89	1,709	445	147	148
Other diseases of digestive system . . . . .530-539								
542,544,545,573-587	246	3		-	349	151	14	-
Nephritis and nephrosis . . . . .590-594	292	17		39	280	117	15	7
Other diseases of genito-urinary								
system . . . . .600-637	122	-		-	77	100	7	-
Complications of pregnancy,								
childbirth and puerperium . . . . .640-689	166	10		1	92	68	2	4
Congenital malformations . . . . .750-759	78	3		61	306	82	3	1
Certain diseases of early infancy . . . . .760-776	622	56		140	1,433	946	186	337
Senility, ill-defined and unknown . . . . .780-795	584	91		501	2,136	479	174	136
All other diseases . . . . .Residual	6,425	4		1,021	626	211	43	103
Accidents . . . . .E800-E962	422	14		33	630	250		9
Suicide and self-inflicted								
injury . . . . .E963,E970-E979	17	-		-	255	39	37	1
Homicide and operations								
of war . . . . .E964,E965,E980-E999	52	-		-	167	50		4

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(d) Year 1955.

(j) Year 1954.

TABLE 6. DEATH RATES PER 100,000 POPULATION FROM SPECIFIC CAUSES IN THE AMERICAS, 1956

Cause*	Argentina (a)	Bolivia (a)	Brazil (b)	Canada (c)	Chile	Colombia	Costa Rica	Domi- can Republic (d)	Ecuador (d,e)	El Salvador (d)	Guatemala (d)	Hon- duras (f)
Total deaths	881.6	1449.8	1186.5	819.9	1271.0	1329.2	963.6	906.8	1550.5	1420.4	2059.2	130.6
Tuberculosis, all forms . . . . .001-019	29.3	55.6	67.1	7.7	62.7	26.9	20.0	30.5	32.9	20.8	40.2	15.4
Syphilis and its sequelae . . . . .020-029	2.9	2.5	9.1	1.3	2.1	2.3	3.5	7.7	1.9	11.3	0.3	0.6
Typhoid fever . . . . .040		6.7	1.6	0.1	2.3	4.3	1.6	7.2	25.4	2.1	10.2	4.0
Paratyphoid fever and other Salmonella infections . . . . .041,042	1.0	0.5	0.0	0.0	0.3	0.4	0.6	...	0.9	0.1	0.8	0.1
Dysentery, all forms . . . . .045-048	0.1	27.1	7.8	0.2	1.3	5.4	5.2	5.9	7.8	6.1	85.6	11.0
Scarlet fever and streptococcal sore throat . . . . .050,051	0.1	27.1	0.1	0.1	0.2	0.1	0.2	-	0.1	0.0	0.2	-
Diphtheria . . . . .055	0.5	1.8	2.5	0.0	2.2	3.0	2.6	3.6	3.2	0.6	1.2	0.3
Whooping cough . . . . .056	1.4	163.8	3.7	0.7	5.4	30.5	8.9	5.7	218.6	9.9	89.8	37.8
Meningococcal infections . . . . .057	0.1	0.1	1.9	0.5	0.6	0.2	0.4	0.0	0.3	-	0.2	-
Plague . . . . .058	-	3.8	-	-	-	-	-	-	2.3	-	-	-
Leprosy . . . . .060	0.2	0.3	0.9	0.0	-	0.9	0.4	...	0.1	0.0	0.2	0.3
Tetanus . . . . .061	...	2.7	8.7	0.0	0.8	2.7	19.2	...	19.2	15.6	2.4	4.7
Yaws . . . . .073	-	-	-	-	-	-	-	...	-	-	-	-
Acute poliomyelitis . . . . .080	1.0	0.0	1.2	0.3	1.3	0.6	0.8	-	0.9	0.2	1.1	1.3
Smallpox . . . . .084	-	42.4	0.4	-	0.0	1.2	-	-	5.9	-	-	-
Measles . . . . .085	0.6	17.1	4.0	1.0	6.9	20.8	7.3	4.3	73.7	30.0	45.5	16.6
Yellow fever . . . . .091	-	0.6	-	-	-	0.1	-	-	k)0.1	-	-	-
Rabies . . . . .094	0.0	0.1	0.4	-	0.1	0.2	-	-	1.0	0.0	0.3	-
Louse-borne epidemic typhus . . . . .100	-	1.1	-	-	0.1	0.1	-	-	0.4	-	-	-
Typhus, other forms . . . . .101-108	0.1	7.2	0.0	0.0	0.0	6.9	0.1	-	0.2	-	0.7	-
Malaria . . . . .110-117	0.0	16.6	1.3	-	-	12.7	11.2	33.6	38.2	43.5	209.7	151.1
Infestation by helminths . . . . .123-130	...	0.4	...	...	1.0	32.9	29.5	...	10.9	23.7	155.2	49.0
All other infective and parasitic diseases 030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	8.0	14.8	16.6	2.3	5.9	7.6	7.3	70.2	12.5	7.3	20.0	14.9
Malignant neoplasms, etc. . . . .140-205	116.2	8.5	106.5	129.9	100.2	42.0	75.6	18.8	27.7	19.4	25.6	17.3
Benign and unspecified neoplasms . . . . .210-239	5.4	1.2	3.7	2.2	2.8	10.1	3.9	4.8	2.4	1.3	1.9	0.7
Diseases of thyroid gland . . . . .250-254	...	0.1	0.7	0.8	0.3	0.3	0.1	...	0.2	4.9	0.1	0.3
Diabetes mellitus . . . . .260	8.1	0.3	13.2	11.3	6.2	3.3	7.0	1.9	1.7	1.5	1.9	1.3
Avitaminoses and other metabolic diseases . . . . .280-289	...	45.2	5.8	1.1	5.7	31.3	8.6	...	5.1	35.7	22.0	4.8
Anaemias . . . . .290-293	1.3	42.2	1.9	2.2	1.7	19.9	15.5	12.7	20.2	10.0	28.1	11.1
Vascular lesions affecting central nervous system . . . . .330-334	64.7	6.7	62.1	90.0	64.4	23.8	30.0	11.0	11.9	9.1	16.8	13.3
Nonmeningococcal meningitis . . . . .340	7.0	7.9	5.9	1.5	6.9	15.6	5.6	6.1	6.4	2.5	7.5	-
Rheumatic fever . . . . .400-402		0.3	4.3	0.7	4.0	0.6	2.2	0.0	0.9	0.3	0.2	0.1
Diseases of the heart . . . . .410-443		65.6	211.9	273.8	121.6	74.0	67.3	53.4	42.0	17.9	29.3	21.2
Arteriosclerosis . . . . .450	179.8	0.5	22.3	14.6	12.7	4.5	5.1	...	3.1	1.0	2.6	0.3
Other diseases of circulatory system . . . . .444-447,451-468		2.9	17.6	12.9	14.3	7.3	6.7	5.0	6.9	4.2	3.2	3.9
Influenza and pneumonia . . . . .480-483,490-493	49.0	141.0	83.6	35.4	224.3	93.1	56.1	33.6	93.8	41.4	249.4	58.8
Bronchitis . . . . .500-502	4.0	22.6	5.2	4.5	4.5	54.4	20.9	29.3	155.1	29.5	65.2	11.4
Other diseases of respiratory system . . . . .470-475,510-527	...	65.4	15.0	8.9	9.1	8.0	6.4	...	10.7	10.4	11.6	7.0
Ulcer of stomach and duodenum . . . . .540,541	1.6	0.8	4.8	4.8	4.0	4.5	3.6	0.7	2.5	2.0	2.1	0.9
Appendicitis . . . . .550-553	1.1	0.5	1.4	1.2	1.1	1.5	0.6	0.7	0.7	0.6	1.1	0.6
Intestinal obstruction & hernia . . . . .560,561,570	3.6	5.5	6.8	5.2	6.9	4.8	5.2	2.7	10.8	3.3	5.2	1.8
Gastritis, enteritis, etc. . . . .543,571,572	16.4	56.7	157.1	5.6	85.7	120.9	123.6	104.9	106.4	225.8	270.3	39.2
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	...	90.6	25.5	12.4	43.4	55.2	23.8	3.9	32.5	95.0	43.4	112.9
Nephritis and nephrosis . . . . .590-594	19.5	5.1	21.0	13.4	11.9	18.2	10.3	6.9	11.0	1.8	12.3	4.2
Other diseases of genito-urinary system . . . . .600-637	...	3.8	9.8	8.6	4.8	2.8	4.5	0.0	2.5	2.4	2.1	0.9
Complications of pregnancy, childbirth and puerperium . . . . .640-689	2.8	17.1	8.7	1.7	11.7	12.9	9.1	5.1	13.8	10.0	14.2	14.2
Congenital malformations . . . . .750-759		0.1	15.1	17.6	8.6	8.1	11.5	4.7	2.9	1.2	3.0	0.3
Certain diseases of early infancy . . . . .760-776	67.2	18.1	96.1	46.8	163.6	117.0	101.3	111.6	101.0	121.7	178.1	20.7
Senility, ill-defined and unknown . . . . .780-795	133.2	375.7	20.9	11.0	138.6	319.5	168.6	204.9	339.0	458.0	312.0	321.4
All other diseases . . . . .Residual	109.0	32.3	54.8	21.0	35.4	25.7	28.7	92.0	34.5	60.0	41.3	82.0
Accidents . . . . .E800-E962		15.2	49.0	57.5	56.3	48.7	35.9	16.0		29.4	34.5	
Suicide and self-inflicted injury . . . . .E963, E970-E979	46.2	1.2	17.9	7.6	9.2	0.9	2.6	3.1	48.4	9.9	2.8	73.0
Homicide and operations of war . . . . .E964, E965, E980-E999		24.4	10.5	1.2	18.0	40.1	4.4	4.0		38.9	7.8	

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.  
(a) Year 1953. (e) Data from Boletín Estadístico, Vol. 2, No 3 (October 1957).  
(b) Data for Federal District and seven State capitals. (f) Data for 1954-55.  
(c) Excluding Yukon and Northwest Territories. (k) Data not confirmed.  
(d) Year 1955.

TABLE 6. DEATH RATES PER 100,000 POPULATION FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Mexico (d)	Nicaragua	Panama	Paraguay (g)	Peru (a)	United States (d)	Uruguay (d)	Venezuela	Alaska (d,h)	Barbados	Bermuda	British Guiana (d)
Total deaths	1373.1	760.2	933.5	453.5	1216.1	930.4	788.3	1028.4	598.1	1064.8	809.6	1190.1
Tuberculosis, all forms . . . . .001-019	26.0	6.8	33.0	15.1	72.9	9.1	24.3	29.8	25.8	18.8	4.8	26.6
Syphilis and its sequelae . . . . .020-029	3.8	0.1	3.0	4.6	1.7	2.3	7.3	5.0	2.4	20.6	4.8	5.4
Typhoid fever . . . . .040	11.3	3.6	0.3	0.8	9.0	0.0	0.9	1.1	-	3.1	-	5.6
Paratyphoid fever and other												
Salmonella infections . . . . .041,042	2.6	31.0	-	0.4	...	0.0	-	0.3	-	-	-	-
Dysentery, all forms . . . . .045-048	16.7	3.0	1.9	4.4	17.9	0.3	0.0	5.1	-	1.8	-	12.0
Scarlet fever and streptococcal												
sore throat . . . . .050,051	0.8	0.9	-	-	6.0	0.1	0.2	0.1	-	-	-	-
Diphtheria . . . . .055	1.8	-	0.2	0.8	0.7	0.1	0.3	1.3	-	2.2	-	3.9
Whooping cough . . . . .056	25.1	5.7	24.6	1.1	94.0	0.3	1.6	5.3	1.4	10.1	-	-
Meningococcal infections . . . . .057	0.3	-	0.3	0.7	0.4	0.6	0.2	0.1	-	1.8	-	0.2
Plague . . . . .058	-	-	-	-	0.1	-	-	-	-	-	-	-
Leprosy . . . . .060	0.2	-	0.1	0.4	...	0.0	0.3	6.4	-	0.4	-	0.6
Tetanus . . . . .061	6.6	23.9	21.1	10.5	2.3	0.2	1.4	10.3	-	9.2	-	4.7
Yaws . . . . .073	-	-	0.2	-	...	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	1.2	0.2	1.6	0.4	0.5	0.6	1.5	0.5	2.4	-	-	0.9
Smallpox . . . . .084	-	-	-	0.1	3.5	-	0.1	-	-	-	-	-
Measles . . . . .085	32.7	8.2	6.9	1.0	13.8	0.2	0.4	3.8	-	-	-	-
Yellow fever . . . . .091	-	-	0.1	-	-	-	-	0.1	-	-	-	-
Rabies . . . . .094	0.2	-	-	0.3	...	0.0	-	0.3	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	...	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	1.1	-	0.1	-	11.9	0.0	-	0.1	-	-	-	-
Malaria . . . . .110-117	66.2	58.4	17.2	1.2	17.8	0.0	-	0.2	-	-	-	1.3
Infestation by helminths . . . . .123-130	2.1	21.2	24.4	2.9	...	0.0	...	...	...	...	...	...
All other infective and parasitic diseases												
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	11.9	3.6	3.3	4.1	15.1	2.3	4.0	11.7	1.9	7.4	4.8	12.0
Malignant neoplasms, etc. . . . .140-205	29.3	13.2	47.1	19.9	22.2	146.5	149.5	55.7	41.6	88.5	132.1	46.5
Benign and unspecified neoplasms . . . . .210-239	5.4	5.8	4.9	7.6	5.1	3.1	3.4	1.7	1.9	3.1	-	3.6
Diseases of thyroid gland . . . . .250-254	0.1	0.4	0.6	0.3	...	0.7	0.5	0.3	0.5	-	-	-
Diabetes mellitus . . . . .260	5.3	2.9	6.2	2.7	0.9	15.5	13.7	4.9	2.9	12.3	4.8	14.8
Avitaminoses and other metabolic												
diseases . . . . .280-289	30.4	1.3	4.9	1.0	6.2	0.8	0.4	15.1	0.5	12.7	-	19.1
Anaemias . . . . .290-293	10.3	9.2	20.1	3.4	8.9	1.9	2.4	3.1	1.0	6.1	-	15.6
Vascular lesions affecting central												
nervous system . . . . .330-334	17.7	11.5	40.3	10.7	12.1	106.0	85.9	22.4	31.6	135.8	136.9	64.7
Nonmeningococcal meningitis . . . . .340	5.1	5.4	4.6	3.7	10.9	1.1	2.8	5.6	2.4	1.3	-	3.9
Rheumatic fever . . . . .400-402	0.7	-	0.6	1.3	0.9	0.7	1.2	0.7	1.0	1.8	7.2	1.3
Diseases of the heart . . . . .410-443	76.3	42.1	61.8	19.4	37.3	355.8	137.4	72.9	112.4	123.6	223.4	110.7
Arteriosclerosis . . . . .450	-	-	11.6	7.1	5.0	19.8	...	5.0	3.8	51.7	9.6	-
Other diseases of circulatory												
system . . . . .444-447,451-468	13.9	2.4	13.5	4.5	n)2.4	14.1	29.6	6.9	2.9	16.2	-	25.9
Influenza and pneumonia . . . . .480-483,490-493	196.5	40.1	59.6	24.4	249.3	27.1	33.0	48.2	31.1	94.2	52.9	67.2
Bronchitis . . . . .500-502	28.5	1.7	33.4	6.2	34.7	1.9	6.3	7.4	2.4	9.2	2.4	60.4
Other diseases of respiratory												
system . . . . .470-475,510-527	12.8	5.5	13.9	3.6	o)3.5	9.3	7.4	5.3	17.2	7.9	-	9.2
Ulcer of stomach and duodenum . . . . .540,541	3.5	0.7	2.9	0.3	1.5	5.9	4.2	1.3	4.3	5.7	2.4	4.7
Appendicitis . . . . .550-553	1.0	1.6	0.9	1.1	0.6	1.4	2.2	0.9	0.5	1.3	-	1.7
Intestinal obstruction & hernia . . . . .560,561,570	5.9	2.6	4.9	5.9	5.9	5.3	5.4	4.8	3.3	7.4	9.6	7.7
Gastritis, enteritis, etc. . . . .543,571,572	227.6	92.5	55.3	16.5	48.6	4.7	20.0	96.6	3.8	36.4	4.8	115.0
Other diseases of digestive system . . . . .530-539												
542,544,545,573-587	62.0	45.2	27.1	15.0	...	18.9	17.5	14.9	9.6	11.0	7.2	9.0
Nephritis and nephrosis . . . . .590-594	17.0	4.3	11.7	5.2	7.9	11.1	10.4	14.6	7.7	13.1	4.8	42.0
Other diseases of genito-urinary												
system . . . . .600-637	1.8	1.2	5.2	3.4	...	9.3	7.2	3.5	2.9	8.3	4.8	6.4
Complications of pregnancy,												
childbirth and puerperium . . . . .640-689	9.7	9.9	10.2	5.0	5.2	1.2	3.4	6.6	1.9	10.5	4.8	16.5
Congenital malformations . . . . .750-759	8.1	0.4	5.4	2.1	3.0	12.5	8.4	8.5	12.9	8.8	12.0	8.6
Certain diseases of early infancy . . . . .760-776	142.2	75.5	57.7	31.0	98.4	39.0	46.7	75.2	60.3	159.1	62.5	154.2
Senility, ill-defined and unknown . . . . .780-795	135.4	149.3	213.6	171.1	246.6	12.1	62.6	388.1	26.8	121.4	52.9	212.0
All other diseases . . . . .Residual	29.9	18.7	27.5	10.4	96.8	17.0	34.0	24.5	14.8	34.2	40.8	32.1
Accidents . . . . .E800-E962	48.2	30.0	41.1	14.5	31.9	56.9	34.0	46.4	137.3	7.0	12.0	58.9
Suicide and self-inflicted												
injury . . . . .E963,E970-E979	1.3	0.9	3.2	1.0	0.7	10.2	11.4	6.2	17.2	-	2.4	3.9
Homicide and operations												
of war . . . . .E964,E965,E980-E999	36.3	19.4	5.8	6.5	2.1	4.5	4.6	5.5	7.7	0.9	4.8	1.5

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(d) Year 1955.

(g) Incomplete registration.

(h) Data corrected for residence.

(l) Detailed list numbers 250-252.

(m) Detailed list numbers 280-286.

(n) Detailed list numbers 444-447.

(o) Detailed list numbers 470-475.

TABLE 6. DEATH RATES PER 100,000 POPULATION FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	British Honduras	Canal Zone	Hawaii (i)	Jamaica (j)	Leeward Islands	Martinique	Puerto Rico (d)	Trinidad and Tobago	Windward Islands	
					Antigua				St. Lucia	St. Vincent (d)
Total deaths	1003.9	415.6	586.5	1074.1	931.7	941.1	717.8	961.1	1266.2	1450.8
Tuberculosis, all forms . . . . .001-019	23.2	16.1	6.7	32.9	39.4	41.9	32.8	22.8	46.1	30.3
Syphilis and its sequelae . . . . .020-029	2.4	5.4	2.1	22.9	9.4	0.4	2.8	7.4	14.6	13.2
Typhoid fever . . . . .040	2.4	-	-	4.7	-	4.0	0.1	1.6	-	1.3
Paratyphoid fever and other										
Salmonella infections . . . . .041,042	-	2.7	0.2	0.3	-	-	-	-	-	-
Dysentery, all forms . . . . .045-048	22.0	-	0.8	1.0	1.9	-	0.4	3.9	-	2.6
Scarlet fever and streptococcal sore throat . . . . .050,051	-	-	0.2	0.1	-	-	-	-	-	-
Diphtheria . . . . .055	1.2	-	-	0.8	-	-	0.4	0.8	-	-
Whooping cough . . . . .056	-	-	-	1.2	-	6.7	0.8	0.7	60.7	46.1
Meningococcal infections . . . . .057	11.0	-	0.2	0.2	-	-	0.6	0.3	-	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	0.2	0.4	-	-	0.0	0.4	1.1	-
Tetanus . . . . .061	2.4	-	0.4	3.0	3.7	5.1	3.0	4.7	3.4	-
Yaws . . . . .073	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	-	5.4	0.8	3.8	-	-	0.9	-	1.1	-
Smallpox . . . . .084	-	-	-	-	-	-	-	-	-	-
Measles . . . . .085	-	-	0.6	2.6	-	-	1.3	0.3	-	-
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	-	-	-	-	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-	-	-	-	-	-	-	1.1	-
Malaria . . . . .110-117	6.1	-	-	32.8	-	-	-	2.8	34.8	-
Infestation by helminths . . . . .123-130	...	...	...	...	...	...	...	...	3.4	...
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	2.4	2.7	1.1	14.3	22.5	23.7	10.0	9.4	11.2	42.1
Malignant neoplasms, etc. . . . .140-205	47.7	48.3	96.6	52.6	58.1	19.0	70.3	62.8	40.4	30.3
Benign and unspecified neoplasms . . . . .210-239	-	-	2.3	1.5	-	3.6	0.4	0.8	4.5	-
Diseases of thyroid gland . . . . .250-254	-	-	0.4	1.3	-	-	0.2	-	-	-
Diabetes mellitus . . . . .260	3.7	-	17.5	9.5	9.4	0.8	5.8	17.0	1.1	5.3
Avitaminoses and other metabolic diseases . . . . .280-289	22.0	5.4	0.8	20.2	9.4	-	6.8	12.9	13.5	-
Anaemias . . . . .290-293	4.9	-	1.5	4.2	9.4	8.7	4.8	11.9	16.9	3.9
Vascular lesions affecting central nervous system . . . . .330-334	42.8	40.2	51.7	42.8	86.2	19.4	39.9	78.4	36.0	29.0
Nonmeningococcal meningitis . . . . .340	-	2.7	1.7	3.9	-	13.8	3.6	3.4	5.6	1.3
Rheumatic fever . . . . .400-402	2.4	-	-	0.8	1.9	-	1.2	2.4	-	-
Diseases of the heart . . . . .410-443	67.3	67.0	197.5	86.2	3.7	7.1	99.2	163.2	118.0	126.4
Arteriosclerosis . . . . .450	25.7	10.7	6.1	15.2	97.5	-	11.2	13.1	10.1	-
Other diseases of circulatory system . . . . .444-447,451-468	2.4	16.1	8.6	41.2	-	-	8.3	36.6	-	2.6
Influenza and pneumonia . . . . .480-483,490-493	50.1	29.5	20.2	46.5	73.1	37.9	40.0	52.7	101.1	50.0
Bronchitis . . . . .500-502	6.1	-	0.6	10.3	1.9	3.2	3.5	32.1	27.0	72.4
Other diseases of respiratory system . . . . .470-475,510-527	2.4	13.4	5.1	4.8	16.9	-	7.2	11.9	5.6	-
Ulcer of stomach and duodenum . . . . .540,541	1.2	2.7	2.7	6.7	5.6	-	1.8	3.6	2.2	2.6
Appendicitis . . . . .550-553	1.2	-	0.6	1.1	-	0.8	0.9	2.2	-	-
Intestinal obstruction & hernia . . . . .560,561,570	7.3	2.7	2.5	8.4	-	-	3.3	5.5	1.1	3.9
Gastritis, enteritis, etc. . . . .543,571,572	96.6	2.7	3.2	42.8	69.4	35.2	75.5	59.9	165.2	194.8
Other diseases of digestive system . . . . .530-539										
542,544,545,573-587	4.9	5.4	14.8	16.2	5.6	-	15.4	20.3	15.7	-
Nephritis and nephrosis . . . . .590-594	17.1	5.4	12.2	19.2	31.9	15.4	12.4	15.8	16.9	9.2
Other diseases of genito-urinary system . . . . .600-637	12.2	5.4	4.0	8.0	-	-	3.4	13.5	7.9	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	19.6	2.7	1.0	10.9	18.7	0.4	4.1	9.2	2.2	5.3
Congenital malformations . . . . .750-759	15.9	13.4	14.3	5.1	5.6	24.1	13.5	11.0	3.4	1.3
Certain diseases of early infancy . . . . .760-776	99.0	48.3	48.3	41.0	105.0	55.3	63.3	127.4	209.0	443.7
Senility, ill-defined and unknown . . . . .780-795	26.9	8.0	3.2	38.5	170.6	198.0	94.4	64.5	195.5	179.0
All other diseases . . . . .Residual	303.3	10.7	16.3	423.3	7.5	403.6	27.7	28.4	48.3	135.6
Accidents . . . . .E800-E962	45.2	37.5	30.8	27.8	26.2	13.0	27.8	33.7	-	11.8
Suicide and self-inflicted injury . . . . .E963,E970-E979	2.4	5.4	7.6	1.1	-	-	11.3	5.3	41.6	1.3
Homicide and operations of war . . . . .E964,E965,E980-E999	-	-	1.5	3.4	-	-	7.4	6.7	-	5.3

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organisation, Geneva, 1948.

(d) Year 1955.

(i) Excluding 62 deaths among military personnel stationed in the Territory.

(j) Year 1954.



are useful in viewing the health problems in the Americas. Only through understanding of the usefulness of the data as well as their limitations will efforts be coordinated for their improvement.

In order to indicate the main causes of mortality, the five principal causes of death have been determined for each country and other area. The grouping of causes for selection of principal causes is that recommended by Curiel<sup>(f)</sup> with the possibility of an additional communicable disease or avitaminoses and other metabolic diseases. Residual groups or senility, ill-defined and unknown causes are not considered in designating principal causes of death.

From study of the data in Table 7 several different patterns of principal causes of death are evident. In Argentina, Uruguay, the United States and Canada, the two leading causes are diseases of the older age groups namely, diseases of the heart, and malignant neoplasms. These were the two leading causes also in Hawaii and Jamaica. However, in many countries and other areas of the Americas the major causes of death are those due essentially to environmental factors. In several countries the leading causes are gastritis, enteritis, etc. and certain diseases of early infancy. Gastritis, enteritis, etc. as well as influenza and pneumonia are principal causes in nearly all countries and other areas. The fact that the group, certain diseases of early infancy, has such a high death rate in many areas is due to the inclusion of deaths due to toxicosis and malnutrition of infants under one year of age which are conditions being reported in many areas and are believed essentially to belong in the categories for diarrheal and deficiency diseases. If such deaths were included in the groups for diarrheal disease and deficiency diseases those rates would be considerably higher. Malaria appears as one of the principal causes of death in six countries. Although tuberculosis death rates have declined notably, tuberculosis appeared as a principal cause in two countries and one other area.

In addition to the principal causes of death as shown in Table 7, study of the numbers of deaths from specific causes reveals

many health problems. Communicable diseases such as typhoid fever, syphilis, whooping cough, measles, and smallpox cause many deaths in some of the countries. In 7 countries the death rate from tetanus exceeded 10 per 100,000 population. Avitaminoses and other metabolic diseases and anaemias are the causes of many deaths and relatively high death rates in some of the Latin American countries.

The comparability of death rates from specific causes is dependent on the medical terminology used in the various countries, on the classification of such terms as well as on the completeness of medical certification.

### MEDICAL CERTIFICATION

The Working Party of Methods of Improving the Reliability of Raw Statistical Data Required for Health Programs of the XIV Pan American Sanitary Conference recommended that tabulations of deaths from specific causes according to medical certification be prepared and included in this Summary. Many of the countries were able to provide such tabulations of deaths from specific causes according to medical certification which permits analysis of causes according to the type of certification. Procedures vary widely in these countries for in three countries and 6 other areas all or nearly all of the deaths had medical certification. In these countries health officers or medical examiners were required to certify causes of death of persons without medical attention at the time of death. At the other extreme there were 9 countries in which less than half of the deaths were medically certified (Table 8).

Data provided in Table 9 of causes of death with and without medical certification indicate that certain specific causes are given more frequently for deaths with medical certification. For example the proportions of the deaths medically certified which were due to tuberculosis, syphilis, diseases of the heart and malignant neoplasms were usually higher than were the proportions of deaths without medical certification. However, the reverse

(f) Curiel, D., *Causas Principales de Muerte*, Boletín de la Oficina Sanitaria Panamericana, Vol. XI, No. 3, March 1956.

TABLE 7. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION  
IN THE AMERICAS, 1956

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
ARGENTINA (a) - All causes ..	162,217	881.6	COLOMBIA (Continued)		
Diseases of the circulatory system (406-468) .....	33,086	179.8	Diseases of the heart (410-443)	9,576	74.0
Malignant neoplasms (140-205) ..	21,374	116.2	Bronchitis (500-502) .....	7,035	54.4
Congenital malformations and certain diseases of early infancy (750-776) .....	12,374	67.2	COSTA RICA - All causes .....	9,518	963.6
Vascular lesions affecting central nervous system(330-334)	11,903	64.7	Gastritis, enteritis, etc. (543, 571, 572) .....	1,221	123.6
Influenza and pneumonia (480-483, 490-493) .....	9,014	49.0	Certain diseases of early infancy (760-776) .....	1,001	101.3
BOLIVIA (a) - All causes .....	45,309	1449.8	Malignant neoplasms (140-205)...	747	75.6
Whooping cough (056) .....	5,119	163.8	Diseases of the heart(410-443)..	665	67.3
Influenza and pneumonia (480-483, 490-493) .....	4,408	141.0	Influenza and pneumonia (480-483, 490-493).....	554	56.1
Diseases of the heart (410-443).	2,049	65.6	DOMINICAN REPUBLIC (d) -		
Gastritis, enteritis, etc. (543, 571, 572) .....	1,771	56.7	All causes .....	22,864	906.8
Tuberculosis, all forms (001-019)	1,739	55.6	Certain diseases of early infancy (760-776) .....	2,815	111.6
BRAZIL (b) - All causes .....	71,158	1186.5	Gastritis, enteritis, etc. (543, 571, 572) .....	2,645	104.9
Diseases of the heart (410-443).	12,708	211.9	Diseases of the heart (410-443).	1,346	53.4
Gastritis, enteritis, etc. (543, 571, 572) .....	9,421	157.1	Influenza and pneumonia (480-483, 490-493).....	848	33.6
Malignant neoplasms (140-205)...	6,385	106.5	Malaria (110-117) .....	848	33.6
Certain diseases of early infancy (760-776) .....	5,761	96.1	ECUADOR (d,e) - All causes ..	57,226	1550.5
Influenza and pneumonia (480-483, 490-493) .....	5,016	83.6	Whooping cough (056) .....	8,068	218.6
CANADA (c) - All causes .....	131,585	819.9	Bronchitis (500-502) .....	5,724	155.1
Diseases of the heart (410-443).	43,949	273.8	Gastritis, enteritis, etc. (543, 571, 572) .....	3,928	106.4
Malignant neoplasms (140-205)...	20,853	129.9	Certain diseases of early infancy (760-776) .....	3,726	101.0
Vascular lesions affecting central nervous system (330-334)..	14,443	90.0	Influenza and pneumonia (480-483, 490-493) .....	3,462	93.8
Accidents (E800-E962) .....	9,226	57.5	EL SALVADOR (d) - All causes..	31,151	1420.4
Certain diseases of early infancy (760-776) .....	7,509	46.8	Gastritis, enteritis, etc. (543, 571, 572) .....	4,951	225.8
CHILE - All causes .....	83,744	1271.0	Certain diseases of early infancy (760-776) .....	2,668	121.7
Influenza and pneumonia (480-483, 490-493).....	14,779	224.3	Malaria (110-117) .....	955	43.5
Certain diseases of early infancy (760-776) .....	10,779	163.6	Influenza and pneumonia (480-483, 490-493) .....	908	41.4
Diseases of the heart (410-443).	8,014	121.6	Homicide (E964, E980-E985) .....	854	38.9
Malignant neoplasms (140-205)...	6,602	100.2	GUATEMALA (d) - All causes...	67,088	2059.2
Gastritis, enteritis, etc. (543, 571, 572) .....	5,645	85.7	Gastritis, enteritis, etc. (543, 571, 572) .....	8,808	270.3
COLOMBIA - All Causes .....	171,984	1329.2	Influenza and pneumonia (480-483, 490-493) .....	8,124	249.4
Gastritis, enteritis, etc. (543,571,572) .....	15,638	120.9	Malaria (110-117) .....	6,831	209.7
Certain diseases of early infancy (760-776) .....	15,137	117.0	Certain diseases of early infancy (760-776) .....	5,802	178.1
Influenza and pneumonia (480-483, 490-493).....	12,049	93.1	Diseases due to helminths (123-130) .....	5,057	155.2

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(d) Year 1955.

(b) Federal District and seven State capitals.

(e) Data from *Boletín Estadístico*, Vol. 2, No 3 (October 1957).

(c) Excluding Yukon and Northwest Territories.

TABLE 7. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION  
IN THE AMERICAS, 1956 (Continued)

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
HONDURAS (f) - All causes ...	18,471	1130.6	UNITED STATES (d) - All causes...	1,528,717	930.4
Malaria (110-117) .....	2,468	151.1	Diseases of the heart (410-443)..	584,620	355.8
Accidents, poisonings, and violence (E800-E999) .....	1,193	73.0	Malignant neoplasms (140-205)...	240,681	146.5
Influenza and pneumonia (480-483, 490-493).....	960	58.8	Vascular lesions affecting central nervous system (330-334)...	174,142	106.0
Diseases due to helminths (123-130) .....	800	49.0	Accidents (E800-E962) .....	93,443	56.9
Gastritis, enteritis, etc. (543, 571, 572) .....	640	39.2	Certain diseases of early infancy (760-776) .....	64,043	39.0
MEXICO (d) - All causes .....	407,522	1373.1	URUGUAY (d) - All causes ....	20,611	788.3
Gastritis, enteritis, etc. (543, 571, 572) .....	67,563	227.6	Malignant neoplasms (140-205)...	3,910	149.5
Influenza and pneumonia (480-483, 490-493) .....	58,328	196.5	Diseases of the heart (410-443)..	3,593	137.4
Certain diseases of early infancy (760-776) .....	42,218	142.2	Vascular lesions affecting central nervous system (330-334)...	2,247	85.9
Diseases of the heart (410-443)..	22,653	76.3	Certain diseases of early infancy (760-776) .....	1,221	46.7
Malaria (110-117).....	19,639	66.2	Accidents (E800-E962) .....	890	34.0
NICARAGUA - All causes .....	9,792	760.2	VENEZUELA - All causes .....	59,369	1028.4
Gastritis, enteritis, etc. (543, 571, 572) .....	1,191	92.5	Gastritis, enteritis, etc. (543, 571, 572) .....	5,577	96.6
Certain diseases of early infancy (760-776) .....	973	75.5	Certain diseases of early infancy (760-776) .....	4,342	75.2
Malaria (110-117) .....	752	58.4	Diseases of the heart (410-443)..	4,208	72.9
Diseases of the heart (410-443)..	542	42.1	Malignant neoplasms (140-205)...	3,215	55.7
Influenza and pneumonia (480-483, 490-493) .....	516	40.1	Influenza and pneumonia (480-483, 490-493) .....	2,780	48.2
PANAMA - All causes .....	8,268	933.5	ALASKA (d,g)-All causes .....	1,250	598.1
Diseases of the heart (410-443)..	547	61.8	Accidents (E800-E962) .....	287	137.3
Influenza and pneumonia (480-483, 490-493) .....	528	59.6	Diseases of the heart (410-443)..	235	112.4
Certain diseases of early infancy (760-776) .....	511	57.7	Certain diseases of early infancy (760-776).....	126	60.3
Gastritis, enteritis, etc. (543, 571, 572) .....	490	55.3	Malignant neoplasms (140-205)...	87	41.6
Malignant neoplasms (140-205) ..	417	47.1	Vascular lesions affecting central nervous system (330-334)...	66	31.6
PARAGUAY - All causes .....	7,260	453.5	BARBADOS - All causes .....	2,430	1064.8
Certain diseases of early infancy (760-776) .....	496	31.0	Certain diseases of early infancy (760-776).....	363	159.1
Influenza and pneumonia (480-483, 490-493) .....	390	24.4	Vascular lesions affecting central nervous system (330-334)...	310	135.8
Malignant neoplasms (140-205) ..	318	19.9	Diseases of the heart (410-443)..	282	123.6
Diseases of the heart (410-443)..	311	19.4	Influenza and pneumonia (480-483, 490-493).....	215	94.2
Gastritis, enteritis, etc. (543, 571, 572) .....	264	16.5	Malignant neoplasms (140-205)...	202	88.5
PERU (a) - All causes .....	97,196	1216.1	BERMUDA - All causes .....	337	809.6
Influenza and pneumonia (480-483, 490-493) .....	19,923	249.3	Diseases of the heart (410-443)..	93	223.4
Certain diseases of early infancy (760-776) .....	7,864	98.4	Vascular lesions affecting central nervous system (330-334)...	57	136.9
Whooping cough (056).....	7,514	94.0	Malignant neoplasms (140-205)...	55	132.1
Tuberculosis, all forms(001-019)..	5,825	72.9	Certain diseases of early infancy (760-776).....	26	62.5
Gastritis, enteritis, etc. (543, 571, 572) .....	3,883	48.6	Influenza and pneumonia (480-483, 490-493).....	22	52.9
			BRITISH GUIANA(d)-All causes.	5,557	1190.1
			Certain diseases of early infancy (760-776).....	720	154.2

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(f) Data for 1954-55.

(d) Year 1955.

(g) Data corrected for residence.

TABLE 7. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION  
IN THE AMERICAS, 1956 (Continued)

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
<b>BRITISH GUIANA (Continued)</b>			<b>MARTINIQUE - All causes.....</b>		
Gastritis, enteritis, etc. (543, 571, 572) .....	537	115.0	Certain diseases of early infancy (760-776).....	140	55.3
Diseases of the heart (410-443).....	517	110.7	Tuberculosis, all forms (001-019).....	106	41.9
Influenza and pneumonia (480-483, 490-493).....	314	67.2	Influenza and pneumonia (480-483, 490-493).....	96	37.9
Vascular lesions affecting central nervous system (330-334).....	302	64.7	Gastritis, enteritis, etc. (543, 571, 572).....	89	35.2
<b>BRITISH HONDURAS - All causes.</b>			<b>CONGENITAL MALFORMATIONS</b>		
Certain diseases of early infancy (760-776) .....	81	99.0	(750-759).....	61	24.1
Gastritis, enteritis, etc. (543, 571, 572) .....	79	96.6	<b>PUERTO RICO(d) - All causes</b>		
Diseases of the heart (410-443).....	55	67.3	Diseases of the heart (410-443).....	2,244	99.2
Influenza and pneumonia (480-483, 490-493).....	41	50.1	Gastritis, enteritis, etc. (543, 571, 572).....	1,709	75.5
Malignant neoplasms (140-205).....	39	47.7	Malignant neoplasms (140-205).....	1,592	70.3
<b>CANAL ZONE - All causes</b>			<b>CERTAIN DISEASES OF EARLY</b>		
Diseases of the heart (410-443).....	25	67.0	infancy (760-776).....	1,433	63.3
Certain diseases of early infancy (760-776).....	18	48.3	Influenza and pneumonia (480-483, 490-493).....	905	40.0
Malignant neoplasms (140-205).....	18	48.3	<b>TRINIDAD AND TOBAGO</b>		
Vascular lesions affecting central nervous system (330-334).....	15	40.2	All causes.....	7,136	961.1
Accidents (E800-E962).....	14	37.5	Diseases of the heart (410-443).....	1,212	163.2
<b>HAWAII (h) - All causes.....</b>			<b>CERTAIN DISEASES OF EARLY</b>		
Diseases of the heart (410-443).....	1,039	197.5	infancy (760-776).....	946	127.4
Malignant neoplasms (140-205).....	508	96.6	Vascular lesions affecting central nervous system (330-334).....	582	78.4
Vascular lesions affecting central nervous system (330-334).....	272	51.7	Malignant neoplasms (140-205).....	466	62.8
Certain diseases of early infancy (760-776).....	254	48.3	Gastritis, enteritis, etc. (543, 571, 572).....	445	59.9
Accidents (E800-E962).....	162	30.8	<b>WINDWARD ISLANDS - ST. LUCIA</b>		
<b>JAMAICA (i) - All causes.....</b>			<b>All causes.....</b>		
Diseases of the heart (410-443).....	1,308	86.2	Certain diseases of early infancy (760-776).....	186	209.0
Malignant neoplasms (140-205).....	798	52.6	Gastritis, enteritis, etc. (543, 571, 572).....	147	165.2
Influenza and pneumonia (480-483, 490-493).....	705	46.5	Diseases of the heart (410-443).....	105	118.0
Gastritis, enteritis, etc. (543, 571, 572).....	649	42.8	Influenza and pneumonia (480-483, 490-493).....	90	101.1
Vascular lesions affecting central nervous system (330-334).....	649	42.8	Whooping cough (056).....	54	60.7
<b>LEEWARD ISLANDS - ANTIGUA</b>			<b>WINDWARD ISLANDS - ST.</b>		
All causes.....	497	931.7	<b>VINCENT (d) - All causes....</b>		
Certain diseases of early infancy (760-776).....	56	105.0	Certain diseases of early infancy (760-776).....	337	443.7
Arteriosclerosis (450).....	52	97.5	Gastritis, enteritis, etc. (543, 571, 572).....	148	194.8
Vascular lesions affecting central nervous system (330-334).....	46	86.2	Diseases of the heart (410-443).....	96	126.4
Influenza and pneumonia (480-483, 490-493).....	39	73.1	Bronchitis (500-502).....	55	72.4
Gastritis, enteritis, etc. (543, 571, 572).....	37	69.4	Influenza and pneumonia (480-483, 490-493).....	38	50.0

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(d) Year 1955.

(h) Excluding 62 deaths among military personnel stationed in the Territory.

(i) Year 1954.

was true for certain causes such as whooping cough and malaria which were stated more frequently on death certificates without medical certification. Continuous efforts need to be made to have causes of death medically certified by the physician in attendance or by health officials or medical examiners. Care-

ful investigations of causes of death are important in order that the basic information which is essential for health planning be provided. Provisions for medical certification can be included in the activities of health services which are being developed and extended in the Americas.

TABLE 8. NUMBER AND PERCENTAGE OF DEATHS WITH MEDICAL CERTIFICATION IN THE AMERICAS, 1956

Area	Number of Deaths	With Medical Certification		Area	Number of Deaths	With Medical Certification	
		Number	Per Cent			Number	Per Cent
Brazil (a).....	71,158	71,113	99.9	Uruguay (c).....	20,611	20,338	98.7
Canada (b).....	131,585	131,585	100.0	Venezuela .....	59,369	37,833	63.7
Chile .....	83,744	47,771	57.0	Alaska (c,f).....	1,250	957	76.6
Colombia .....	171,984	76,878	44.7	Barbados .....	2,430	2,388	98.3
Costa Rica .....	9,518	6,075	63.8	Bermuda .....	337	337	100.0
Dominican Republic(c).	22,864	10,108	44.2	British Honduras.....	821	492	59.9
Ecuador (c).....	57,226	d) 16,135	28.2	Canal Zone .....	155	155	100.0
El Salvador (c).....	31,151	3,770	12.1	Hawaii (g) .....	3,085	3,085	100.0
Guatemala (c).....	67,088	8,695	13.0	Leeward Islands:			
Mexico (c).....	407,522	237,158	58.2	Antigua.....	497	497	100.0
Nicaragua.....	9,792	4,746	48.5	Puerto Rico (c).....	16,243	8,870	54.6
Panama.....	8,268	3,485	42.2	Trinidad and Tobago...	7,136	7,124	99.8
Paraguay .....	7,260	3,045	41.9				
Peru (e).....	97,196	30,395	31.3				

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Year 1955.

(d) Data from *Boletín Estadístico*, Vol. 2, Nº 3 (October 1957).

(e) Year 1953.

(f) Data corrected for residence.

(g) Excluding 62 deaths among military personnel stationed in the Territory.

TABLE 9. NUMBER OF DEATHS FROM SPECIFIC CAUSES WITH AND WITHOUT MEDICAL CERTIFICATION IN THE AMERICAS, 1956

Cause*	Brazil (a)		Canada (b)		Chile		Colombia		Costa Rica	
	With	Without	With	Without	With	Without	With	Without	With	Without
Total deaths	71,113	45	131,585	-	47,771	35,973	76,878	95,106	6,075	3,443
Tuberculosis, all forms . . . . .001-019	4,026	-	1,228	-	2,723	1,406	2,954	533	187	11
Syphilis and its sequelae . . . . .020-029	547	-	209	-	119	22	275	22	34	1
Typhoid fever . . . . .040	94	-	9	-	132	17	385	176	12	4
Paratyphoid fever and other										
Salmonella infections . . . . .041,042	3	-	7	-	16	2	54	2	6	-
Dysentery, all forms . . . . .045-048	466	-	29	-	56	29	335	367	41	10
Scarlet fever and streptococcal										
sore throat . . . . .050,051	5	-	24	-	13	1	5	5	1	1
Diphtheria . . . . .055	151	-	8	-	112	31	276	116	22	4
Whooping cough . . . . .056	224	-	116	-	164	190	709	3,237	26	62
Meningococcal infections . . . . .057	113	-	84	-	31	6	27	4	4	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	54	-	1	-	-	-	100	17	4	-
Tetanus . . . . .061	522	-	5	-	52	4	217	135	72	118
Yaws . . . . .073	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	72	-	51	-	73	14	34	40	5	3
Smallpox . . . . .084	24	-	-	-	1	-	52	105	-	-
Measles . . . . .085	241	-	162	-	306	146	598	2,099	27	45
Yellow fever . . . . .091	-	-	-	-	-	-	14	-	-	-
Rabies . . . . .094	22	-	-	-	4	-	30	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	1	5	8	4	-	-
Typhus, other forms . . . . .101-108	3	-	1	-	3	-	88	807	1	-
Malaria . . . . .110-117	75	-	-	-	-	-	326	1,313	14	97
Infestation by helminths . . . . .123-130	...	-	...	-	62	4	1,430	2,833	80	211
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	995	-	366	-	314	78	470	513	71	1
Malignant neoplasms, etc. . . . .140-205	6,385	-	20,853	-	4,813	1,789	4,336	1,102	667	80
Benign and unspecified neoplasms . . . . .210-239	221	-	356	-	134	51	849	462	23	16
Diseases of thyroid gland . . . . .250-254	44	-	129	-	13	4	31	6	1	-
Diabetes mellitus . . . . .260	791	-	1,819	-	336	71	329	96	61	8
Avitaminoses and other metabolic										
diseases . . . . .280-289	348	-	182	-	179	199	1,729	2,326	68	17
Anaemias . . . . .290-293	111	-	355	-	81	32	1,001	1,573	73	80
Vascular lesions affecting central										
nervous system . . . . .330-334	3,725	-	14,443	-	2,955	1,287	2,119	960	263	33
Nonmeningococcal meningitis . . . . .340	356	-	242	-	266	191	1,113	902	52	3
Rheumatic fever . . . . .400-402	260	-	109	-	204	59	73	8	22	-
Diseases of the heart . . . . .410-443	12,708	-	43,949	-	6,539	1,475	6,735	2,841	575	90
Arteriosclerosis . . . . .450	1,337	-	2,344	-	614	222	533	50	49	1
Other diseases of circulatory										
system . . . . .444-447,451-468	1,057	-	2,076	-	813	131	742	208	51	15
Influenza and pneumonia . . . . .480-483,490-493	5,016	-	5,688	-	4,611	10,168	4,890	7,159	473	81
Bronchitis . . . . .500-502	312	-	719	-	195	104	1,432	5,603	39	167
Other diseases of respiratory										
system . . . . .470-475,510-527	902	-	1,423	-	382	215	657	376	57	6
Ulcer of stomach and duodenum . . . . .540,541	290	-	777	-	153	109	339	248	30	6
Appendicitis . . . . .550-553	82	-	188	-	56	14	96	95	5	1
Intestinal obstruction & hernia . . . . .560,561,570	405	-	834	-	371	83	482	142	47	4
Gastritis, enteritis, etc. . . . .543,571,572	9,421	-	905	-	3,095	2,550	8,727	6,911	795	426
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	1,531	-	1,991	-	2,256	601	2,611	4,526	153	82
Nephritis and nephrosis . . . . .590-594	1,257	-	2,143	-	679	102	1,882	473	101	1
Other diseases of genito-urinary										
system . . . . .600-637	588	-	1,379	-	281	38	251	107	40	4
Complications of pregnancy, childbirth and puerperium . . . . .640-689	519	-	275	-	540	234	691	982	64	26
Congenital malformations . . . . .750-759	908	-	2,829	-	457	109	802	252	106	8
Certain diseases of early infancy . . . . .760-776	5,761	-	7,509	-	5,694	5,085	6,319	8,818	753	248
Senility, ill-defined and unknown . . . . .780-795	1,218	37	1,767	-	1,433	7,702	10,743	30,602	409	1,256
All other diseases . . . . .Residual	3,287	-	3,369	-	1,445	889	1,314	2,014	190	93
Accidents . . . . .E800-E962	2,929	8	9,234	-	3,354	355	4,026	2,274	246	109
Suicide and self-inflicted										
injury . . . . .E963,E970-E979	1,075	-	1,218	-	557	49	57	57	21	5
Homicide and operations										
of war . . . . .E964,E965,E980-E999	632	-	180	-	1,083	100	3,582	1,605	34	9

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Data for Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

TABLE 9. NUMBER OF DEATHS FROM SPECIFIC CAUSES WITH AND WITHOUT MEDICAL CERTIFICATION IN THE AMERICAS, 1956 (Continued)

Cause*	Dominican Republic (c)		Ecuador (c,d)		El Salvador (c)		Guatemala (c)		Mexico (c)	
	With	Without	With	Without	With	Without	With	Without	With	Without
Total deaths	10,108	12,756	16,135	41,091	3,770	27,381	8,695	58,393	237,158	170,364
Tuberculosis, all forms . . . . .001-019	353	415	875	338	308	148	728	583	6,399	1,309
Syphilis and its sequelae . . . . .020-029	140	54	67	4	13	235	7	4	1,033	86
Typhoid fever . . . . .040	86	96	116	820	21	24	71	261	1,939	1,401
Paratyphoid fever and other										
Salmonella infections . . . . .041,042	...	...	27	8	1	1	26	-	719	60
Dysentery, all forms . . . . .045-048	46	103	70	217	18	115	119	2,671	2,215	2,748
Scarlet fever and streptococcal sore throat . . . . .050,051	-	-	-	5	-	1	-	8	113	125
Diphtheria . . . . .055	54	38	103	14	10	4	13	26	335	192
Whooping cough . . . . .056	42	102	692	7,376	2	215	55	2,871	1,488	5,974
Meningococcal infections . . . . .057	1	-	11	1	-	-	5	-	82	4
Plague . . . . .058	-	-	21	64	-	-	-	-	-	-
Leprosy . . . . .060	...	...	1	2	1	-	3	2	24	50
Tetanus . . . . .061	...	...	294	414	57	286	44	35	1,145	810
Yaws . . . . .073	...	...	-	-	-	-	-	-	...	...
Acute poliomyelitis . . . . .080	-	-	12	21	3	1	10	26	277	65
Smallpox . . . . .084	-	-	48	171	-	-	-	-	-	-
Measles . . . . .085	38	71	376	2,344	29	628	31	1,450	2,509	7,207
Yellow fever . . . . .091	-	-	g) 1	1	-	-	-	-	-	-
Rabies . . . . .094	-	-	32	4	1	-	8	1	46	8
Louse-borne epidemic typhus . . . . .100	-	-	12	3	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-	4	4	-	-	1	21	136	198
Malaria . . . . .110-117	290	558	145	1,266	39	916	208	6,623	1,878	17,761
Infestation by helminths . . . . .123-130	...	...	130	272	28	492	107	4,950	398	230
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	462	1,309	259	202	47	114	81	572	1,837	1,699
Malignant neoplasms, etc. . . . .140-205	284	190	798	226	216	210	579	255	7,833	853
Benign and unspecified neoplasms . . . . .210-239	99	22	42	47	2	26	13	49	1,091	512
Diseases of thyroid gland . . . . .250-254	...	...	7	1	21	86	4	-	h) 19	7
Diabetes mellitus . . . . .260	33	15	50	11	16	16	43	19	1,411	160
Avitaminoses and other metabolic diseases . . . . .280-289	...	...	143	44	296	488	603	113	i) 7,083	1,954
Anaemias . . . . .290-293	169	151	150	594	34	186	163	752	1,610	1,447
Vascular lesions affecting central nervous system . . . . .330-334	209	68	259	179	95	104	187	359	4,513	750
Nonmeningococcal meningitis . . . . .340	121	34	177	58	44	11	101	142	1,204	310
Rheumatic fever . . . . .400-402	1	-	30	2	3	4	8	-	184	32
Diseases of the heart . . . . .410-443	1,026	320	996	554	149	243	595	360	19,776	2,877
Arteriosclerosis . . . . .450	...	...	109	7	12	10	72	13	3,530	609
Other diseases of circulatory system . . . . .444-447,451-468	62	65	165	90	38	55	70	35	-	-
Influenza and pneumonia . . . . .480-483,490-493	425	423	1,131	2,331	140	768	623	7,501	36,871	21,457
Bronchitis . . . . .500-502	305	434	1,073	4,651	17	629	64	2,059	3,385	5,080
Other diseases of respiratory system . . . . .470-475,510-527	...	...	160	236	42	186	81	297	2,586	1,205
Ulcer of stomach and duodenum . . . . .540,541	14	4	53	41	6	37	14	54	903	141
Appendicitis . . . . .550-553	9	9	9	15	9	4	7	28	236	70
Intestinal obstruction & hernia . . . . .560,561,570	58	10	199	198	47	26	91	80	1,567	189
Gastritis, enteritis, etc. . . . .543,571,572	1,180	1,465	2,576	1,352	420	4,531	1,005	7,803	42,168	25,395
Other diseases of digestive system . . . . .530-539										
542,544,545,573-587	86	12	393	807	156	1,927	298	1,115	13,071	5,336
Nephritis and nephrosis . . . . .590-594	120	54	343	64	24	15	100	300	4,816	221
Other diseases of genito-urinary system . . . . .600-637	1	-	61	32	18	35	24	45	390	153
Complications of pregnancy, childbirth and puerperium . . . . .640-689	129	-	162	349	74	145	76	387	1,296	1,570
Congenital malformations . . . . .750-759	114	4	94	14	18	8	59	40	2,157	254
Certain diseases of early infancy . . . . .760-776	1,317	1,498	1,680	2,046	516	2,152	740	5,062	24,011	18,207
Senility, ill-defined and unknown . . . . .780-795	1,351	3,815	807	11,704	281	9,764	693	9,473	11,298	28,896
All other diseases . . . . .Residual	1,163	1,158	308	966	193	1,123	258	1,086	4,889	3,983
Accidents . . . . .E800-E962	212	191			187	458	486	639	10,055	4,237
Suicide and self-inflicted injury . . . . .E963, E970-E979	42	35	864	921	22	196	30	61	269	113
Homicide and operations of war . . . . .E964, E965, E980-E999	66	33			96	758	91	162	6,363	4,419

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(c) Year 1955.

(d) Data from *Boletín Estadístico*, Vol. 2, Nº 3 (October 1957).

(g) Data not confirmed.

(h) Detailed list numbers 250-252.

(i) Detailed list numbers 280-286.

TABLE 9. NUMBER OF DEATHS FROM SPECIFIC CAUSES WITH AND WITHOUT MEDICAL CERTIFICATION IN THE AMERICAS, 1956 (Continued)

Cause*	Nicaragua		Panama		Paraguay		Uruguay (c)		Venezuela	
	With	Without	With	Without	With	Without	With	Without	With	Without
Total deaths	4,746	5,046	3,485	4,783	3,045	4,215	20,338	273	37,833	21,536
Tuberculosis, all forms . . . . .001-019	53	35	174	118	150	92	635	-	1,723	-
Syphilis and its sequelae . . . . .020-029	-	1	24	3	27	46	192	-	287	-
Typhoid fever . . . . .040	32	15	3	-	12	1	23	-	63	-
Paratyphoid fever and other										
Salmonella infections . . . . .041,042	192	207	-	-	3	3	-	-	19	-
Dysentery, all forms . . . . .045-048	18	21	7	10	21	50	1	-	292	-
Scarlet fever and streptococcal										
sore throat . . . . .050,051	6	6	-	-	-	-	6	-	5	-
Diphtheria . . . . .055	-	-	1	1	9	4	8	-	73	-
Whooping cough . . . . .056	23	50	16	202	9	8	42	-	308	-
Meningococcal infections . . . . .057	-	-	3	-	5	6	6	-	8	-
Plague . . . . .058	-	-	-	-	-	-	-	-	1	-
Leprosy . . . . .060	-	-	1	-	4	2	8	-	22	-
Tetanus . . . . .061	114	194	28	159	71	97	37	-	595	-
Yaws . . . . .073	-	-	-	2	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	2	-	11	3	5	1	38	-	29	-
Smallpox . . . . .084	-	-	-	-	-	1	2	-	-	-
Measles . . . . .085	55	50	8	53	8	8	11	-	221	-
Yellow fever . . . . .091	-	-	1	-	-	-	-	-	3	-
Rabies . . . . .094	-	-	-	-	5	-	-	-	19	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-	1	-	-	-	-	-	4	-
Malaria . . . . .110-117	400	352	16	136	3	16	-	-	12	-
Infestation by helminths . . . . .123-130	111	162	48	168	17	30	...	-	...	-
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083,										
086-090,092,093,095,096,120-122,131-138	27	19	23	6	44	21	104	-	676	-
Malignant neoplasms, etc. . . . .140-205	141	29	325	92	239	79	3,910	-	3,215	-
Benign and unspecified neoplasms . . . . .210-239	50	25	22	21	88	33	88	-	96	-
Diseases of thyroid gland . . . . .250-254	4	1	5	-	5	-	13	-	16	-
Diabetes mellitus . . . . .260	33	4	52	3	36	7	358	-	281	-
Avitaminoses and other metabolic										
diseases . . . . .280-289	14	3	30	13	11	5	11	-	874	-
Anaemias . . . . .290-293	88	31	40	138	26	29	64	-	181	-
Vascular lesions affecting central										
nervous system . . . . .330-334	108	40	280	77	133	38	2,247	-	1,295	-
Nonmeningococcal meningitis . . . . .340	54	15	31	10	34	25	74	-	324	-
Rheumatic fever . . . . .400-402	-	-	5	-	16	5	32	-	39	-
Diseases of the heart . . . . .410-443	340	202	460	87	255	56	3,593	-	4,208	-
Arteriosclerosis . . . . .450	-	-	99	4	97	17	...	-	291	-
Other diseases of circulatory										
system . . . . .444-447,451-468	21	10	85	35	51	21	773	-	401	-
Influenza and pneumonia . . . . .480-483,490-493	295	221	183	345	157	233	864	-	2,780	-
Bronchitis . . . . .500-502	13	9	20	276	29	71	165	-	426	-
Other diseases of respiratory										
system . . . . .470-475,510-527	14	57	25	98	42	15	194	-	307	-
Ulcer of stomach and duodenum . . . . .540,541	8	1	20	6	5	-	110	-	76	-
Appendicitis . . . . .550-553	11	9	4	4	13	4	58	-	51	-
Intestinal obstruction & hernia . . . . .560,561,570	27	6	32	11	63	32	141	-	278	-
Gastritis, enteritis, etc. . . . .543,571,572	776	415	312	178	164	100	524	-	5,577	-
Other diseases of digestive system . . . . .530-539										
542,544,545,573-587	357	225	71	169	130	110	458	-	859	-
Nephritis and nephrosis . . . . .590-594	41	15	76	28	60	24	271	-	843	-
Other diseases of genito-urinary										
system . . . . .600-637	12	4	39	7	42	13	188	-	200	-
Complications of pregnancy,										
childbirth and puerperium . . . . .640-689	38	89	34	56	48	32	89	-	382	-
Congenital malformations . . . . .750-759	5	-	43	1	28	5	219	-	493	-
Certain diseases of early infancy . . . . .760-776	380	593	430	81	356	140	1,221	-	4,342	-
Senility, ill-defined and unknown . . . . .780-795	616	1,307	54	1,838	233	2,507	1,371	265	1,252	21,153
All other diseases . . . . .Residual	106	135	98	146	88	79	890	-	1,416	-
Accidents . . . . .E800-E962	118	269	187	177	145	87	885	5	2,367	311
Suicide and self-inflicted										
injury . . . . .E963, E970-E979	-	12	23	5	9	7	295	2	318	40
Homicide and operations										
of war . . . . .E964, E965, E980-E999	43	207	35	16	49	55	119	1	285	32

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(c) Year 1955.



TABLE 9. NUMBER OF DEATHS FROM SPECIFIC CAUSES WITH AND WITHOUT MEDICAL CERTIFICATION IN THE AMERICAS, 1956 (Continued)

Cause*	Alaska (c,e)		Barbados		Bermuda		British Honduras		Canal Zone	
	With	Without	With	Without	With	Without	With	Without	With	Without
Total deaths	957	293	2,388	42	337	-	492	329	155	-
Tuberculosis, all forms . . . . .001-019	31	23	43	-	2	-	19	-	6	-
Syphilis and its sequelae . . . . .020-029	5	-	47	-	2	-	2	-	2	-
Typhoid fever . . . . .040	-	-	7	-	-	-	2	-	-	-
Paratyphoid fever and other										
Salmonella infections . . . . .041,042	-	-	-	-	-	-	-	-	1	-
Dysentery, all forms . . . . .045-048	-	-	4	-	-	-	18	-	-	-
Scarlet fever and streptococcal sore throat . . . . .050,051	-	-	-	-	-	-	-	-	-	-
Diphtheria . . . . .055	-	-	5	-	-	-	1	-	-	-
Whooping cough . . . . .056	1	2	23	-	-	-	-	-	-	-
Meningococcal infections . . . . .057	-	-	4	-	-	-	9	-	-	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	1	-	-	-	-	-	-	-
Tetanus . . . . .061	-	-	21	-	-	-	2	-	-	-
Yaws . . . . .073	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	5	-	-	-	-	-	-	-	2	-
Smallpox . . . . .084	-	-	-	-	-	-	-	-	-	-
Measles . . . . .085	-	-	-	-	-	-	-	-	-	-
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	-	-	-	-	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-	-	-	-	-	-	-	-	-
Malaria . . . . .110-117	-	-	-	-	-	-	5	-	-	-
Infestation by helminths . . . . .123-130	...	...	...	-	...	-	...	-	...	-
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	3	1	17	-	2	-	2	-	1	-
Malignant neoplasms, etc. . . . .140-205	81	6	202	-	55	-	39	-	18	-
Benign and unspecified neoplasms . . . . .210-239	2	2	7	-	-	-	-	-	-	-
Diseases of thyroid gland . . . . .250-254	1	-	-	-	-	-	-	-	-	-
Diabetes mellitus . . . . .260	6	-	28	-	2	-	3	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	1	-	29	-	-	-	18	-	2	-
Anaemias . . . . .290-293	2	-	14	-	-	-	4	-	-	-
Vascular lesions affecting central nervous system . . . . .330-334	61	5	310	-	57	-	35	-	15	-
Nonmeningococcal meningitis . . . . .340	3	2	3	-	-	-	-	-	1	-
Rheumatic fever . . . . .400-402	2	-	4	-	3	-	2	-	-	-
Diseases of the heart . . . . .410-443	211	24	282	-	93	-	55	-	25	-
Arteriosclerosis . . . . .450	8	-	118	-	4	-	21	-	4	-
Other diseases of circulatory system . . . . .444-447,451-468	3	3	37	-	-	-	2	-	6	-
Influenza and pneumonia . . . . .480-483,490-493	40	25	215	-	22	-	41	-	11	-
Bronchitis . . . . .500-502	-	5	21	-	1	-	5	-	-	-
Other diseases of respiratory system . . . . .470-475,510-527	19	17	18	-	-	-	2	-	5	-
Ulcer of stomach and duodenum . . . . .540,541	9	-	13	-	1	-	1	-	1	-
Appendicitis . . . . .550-553	1	-	3	-	-	-	1	-	-	-
Intestinal obstruction & hernia . . . . .560,561,570	7	-	17	-	4	-	6	-	1	-
Gastritis, enteritis, etc. . . . .543,571,572	6	2	83	-	2	-	79	-	1	-
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	17	3	25	-	3	-	4	-	2	-
Nephritis and nephrosis . . . . .590-594	15	1	30	-	2	-	14	-	2	-
Other diseases of genito-urinary system . . . . .600-637	5	1	19	-	2	-	10	-	2	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	3	1	24	-	2	-	16	-	1	-
Congenital malformations . . . . .750-759	26	1	20	-	5	-	13	-	5	-
Certain diseases of early infancy . . . . .760-776	111	15	363	-	26	-	49	32	18	-
Senility, ill-defined and unknown . . . . .780-795	12	44	235	42	22	-	12	10	3	-
All other diseases . . . . .Residual	26	5	78	-	17	-	-	248	4	-
Accidents . . . . .E800-E962	195	92	16	-	5	-	-	37	14	-
Suicide and self-inflicted injury . . . . .E963,E970-E979	26	10	-	-	1	-	-	2	2	-
Homicide and operations of war . . . . .E964,E965,E980-E999	13	3	2	-	2	-	-	-	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(c) Year 1955.

(e) Data corrected for residence.

TABLE 9. NUMBER OF DEATHS FROM SPECIFIC CAUSES WITH AND WITHOUT MEDICAL CERTIFICATION IN THE AMERICAS, 1956 (Continued)

Cause*	Hawaii (f)		Puerto Rico (c)		Trinidad and Tobago	
	With	Without	With	Without	With	Without
Total deaths	3,085	-	8,870	7,373	7,124	12
Tuberculosis, all forms . . . . .001-019	35	-	490	253	169	-
Syphilis and its sequelae . . . . .020-029	11	-	45	18	55	-
Typhoid fever . . . . .040	-	-	2	-	12	-
Paratyphoid fever and other						
Salmonella infections . . . . .041,042	1	-	-	-	-	-
Dysentery, all forms . . . . .045-048	4	-	7	2	29	-
Scarlet fever and streptococcal sore throat . . . . .050,051	1	-	-	-	-	-
Diphtheria . . . . .055	-	-	10	-	6	-
Whooping cough . . . . .056	-	-	10	8	5	-
Meningococcal infections . . . . .057	1	-	11	2	2	-
Plague . . . . .058	-	-	-	-	-	-
Leprosy . . . . .060	1	-	1	-	3	-
Tetanus . . . . .061	2	-	67	1	35	-
Yaws . . . . .073	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	4	-	19	2	-	-
Smallpox . . . . .084	-	-	-	-	-	-
Measles . . . . .085	3	-	17	13	2	-
Yellow fever . . . . .091	-	-	-	-	-	-
Rabies . . . . .094	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-	-	-	-	-
Malaria . . . . .110-117	-	-	-	-	21	-
Infestation by helminths . . . . .123-130	...	-	...	...	...	-
All other infective and parasitic diseases						
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	6	-	145	82	70	-
Malignant neoplasms, etc. . . . .140-205	508	-	1,078	514	466	-
Benign and unspecified neoplasms . . . . .210-239	12	-	7	2	6	-
Diseases of thyroid gland . . . . .250-254	2	-	4	-	-	-
Diabetes mellitus . . . . .260	92	-	86	45	126	-
Avitaminoses and other metabolic diseases . . . . .280-289	4	-	85	70	96	-
Anaemias . . . . .290-293	8	-	68	41	88	-
Vascular lesions affecting central nervous system . . . . .330-334	272	-	624	279	582	-
Nonmeningococcal meningitis . . . . .340	9	-	69	12	25	-
Rheumatic fever . . . . .400-402	-	-	23	5	18	-
Diseases of the heart . . . . .410-443	1,039	-	1,254	990	1,212	-
Arteriosclerosis . . . . .450	32	-	115	138	97	-
Other diseases of circulatory system . . . . .444-447,451-468	45	-	127	60	272	-
Influenza and pneumonia . . . . .480-483,490-493	106	-	497	408	391	-
Bronchitis . . . . .500-502	3	-	39	40	238	-
Other diseases of respiratory system . . . . .470-475,510-527	27	-	92	70	88	-
Ulcer of stomach and duodenum . . . . .540,541	14	-	32	9	27	-
Appendicitis . . . . .550-553	3	-	18	3	16	-
Intestinal obstruction & hernia . . . . .560,561,570	13	-	64	10	41	-
Gastritis, enteritis, etc. . . . .543,571,572	17	-	878	831	445	-
Other diseases of digestive system . . . . .530-539						
542,544,545,573-587	78	-	270	79	151	-
Nephritis and nephrosis . . . . .590-594	64	-	166	114	117	-
Other diseases of genito-urinary system . . . . .600-637	21	-	67	10	100	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	5	-	77	15	68	-
Congenital malformations . . . . .750-759	75	-	216	90	82	-
Certain diseases of early infancy . . . . .760-776	254	-	1,053	380	946	-
Senility, ill-defined and unknown . . . . .780-795	17	-	306	1,830	479	-
All other diseases . . . . .Residual	86	-	348	278	199	12
Accidents . . . . .E800-E962	162	-	251	379	250	-
Suicide and self-inflicted injury . . . . .E963,E970-E979	40	-	88	167	39	-
Homicide and operations of war . . . . .E964,E965,E980-E999	8	-	44	123	50	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(c) Year 1955.

(f) Excluding 62 deaths among military personnel stationed in the Territory.

## CHAPTER II

### Maternal And Child Health

The previous four-year report<sup>(a)</sup> established that nearly all the countries of the Americas have a young population with 40 per cent of the population under 15 years of age in many. Birth rates are high and many of the babies die during infancy or childhood. Therefore to clarify the important problems of infant and child health as well as of maternal health, data have been provided by the countries on causes of mortality in infancy and childhood and of maternal mortality. Also selected data were given regarding specific maternal and child health activities, which are normally a part of the general health programs of the countries. These subjects are covered briefly in this chapter with data in tables in the text and appendix.

#### INFANT MORTALITY

The great variation in the infant death rates in the Americas (Table 10) is due to many factors. In areas where registration of deaths is incomplete, many of the infant deaths are not recorded. Health conditions vary and in many areas infant death rates are in excess of 100 per 1,000 live births. Although the lack of comparability in definitions and procedures and incompleteness of registration affect the quality of the data, the data show that infant death rates are high and that there are major health problems in this period of life.

Deaths for the first year of life (infant deaths) are frequently divided into those that occur during the first month which according to recommended procedures<sup>(b)</sup> is considered under 28 days and those occurring during the remainder of the period, essentially 1-11 months. The deaths which occur under 28 days, the neonatal deaths, are primarily due to conditions present at birth while the deaths during the latter period, termed postneonatal

deaths, are due principally to environmental conditions. Health programs are directed first to the prevention of deaths due to environmental conditions. Neonatal death rates are given in Table 11 for the 4 years and in Table 12 infant death rates for 1956 are divided into neonatal and postneonatal rates. The variation in neonatal death rates is essentially from around 20 to 40 per 1,000 live births. In a few areas neonatal death rates are lower than this minimum probably due usually to incomplete registration of deaths. As would be expected of death rates affected by environmental conditions, the variation in the postneonatal death rates was much greater, from 5 to a high rate of 83 per 1,000 live births. In countries where deaths due to environmental conditions have been almost eliminated the proportion of the infant deaths in the neonatal period is high. In fact, in a few areas over two-thirds of the infant deaths were neonatal deaths and less than one-third occurred later. However, in all but 8 of the countries or other areas for which information was available less than one half of the deaths were in the neonatal period.

The causes of infant deaths have been combined for presentation into six major groups (Table 13) from the detailed data provided and presented in Appendix Table B. In presentation of death rates for groups of causes only areas have been included in which 100 or more deaths occurred. In all countries and other areas for which information is available the death rate from the group of causes, congenital malformations and diseases of early infancy, is high. This group includes many conditions present at birth which are not essentially dependent on environmental conditions. The death rates from the three groups, infective and parasitic diseases, respiratory diseases and digestive diseases, vary widely. In many countries and other areas of the Americas, however, these

(a) Summary of Reports on the Health Conditions in the Americas, 1950-1953, Scientific Publications No. 25, Pan American Sanitary Bureau, June 1956.

(b) World Health Organization, 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.

TABLE 10. NUMBER OF INFANT DEATHS WITH RATES PER 1,000 LIVE BIRTHS IN THE AMERICAS,  
1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	29,234	63.6	27,210	60.1	28,431	62.0	27,143	58.5
Bolivia .....	12,465	106.1	...	...	...	...	...	...
Brazil (a) .....	15,274	92.9	16,749	93.1	17,709	98.9	18,131	100.3
Canada (b) .....	14,764	35.4	13,841	31.8	13,767	31.2	14,259	31.7
Chile .....	23,894	99.5	27,804	115.6	28,320	119.2	27,509	109.1
Colombia .....	52,300	111.0	48,734	102.7	53,262	104.2	55,912	103.8
Costa Rica .....	3,956	83.3	3,820	79.3	4,009	82.0	3,685	71.6
Dominican Republic .....	7,049	74.2	7,032	68.3	7,733	73.8	...	...
Ecuador (c) .....	...	...	18,144	118.0	18,840	112.8	...	...
El Salvador .....	8,148	82.7	8,406	82.4	8,054	76.7	7,486	70.3
Guatemala .....	16,086	102.9	14,302	87.9	16,109	101.4	...	...
Honduras .....	4,196	64.0	4,044	60.0	3,927	54.9	...	...
Mexico .....	120,177	95.2	107,853	80.5	114,834	83.3	...	...
Nicaragua .....	3,704	75.0	3,623	70.8	3,473	66.9	3,342	63.5
Panama .....	1,687	53.7	1,745	52.8	1,845	53.5	2,007	55.7
Paraguay .....	1,694	62.3	1,867	76.3	1,915	93.2	1,802	81.7
Peru .....	28,226	98.2	28,348	94.4	...	...	...	...
United States .....	108,405	27.8	106,791	26.6	106,903	26.4	108,300	26.0
Uruguay .....	2,428	51.2	2,459	49.3	2,614	...	...	...
Venezuela .....	17,023	67.8	17,944	68.5	18,979	69.9	18,538	66.7
Alaska (d) .....	286	42.2	247	35.1	278	37.8	...	...
Bahama Islands .....	204	66.8	197	57.8	233	81.9	172	52.3
Barbados .....	1,012	138.6	829	109.4	1,022	134.6	685	96.7
Bermuda .....	30	29.2	42	37.8	40	38.0	44	37.6
British Guiana .....	1,542	79.3	1,437	73.9	1,418	70.3	1,397	68.8
British Honduras .....	261	87.4	302	93.5	344	99.3	257	69.0
Canal Zone .....	51	36.6	29	23.5	30	24.5	30	26.5
French Guiana .....	...	...	...	...	...	...	30	31.1
Guadeloupe .....	470	53.8	483	54.0	562	59.0	461	47.5
Hawaii .....	338	21.0	363	22.4	336	20.6	383	22.4
Jamaica .....	3,280	64.1	3,600	67.1	3,371	60.3	3,158	54.2
Leeward Islands								
Antigua .....	158	93.7	146	88.0	119	63.3	96	50.1
St. Kitts-Nevis-Anguilla .....	166	84.5	155	69.6	168	67.4	126	52.1
Virgin Islands .....	25	78.9	28	91.8	25	86.2	32	100.6
Martinique .....	467	49.2	447	48.2	462	48.5	445	45.4
Netherlands Antilles .....	96	16.4	122	21.0	119	20.6	127	21.9
Puerto Rico .....	4,898	63.3	4,511	57.8	4,368	55.1	4,297	55.5
Trinidad and Tobago .....	1,788	69.9	1,770	60.5	2,052	67.9	1,755	63.9
Virgin Islands (USA) .....	36	41.3	34	38.6	44	47.3	66	68.0
Windward Islands								
Dominica .....	271	128.2	233	99.4	306	120.3	319	132.0
St. Lucia .....	347	113.1	313	101.3	348	98.1	364	101.9
St. Vincent .....	377	122.8	366	117.4	426	118.1	385	106.9

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, Nº 3 (October 1957).

(d) Data not corrected for residence.

TABLE 11. NUMBER OF NEONATAL DEATHS (UNDER 28 DAYS) WITH RATES PER 1,000 LIVE BIRTHS IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	11,576	25.2	11,002	24.3	11,392	24.9	10,764	23.2
Brazil (a) .....	5,197	31.6	5,607	31.2	5,792	32.4	6,471	35.8
Canada (b) .....	8,895	21.3	8,384	19.3	8,498	19.2	9,000	20.0
Chile .....	9,168	38.2	9,461	39.3	9,720	40.9	9,118	36.2
Colombia .....	18,469	39.2	19,487	41.1	21,794	42.6	21,433	39.8
Costa Rica .....	1,161	24.5	1,210	25.1	1,233	25.2	1,200	23.3
Dominican Republic .....	2,876	30.3	2,862	27.8	2,878	27.5	...	...
Ecuador (c) .....	...	...	6,263	40.7	6,505	39.0	...	...
El Salvador .....	2,833	28.8	2,967	29.1	2,907	27.7	2,854	26.8
Guatemala .....	6,982	44.7	6,938	42.6	7,577	47.7	...	...
Honduras .....	690	10.5	840	12.5	1,072	15.0	...	...
Mexico .....	40,309	31.9	38,981	29.1	40,072	29.1	...	...
Nicaragua .....	...	...	904	17.7	894	17.2	759	14.4
Panama .....	689	21.9	837	25.3	889	25.8	953	26.5
Paraguay .....	917	33.7	1,002	40.9	1,070	52.1	989	44.8
United States .....	76,332	19.6	76,724	19.1	77,351	19.1	...	...
Uruguay .....	1,031	21.7	1,108	22.2	1,184	...	...	...
Venezuela .....	7,496	29.9	7,789	29.7	8,137	30.0	7,992	28.8
Alaska (d) .....	160	23.6	141	20.0	159	21.6	...	...
Barbados .....	414	56.7	383	50.6	329	43.3	272	38.4
Bermuda .....	20	19.5	31	27.9	33	31.4	32	27.4
British Guiana .....	611	31.4	581	29.9	687	34.0	...	...
British Honduras .....	113	37.8	121	37.4	116	33.5	97	26.0
French Guiana .....	...	...	...	...	...	...	18	18.6
Hawaii .....	247	15.3	279	17.2	263	16.1	295	17.2
Jamaica .....	1,142	22.3	1,228	22.9	...	...	...	...
Leeward Islands								
Antigua .....	51	30.2	45	27.1	43	22.9	37	19.3
Virgin Islands .....	2	6.3	10	32.8	7	24.1	13	40.9
Netherlands Antilles .....	...	...	...	...	...	...	49	8.5
Puerto Rico .....	2,065	26.7	2,071	26.5	2,030	25.6	...	...
Trinidad and Tobago .....	855	33.4	797	27.2	917	30.3	786	28.6
Virgin Islands (USA) .....	22	25.3	21	23.8	23	24.7	39	40.2
Windward Islands								
St. Lucia .....	88	28.7	78	25.2	78	22.0	84	23.5
St. Vincent .....	46	15.0	74	23.7	82	22.7	86	23.9

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, N<sup>o</sup> 3 (October 1957).

(d) Data not corrected for residence.

TABLE 12. INFANT DEATHS, DEATHS UNDER 28 DAYS AND 28 DAYS-11 MONTHS PER 1,000 LIVE BIRTHS WITH PERCENTAGE OF INFANT DEATHS UNDER 28 DAYS IN THE AMERICAS, 1956

Area	Rates per 1,000 Live Births			Per Cent Under 28 Days	Area	Rates per 1,000 Live Births			Per Cent Under 28 Days
	Under 1 Year (Infant)	Under 28 Days (Neonatal)	1-11 Months (Postneonatal)			Under 1 Year (Infant)	Under 28 Days (Neonatal)	1-11 Months (Postneonatal)	
Argentina.....	58.5	23.2	35.3	39.7	Alaska (e).....	c)37.8	21.6	16.2	57.1
Brazil (a).....	100.3	35.8	64.5	35.7	Barbados.....	96.7	38.4	58.3	39.7
Canada (b).....	31.7	20.0	11.7	63.1	Bermuda.....	37.6	27.4	10.2	72.9
Chile.....	109.1	36.2	72.9	33.2	British Guiana.....	c)70.3	34.0	36.3	48.4
Colombia.....	103.8	39.8	64.0	38.3	British Honduras....	69.0	26.0	43.0	37.7
Costa Rica.....	71.6	23.3	48.3	32.5	French Guiana.....	31.1	18.6	12.5	59.8
Dominican Republic..	c) 73.8	27.5	46.3	37.3	Hawaii.....	22.4	17.2	5.2	76.8
Ecuador.....	c)112.8	39.0	73.8	34.6	Jamaica.....	d)67.1	22.9	44.2	34.1
El Salvador.....	70.3	26.8	43.5	38.1	Leeward Islands:				
Guatemala.....	c)101.4	47.7	53.7	47.0	Antigua.....	50.1	19.3	30.8	38.5
Honduras.....	c) 54.9	15.0	39.9	27.3	Virgin Islands....	100.6	40.9	59.7	40.7
Mexico.....	c) 83.3	29.1	54.2	34.9	Netherlands Antilles	21.9	8.5	13.4	38.8
Nicaragua.....	63.5	14.4	49.1	22.7	Puerto Rico.....	c)55.1	25.6	29.5	46.5
Panama.....	55.7	26.5	29.2	47.6	Trinidad and Tobago..	63.9	28.6	35.3	44.8
Paraguay.....	81.7	44.8	36.9	54.8	Virgin Islands (USA)	68.0	40.2	27.8	59.1
United States.....	c) 26.4	19.1	7.3	72.3	Windward Islands:				
Uruguay.....	d) 49.3	22.2	27.1	45.0	St. Lucia.....	101.9	23.5	78.4	23.1
Venezuela.....	66.7	28.8	37.9	43.2	St. Vincent.....	106.9	23.9	83.0	22.4

- (a) Federal District and seven State capitals.
- (b) Excluding Yukon and Northwest Territories.
- (c) Year 1955.
- (d) Year 1954.
- (e) Data not corrected for residence.

TABLE 13. NUMBER OF INFANT DEATHS WITH RATES PER 1,000 LIVE BIRTHS FOR GROUPS OF CAUSES\*  
IN THE AMERICAS, 1956

Group of Causes	Number Rate		Number Rate		Number Rate		Number Rate	
	Argentina(a)		Brazil(b)		Canada(c)		Chile	
All causes .....	29,234	63.6	18,131	100.3	14,259	31.7	27,509	109.1
Infective and parasitic diseases.....	795	1.7	1,314	7.3	344	0.8	785	3.1
Diseases of the respiratory system.....	5,696	12.4	2,850	15.8	2,055	4.6	8,019	31.8
Diseases of the digestive system .....	2,383	5.2	6,873	38.0	695	1.5	4,341	17.2
Congenital malformations and diseases of early infancy.	11,345	24.7	6,406	35.4	9,807	21.8	10,791	42.8
Other specified causes.....	7,437	16.2	532	2.9	1,127	2.5	1,412	5.6
Ill-defined and unknown causes.....	1,578	3.4	156	0.9	231	0.5	2,161	8.6
	Colombia		Costa Rica		Dominican Republic(d)		Ecuador(d,e)	
All causes .....	55,912	103.8	3,685	71.6	7,733	73.8	4,192	101.1
Infective and parasitic diseases.....	4,481	8.3	392	7.6	1,766	16.8	333	8.0
Diseases of the respiratory system.....	8,569	15.9	435	8.4	611	5.8	686	16.5
Diseases of the digestive system.....	9,934	18.4	926	18.0	1,499	14.3	1,349	32.5
Congenital malformations and diseases of early infancy.	16,095	29.9	1,094	21.3	2,914	27.8	1,351	32.6
Other specified causes.....	3,263	6.1	140	2.7	694	6.6	177	4.3
Ill-defined and unknown causes.....	13,570	25.2	698	13.6	249	2.4	296	7.1
	El Salvador(d)		Guatemala(d)		Mexico(d)		Nicaragua	
All causes .....	8,054	76.7	16,109	101.4	114,834	83.3	3,342	63.5
Infective and parasitic diseases.....	807	7.7	3,393	21.4	12,195	8.9	806	15.3
Diseases of the respiratory system.....	721	6.9	3,369	21.2	29,548	21.4	253	4.8
Diseases of the digestive system.....	1,972	18.8	1,984	12.5	25,074	18.2	890	16.9
Congenital malformations and diseases of early infancy.	2,693	25.6	5,896	37.1	44,421	32.2	978	18.6
Other specified causes.....	105	1.0	316	2.0	3,596	2.6	125	2.4
Ill-defined and unknown causes.....	1,756	16.7	1,151	7.2	-	-	290	5.5
	Panama		Paraguay		Peru(a)		United States(d)	
All causes .....	2,007	55.7	1,802	81.7	28,226	98.2	106,903	26.4
Infective and parasitic diseases.....	349	9.7	243	11.0	5,751	20.0	1,799	0.4
Diseases of the respiratory system.....	290	8.1	186	8.4	7,449	25.9	11,288	2.8
Diseases of the digestive system.....	340	9.4	135	6.1	1,764	6.1	4,730	1.2
Congenital malformations and diseases of early infancy.	546	15.2	521	23.6	8,003	27.8	79,372	19.6
Other specified causes.....	73	2.0	53	2.4	1,567	5.5	6,924	1.7
Ill-defined and unknown causes.....	409	11.4	664	30.1	3,692	12.8	2,790	0.7
	Uruguay(d)		Venezuela		Alaska(d,f)		Barbados	
All causes .....	2,614	...	18,538	66.7	281	38.2	685	96.7
Infective and parasitic diseases.....	124	...	804	2.9	9	1.2	57	8.0
Diseases of the respiratory system.....	290	...	1,598	5.8	58	7.9	128	18.1
Diseases of the digestive system.....	443	...	3,588	12.9	10	1.4	68	9.6
Congenital malformations and diseases of early infancy.	1,358	...	4,729	17.0	151	20.5	372	52.5
Other specified causes.....	150	...	611	2.2	32	4.4	43	6.1
Ill-defined and unknown causes.....	249	...	7,208	25.9	21	2.9	17	2.4
	British Honduras		Hawaii		Jamaica(g)		Martinique	
All causes.....	257	69.0	383	22.4	3,600	67.1	445	45.4
Infective and parasitic diseases.....	13	3.5	4	0.2	246	4.6	66	6.7
Diseases of the respiratory system.....	29	7.8	41	2.4	306	5.7	54	5.5
Diseases of the digestive system.....	45	12.1	8	0.5	402	7.5	59	6.0
Congenital malformations and diseases of early infancy.	94	25.2	311	18.1	678	12.6	164	16.7
Other specified causes.....	76	20.4	19	1.1	1,948	36.3	80	8.2
Ill-defined and unknown causes.....	-	-	-	-	20	0.4	22	2.2
	Puerto Rico(d)		Trinidad and Tobago		Windward Is. St. Vincent(d)			
All causes.....	4,368	55.1	1,755	63.9	426	118.1		
Infective and parasitic diseases.....	121	1.5	55	2.0	36	10.0		
Diseases of the respiratory system.....	400	5.0	264	9.6	51	14.1		
Diseases of the digestive system.....	1,199	15.1	317	11.5	93	25.8		
Congenital malformations and diseases of early infancy.	1,682	21.2	988	36.0	237	65.7		
Other specified causes.....	382	4.8	116	4.2	9	2.5		
Ill-defined and unknown causes.....	584	7.4	15	0.5	-	-		

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(d) Year 1955.

(g) Year 1954.

(b) Federal District and seven State capitals.

(e) Capital cities of provinces.

(c) Excluding Yukon and Northwest Territories.

(f) Data corrected for residence.

death rates by groups of causes indicate the great need for emphasis on reduction of mortality from infectious, respiratory and digestive diseases.

### FETAL DEATHS

Fetal deaths as well as infant deaths are important in considering problems in maternal and child health. According to internationally recommended procedures a single fetal death certificate should be sufficient.<sup>(c)</sup> A death would be classified as a fetal death if it occurred prior to the complete expulsion or extraction of the fetus from its mother. There is considerable variation in registration procedures. However, in many of the countries the minimum period of gestation is 28 weeks.<sup>(d)</sup> In a few countries deaths of infants occurring within 24 hours or in others prior to registration are classified as fetal deaths. The size of fetal death rates given in Table 14 varies considerably dependent on conditions of the mother resulting in fetal death, registration practices, accuracy and completeness of registration. In areas where fetal death rates are high probably deaths which occur soon after birth are included as fetal deaths. At least accurate recording of all late fetal deaths (of 28 weeks or more of gestation) should be promoted since it is important not only for knowledge of fetal mortality but also for ensuring accurate birth and infant death rates. The distinction of a live birth and a fetal death according to international recommendations is important. The data presented serve to show the great variation in recording of fetal deaths due essentially to inaccuracies in registration practices.

### MORTALITY IN CHILDHOOD

The usual pattern of mortality consists of high rates in infancy, followed by lower rates in childhood, with the lowest in the life span for the age period 10-14 years. The countries and other areas have provided data

for the 3 age periods 1-4 years, 5-9 years and 10-14 years. In this section the numbers of deaths with age specific death rates for these age groups are given for the 4 years 1953-1956. The detailed data for causes of death for 1956 or for the latest year for which information was available are given in Appendix Tables C, D and E.

The death rates in early childhood (1-4 years) given in Table 15 have a wide range and in 1955 varied from 1.1 per 1,000 population to a rate, nearly 40 times as high, of 42.7 per 1,000 population. The fact that in several areas mortality has been reduced to nearly one death in 1,000 population indicates that tremendous progress can be made in preventing deaths in this age period.

Death rates in early childhood (1-4 years) are presented in Table 16 for the same groups of causes used for the presentation for infant mortality to show the relative importance of these groups. In this presentation of death rates by groups of causes only areas are included with 100 or more deaths. For countries with high death rates in this age period (1-4 years) the death rates due to infective and parasitic diseases, respiratory and digestive diseases are high and account for over two-thirds of the deaths in this age group. As these are causes of death which have practically been eliminated in other areas through application of known measures the great needs of improvement of child health and prevention of such needless mortality in this age period are evident. At the other extreme in countries with low death rates in this age period, only one-third of the deaths are included in these groups of causes. Over half of the deaths are included in the group of other specified causes.

In addition to the study of mortality in these groups of causes, the principal causes of death, utilizing the same method of presentation of data as given for deaths from specific causes for all ages, are used (Table 17). This type of presentation is especially useful for countries where death rates are low. In

(c) Expert Committee on Health Statistics, Technical Report Series No. 25, World Health Organization, Geneva, October 1950.

(d) According to Demographic Yearbook of United Nations 1956, the following countries had a minimum period of gestation specified as follows: at least 6 months, Colombia and Venezuela; at least 5 months, Panama; "reached 20th Week," United States; appearance, Cuba; viable, Mexico.



TABLE 14. NUMBER OF FETAL DEATHS WITH RATES PER 1,000 LIVE BIRTHS IN THE AMERICAS,  
1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	12,585	27.4	12,580	27.8	13,319	29.1	12,616	27.2
Brazil (a).....	8,229	50.0	8,725	48.5	8,643	48.3	7,589	42.0
Canada (b).....	6,971	16.7	7,213	16.6	6,902	15.6	6,961	15.5
Chile.....	7,489	31.2	* 7,449	31.0	* 7,199	30.3	7,313	29.0
Colombia.....	7,669	16.3	9,064	19.1	9,726	19.0	9,526	17.7
Costa Rica.....	1,021	21.5	1,135	23.6	1,096	22.4	1,063	20.6
Dominican Republic.....	2,008	21.1	2,170	21.1	2,222	21.2	...	...
Ecuador (c).....	...	...	4,194	27.3	...	...	...	...
El Salvador.....	842	8.6	743	7.3	918	8.7	978	9.2
Guatemala.....	4,954	31.7	4,949	30.4	5,141	32.4	...	...
Mexico.....	27,380	21.7	28,556	21.3	29,084	21.1	...	...
Panama.....	215	6.8	207	6.3	659	19.1	714	19.8
Paraguay.....	285	10.5	260	10.6	306	14.9	334	15.1
Peru.....	2,396	8.3	2,642	8.8	...	...	...	...
United States.....	69,393	17.8	70,109	17.5	69,153	17.1	...	...
Uruguay.....	1,191	25.1	1,184	23.7	1,195	...	...	...
Venezuela.....	4,917	19.6	5,215	19.9	5,684	20.9	5,803	20.9
Alaska (d).....	107	15.8	106	15.1	110	15.0	105	13.8
Bahama Islands.....	132	43.2	129	37.8	100	35.2	72	21.9
Bermuda.....	29	28.3	33	29.7	33	31.4	31	26.5
British Guiana.....	706	36.3	713	36.7	752	37.3	...	...
British Honduras.....	105	35.2	82	25.4	81	23.4	64	17.2
Canal Zone.....	29	20.8	23	18.7	22	18.0	25	22.1
French Guiana.....	...	...	...	...	...	...	56	58.0
Hawaii.....	617	38.3	793	49.0	1,004	61.6	1,129	65.9
Leeward Islands								
Antigua.....	61	36.2	51	30.7	52	27.7	50	26.1
St. Kitts-Nevis-Anguilla.....	78	39.7	91	40.9	83	33.3	74	30.6
Virgin Islands.....	9	28.4	8	26.2	5	17.2	8	25.2
Martinique.....	518	54.6	509	54.9	532	55.8	452	46.1
Netherlands Antilles.....	222	37.9	222	38.3	245	42.5	232	40.0
Puerto Rico.....	3,269	42.2	3,119	40.0	3,046	38.4	3,045	39.3
Trinidad and Tobago.....	1,041	40.7	1,062	36.3	1,098	36.3	...	...
Virgin Islands (USA).....	32	36.7	36	40.9	39	42.0	37	38.1
Windward Islands								
Dominica.....	31	14.7	53	22.6	65	25.6	45	18.6
St. Lucia.....	134	43.7	128	41.4	155	43.7	140	39.2
St. Vincent.....	97	31.6	119	38.2	91	25.2	96	26.7

\* Provisional.

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, N<sup>o</sup> 3 (October 1957).

(d) Data not corrected for residence.

TABLE 15. NUMBER OF DEATHS OF CHILDREN 1-4 YEARS OF AGE WITH RATES PER 1,000 POPULATION  
IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	7,577	4.7	7,026	4.3	6,907	4.1	6,499	3.8
Bolivia .....	10,432	26.6	...	...	...	...	...	...
Brazil (a) .....	6,359	13.3	6,204	12.6	6,432	12.6	6,140	11.7
Canada (b) .....	2,444	1.7	2,244	1.5	2,253	1.5	2,317	1.5
Chile .....	6,309	9.6	7,620	11.5	7,369	10.9	7,118	10.4
Colombia .....	31,353	19.9	27,054	16.8	29,382	17.8	34,277	20.3
Costa Rica .....	1,692	15.0	1,560	13.3	1,447	11.9	1,240	9.8
Dominican Republic .....	3,981	12.1	3,957	11.7	4,936	14.1	...	...
Ecuador (c) .....	...	...	13,584	29.4	13,783	28.8	...	...
El Salvador .....	7,096	29.1	8,153	32.4	7,913	30.4	6,096	22.7
Guatemala .....	20,686	51.5	13,901	33.5	18,260	42.7	...	...
Honduras .....	4,153	22.1	3,667	18.9	4,590	22.9	...	...
Mexico .....	99,888	29.0	69,898	19.8	87,473	24.0	...	...
Nicaragua .....	...	...	2,186	15.0	1,867	12.4	1,455	9.3
Panama .....	1,265	12.1	1,120	10.5	1,138	10.3	1,161	10.2
Paraguay .....	726	3.8	657	3.3	727	3.6	790	3.8
Peru .....	18,834	19.7	19,087	19.6	...	...	...	...
United States .....	18,235	1.3	16,931	1.2	16,684	1.1	...	...
Uruguay .....	362	...	354	...	353	...	...	...
Venezuela .....	7,666	10.8	8,420	11.6	9,178	12.3	9,501	12.5
Alaska (d) .....	74	3.8	70	3.6	44	2.2	...	...
Barbados .....	244	12.0	105	5.1	209	9.9	125	6.0
Bermuda .....	13	3.2	...	...	5	1.2	3	0.7
British Guiana .....	608	12.7	531	10.8	531	10.5	...	...
British Honduras .....	84	10.8	146	18.2	165	19.9	88	10.3
Canal Zone .....	...	...	...	...	6	1.5	1	0.3
French Guiana .....	...	...	...	...	...	...	22	10.0
Hawaii .....	71	1.5	62	1.2	63	1.2	52	1.0
Jamaica .....	1,565	10.4	2,004	13.0	...	...	...	...
Leeward Islands								
Antigua .....	60	...	61	...	29	...	28	...
St. Kitts-Nevis-Anguilla .....	75	14.2	60	11.1	59	10.7	52	9.2
Virgin Islands .....	4	...	4	...	3	...	9	...
Martinique .....	265	9.7	255	9.1	245	8.5	245	8.3
Netherlands Antilles .....	27	1.3	32	1.5	32	1.5	36	1.7
Puerto Rico .....	2,124	7.2	1,674	5.6	1,365	4.5	...	...
Trinidad and Tobago .....	370	4.7	350	4.3	354	4.3	412	4.8
Virgin Islands (USA) .....	8	2.5	12	4.3	9	3.2	13	4.7
Windward Islands								
Dominica .....	114	18.3	158	24.5	182	27.3	236	35.6
St. Lucia .....	e) 506	39.9	e) 456	35.3	e) 475	36.0	e) 534	39.7
St. Vincent .....	229	27.6	308	36.4	232	26.6	146	16.3

(a) Federal District and seven State capitals. Data for São Paulo incomplete.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, N° 3 (October 1957).

(d) Data not corrected for residence.

(e) Age group 0-4 years.

TABLE 16. NUMBER OF DEATHS OF CHILDREN 1-4 YEARS OF AGE WITH RATES PER 1,000 POPULATION FOR GROUPS OF CAUSES\* IN THE AMERICAS, 1956

Group of Causes	Number Rate		Number Rate		Number Rate		Number Rate		Number Rate	
	Argentina(a)		Brazil(b)		Canada(c)		Chile		Colombia	
All causes.....	7,577	4.7	6,140	11.7	2,317	1.5	7,118	10.4	34,277	20.3
Infective and parasitic diseases.....	559	0.3	1,067	2.0	229	0.1	813	1.2	7,557	4.5
Diseases of the respiratory system.....	1,336	0.8	1,283	2.4	457	0.3	2,841	4.2	6,316	3.7
Diseases of the digestive system.....	566	0.4	2,382	4.5	146	0.1	1,236	1.8	7,998	4.7
Congenital malformations and diseases of early infancy.....	981	0.6	127	0.2	251	0.2	517	0.8	65	0.0
Other specified causes.....	3,169	2.0	1,203	2.3	1,199	0.8	1,047	1.5	5,494	3.3
Ill-defined and unknown causes.....	966	0.6	78	0.1	35	0.0	664	1.0	6,847	4.1
	Costa Rica		Dominican Republic(d)		Ecuador (d,e,f)		El Salvador (d)		Guatemala (d)	
All causes.....	1,240	9.8	4,936	14.1	2,108	18.7	7,913	30.4	18,260	42.7
Infective and parasitic diseases.....	316	2.5	924	2.6	317	2.8	1,424	5.5	8,348	19.5
Diseases of the respiratory system.....	178	1.4	547	1.6	488	4.3	465	1.8	2,821	6.6
Diseases of the digestive system.....	277	2.2	1,004	2.9	844	7.5	2,831	10.9	4,346	10.2
Congenital malformations and diseases of early infancy.....	15	0.1	19	0.1	13	0.1	-	-	4	0.0
Other specified causes.....	196	1.6	1,079	3.1	233	2.1	586	2.3	841	2.0
Ill-defined and unknown causes.....	258	2.0	1,363	3.9	213	1.9	2,607	10.0	1,900	4.4
	Mexico(d)		Nicaragua		Panama		Paraguay		Peru(a)	
All causes.....	87,473	24.0	1,455	9.3	1,161	10.2	790	3.8	18,834	19.7
Infective and parasitic diseases.....	20,595	5.7	634	4.1	363	3.2	118	0.6	5,563	5.8
Diseases of the respiratory system.....	18,042	5.0	125	0.8	250	2.2	112	0.5	4,909	5.1
Diseases of the digestive system.....	31,221	8.6	297	1.9	165	1.5	158	0.8	1,857	1.9
Congenital malformations and diseases of early infancy.....	146	0.0	-	-	4	0.0	7	0.0	63	0.1
Other specified causes.....	10,364	2.8	112	0.7	111	1.0	95	0.5	2,086	2.2
Ill-defined and unknown causes.....	7,105	2.0	287	1.8	268	2.4	300	1.5	4,356	4.6
	United States(d)		Uruguay(d)		Venezuela		Barbados		Jamaica(g)	
All causes.....	16,684	1.1	353	...	9,501	12.5	125	6.0	2,004	13.0
Infective and parasitic diseases.....	1,509	0.1	62	...	913	1.2	14	0.7	304	2.0
Diseases of the respiratory system.....	3,018	0.2	71	...	1,020	1.3	44	2.1	294	1.9
Diseases of the digestive system.....	1,958	0.1	60	...	1,756	2.3	10	0.5	213	1.4
Congenital malformations and diseases of early infancy.....	1,805	0.1	23	...	58	0.1	6	0.3	10	0.1
Other specified causes.....	8,851	0.6	103	...	1,394	1.8	31	1.5	1,124	7.3
Ill-defined and unknown causes.....	443	0.0	34	...	4,360	5.7	20	1.0	59	0.4
	Martinique (f)		Puerto Rico (d)		Trinidad and Tobago		Windward Is. St. Vincent (d)			
All causes.....	245	8.3	1,365	4.5	412	4.8	232	26.6		
Infective and parasitic diseases.....	22	0.7	187	0.6	39	0.5	25	2.9		
Diseases of the respiratory system.....	11	0.4	234	0.8	108	1.3	29	3.4		
Diseases of the digestive system.....	27	0.9	399	1.3	84	1.0	51	5.8		
Congenital malformations and diseases of early infancy.....	30	1.0	26	0.1	27	0.3	98	11.2		
Other specified causes.....	143	4.8	289	1.0	144	1.7	29	3.3		
Ill-defined and unknown causes.....	12	0.4	230	0.8	10	0.1	-	-		

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.  
 (a) Year 1953.  
 (b) Federal District and seven State capitals.  
 (c) Excluding Yukon and Northwest Territories.  
 (d) Year 1955.  
 (e) Capital cities of provinces.  
 (f) Rates based on population estimated by P A S B.  
 (g) Year 1954.

TABLE 17. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION OF CHILDREN 1-4 YEARS OF AGE IN THE AMERICAS, 1956

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
ARGENTINA (a) - All causes..	7,577	470.9	COSTA RICA - All causes .....	1,240	981.4
Influenza and pneumonia (480-483, 490-493).....	1,184	73.6	Gastritis, enteritis, etc. (543, 571, 572).....	239	189.2
Congenital malformations and certain diseases of early infancy (750-776).....	981	61.0	Diseases due to helminths (123-130).....	163	129.0
Accidents, poisonings, and violence (E800-E999).....	690	42.9	Influenza and pneumonia (480-483, 490-493).....	128	101.3
Gastritis, enteritis, etc. (543, 571, 572).....	530	32.9	Accidents (E800-E962).....	47	37.2
Nonmeningococcal meningitis(340)	345	21.4	Bronchitis (500-502).....	45	35.6
BRAZIL (b) - All causes.....	6,140	1170.5	DOMINICAN REPUBLIC (d) All causes.....	4,936	1406.4
Gastritis, enteritis, etc. (543, 571, 572).....	2,320	442.3	Gastritis, enteritis, etc. (543, 571, 572).....	990	282.1
Influenza and pneumonia (480-483, 490-493).....	1,184	225.7	Malaria (110-117).....	299	85.2
Accidents (E800-E962).....	324	61.8	Bronchitis (500-502).....	290	82.6
Avitaminoses and other metabolic diseases (280-289).....	263	50.1	Influenza and pneumonia (480-483, 490-493).....	257	73.2
Tuberculosis, all forms(001-019)	195	37.2	Anaemias (290-293).....	119	33.9
CANADA (c) - All causes.....	2,317	150.1	ECUADOR (d,e,f) - All causes.	2,108	1871.8
Accidents (E800-E962).....	702	45.5	Gastritis, enteritis, etc. (543, 571, 572) .....	808	717.5
Influenza and pneumonia (480-483, 490-493).....	336	21.8	Influenza and pneumonia (480-483, 490-493).....	273	242.4
Congenital malformations (750-759).....	247	16.0	Bronchitis (500-502) .....	215	190.9
Malignant neoplasms (140-205)...	196	12.7	Measles (085).....	62	55.1
Gastritis, enteritis, etc. (543, 571, 572).....	81	5.2	Tuberculosis, all forms (001-019)	58	51.5
CHILE - All causes .....	7,118	1042.2	EL SALVADOR (d) - All causes.	7,913	3042.9
Influenza and pneumonia (480-483, 490-493).....	2,725	399.0	Gastritis, enteritis, etc. (543, 571, 572).....	2,255	867.2
Gastritis, enteritis, etc. (543, 571, 572).....	1,140	166.9	Measles (085).....	454	174.6
Certain diseases of early infancy (760-776).....	467	68.4	Avitaminoses and other metabolic diseases (280-289).....	373	143.4
Accidents (E800-E962).....	423	61.9	Diseases due to helminths (123-130) .....	364	140.0
Measles (085).....	243	35.6	Malaria (110-117).....	215	82.7
COLOMBIA - All causes .....	34,277	2033.9	GUATEMALA (d) - All causes...	18,260	4265.6
Gastritis, enteritis, etc. (543, 571, 572).....	6,211	368.5	Gastritis, enteritis, etc. (543, 571, 572).....	4,092	955.9
Influenza and pneumonia (480-483, 490-493).....	3,474	206.1	Diseases due to helminths (123-130).....	3,427	800.6
Bronchitis (500-502).....	2,682	159.1	Influenza and pneumonia (480-483, 490-493).....	2,094	489.2
Diseases due to helminths (123-130).....	2,257	133.9	Whooping cough (056).....	1,430	334.1
Avitaminoses and other metabolic diseases (280-289).....	2,037	120.9	Malaria (110-117).....	1,231	287.6

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(b) Federal District and seven State capitals.

(c) Excluding Yukon and Northwest Territories.

(d) Year 1955.

(e) Capital cities of provinces.

(f) Rates based on population estimated by PASB.

TABLE 17. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION OF CHILDREN 1-4 YEARS OF AGE IN THE AMERICAS, 1956 (Continued)

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
MEXICO (d) - All Causes .....	87,473	2404.3	UNITED STATES (d)		
Gastritis, enteritis, etc. (543, 571, 572) .....	28,529	784.2	All causes .....	16,684	113.6
Influenza and pneumonia (480-483, 490-493).....	15,472	425.3	Accidents (E800-E962).....	4,791	32.6
Measles (085).....	6,394	175.7	Influenza and pneumonia (480-483, 490-493).....	2,196	14.9
Malaria (110-117).....	4,636	127.4	Congenital malformations (750-759).....	1,782	12.1
Avitaminoses and other deficiency states (280-286)....	4,510	124.0	Malignant neoplasms (140-205)...	1,636	11.1
			Gastritis, enteritis, etc. (543, 571, 572).....	650	4.4
NICARAGUA - All Causes .....	1,455	931.1	URUGUAY (d) - All causes ....	353	...
Gastritis, enteritis, etc. (543, 571, 572).....	281	179.8	Influenza and pneumonia (480-483, 490-493).....	56	...
Diseases due to helminths (123-130).....	232	148.5	Gastritis, enteritis, etc. (543, 571, 572).....	55	...
Malaria (110-117).....	171	109.4	Accidents (E800-E962).....	38	...
Influenza and pneumonia (480-483, 490-493).....	101	64.6	Tuberculosis, all forms (001-019).....	16	...
Paratyphoid fever and other Salmonella infections(041,042).	79	50.6	Malignant neoplasms (140-205)...	15	...
			VENEZUELA - All causes .....	9,501	1246.8
PANAMA - All causes .....	1,161	1024.0	Gastritis, enteritis, etc. (543, 571, 572) .....	1,676	219.9
Diseases due to helminths (123-130) .....	148	130.5	Influenza and pneumonia (480-483, 490-493).....	830	108.9
Gastritis, enteritis, etc. (543, 571, 572) .....	143	126.1	Avitaminoses and other metabolic diseases (280-289)...	543	71.3
Influenza and pneumonia (480-483, 490-493).....	117	103.2	Accidents (E800-E962).....	329	43.2
Bronchitis (500-502).....	112	98.8	Whooping cough (056).....	161	21.1
Whooping cough (056).....	97	85.6			
			BARBADOS - All causes .....	125	595.6
PARAGUAY - All causes .....	790	384.0	Influenza and pneumonia (480-483, 490-493).....	39	185.8
Gastritis, enteritis, etc. (543, 571, 572) .....	94	45.7	Avitaminoses and other metabolic diseases (280-289)...	10	47.6
Influenza and pneumonia (480-483, 490-493).....	81	39.4	Gastritis, enteritis, etc. (543, 571, 572).....	9	42.9
Dysentery, all forms (045-048)..	34	16.5	Diphtheria (055).....	4	19.1
Accidents (E800-E962).....	29	14.1	Syphilis and its sequelae (020-029).....	4	19.1
Bronchitis (500-502).....	25	12.2	Whooping cough (056).....	4	19.1
			JAMAICA (g) - All causes.....	2,004	1302.3
PERU (a) - All causes .....	18,834	1972.2	Influenza and pneumonia (480-483, 490-493).....	231	150.1
Influenza and pneumonia (480-483, 490-493).....	4,016	420.5	Avitaminoses and other metabolic diseases (280-289)...	229	148.8
Whooping cough (056).....	2,766	289.6			
Gastritis, enteritis, etc. (543, 571, 572) .....	1,836	192.3			
Bronchitis (500-502).....	848	88.8			
Measles (085) .....	664	69.5			

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(d) Year 1955.

(g) Year 1954.

TABLE 17. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION OF CHILDREN 1-4 YEARS OF AGE IN THE AMERICAS, 1956 (Continued)

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
JAMAICA (Continued)			TRINIDAD AND TOBAGO -		
Gastritis, enteritis, etc. (543, 571, 572).....	180	117.0	All causes .....	412	480.3
Malaria (110-117).....	113	73.4	Influenza and pneumonia (480-483, 490-493).....	83	96.8
Nephritis and nephrosis (590-594).....	54	35.1	Gastritis, enteritis, etc. (543, 571, 572).....	68	79.3
MARTINIQUE (f) - All causes..	245	825.7	Accidents (E800-E962).....	38	44.3
Certain diseases of early infancy (760-776).....	30	101.1	Bronchitis (500-502).....	19	22.1
Gastritis, enteritis, etc. (543, 571, 572).....	27	91.0	Anaemias (290-293).....	18	21.0
Influenza and pneumonia (480-483, 490-493).....	10	33.7	WINDWARD ISLANDS -		
Nonmeningococcal meningitis (340).....	10	33.7	ST. VINCENT (d) - All causes..		
Accidents (E800-E962).....	6	20.2	Certain diseases of early infancy (760-776).....	98	1121.7
PUERTO RICO (d) - All causes..	1,365	451.4	Gastritis, enteritis, etc. (543, 571, 572) .....	51	583.7
Gastritis, enteritis, etc. (543, 571, 572).....	377	124.7	Bronchitis (500-502).....	25	286.1
Influenza and pneumonia (480-483, 490-493).....	201	66.5	Whooping cough (056).....	10	114.5
Accidents (E800-E962).....	61	20.2	Influenza and pneumonia (480-483, 490-493).....	4	45.8
Avitaminoses and other metabolic diseases (280-289)...	55	18.2			
Tuberculosis, all forms (001-019).....	31	10.3			

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(d) Year 1955.

(f) Rates based on population estimated by PASB.

countries with low death rates such as Canada and the United States the first principal cause of death in this age group is accidents; influenza and pneumonia combined is second in importance followed by congenital malformations and malignant neoplasms. In countries with high death rates, gastritis, enteritis, etc. takes first place followed by influenza and pneumonia and other infective and parasitic diseases. Malaria appears as one of the principal causes in 5 countries and in Jamaica. In this age period avitaminoses and other metabolic diseases appears as one of the five principal causes in 5 countries and 3 other areas even though it is known that there is not complete certification of deaths due to deficiency diseases. Methods of prevention of most of the causes of death in this age period are known and thus health programs must be directed to attack on these problems.

In Tables 18 and 19 the death rates for the two 5-year age groups, 5-9 years and 10-14 years are given for the 4 years 1953-1956. In these age groups mortality is lower although considerable variation was noted. Since the principal causes of death in these two age groups were similar the data on principal causes are presented in Table 20 for the 10-year age group 5-14 years. In this period of life, the principal cause of death is accidents in 14 of the 21 countries and other areas for which information was available. However, in many countries and other areas the infectious diseases as malaria and tuberculosis, and gastritis, enteritis, etc. are principal causes of death in this period of childhood. Mortality in childhood can be reduced considerably in nearly all countries.

TABLE 18. NUMBER OF DEATHS OF CHILDREN 5-9 YEARS OF AGE WITH RATES PER 1,000 POPULATION  
IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	1,748	1.0	1,685	0.9	1,714	0.9	1,636	0.8
Bolivia.....	1,849	4.2	...	...	...	...	...	...
Brazil (a).....	908	1.9	873	1.8	903	1.8	968	1.9
Canada (b).....	1,183	0.8	1,103	0.7	1,090	0.6	1,102	0.6
Chile.....	1,301	1.6	1,454	1.7	1,382	1.6	1,233	1.4
Colombia.....	6,586	3.9	5,185	3.0	5,879	3.3	6,395	3.5
Costa Rica.....	342	2.8	331	2.6	249	1.9	264	1.9
Dominican Republic.....	727	2.2	739	2.2	823	2.3	...	...
Ecuador (c).....	...	...	2,762	5.4	2,791	5.3	...	...
El Salvador.....	1,609	5.8	1,852	6.5	1,796	6.1	1,463	4.8
Guatemala.....	4,935	11.8	3,560	8.3	4,260	9.6	...	...
Honduras.....	1,124	5.6	1,187	5.7	1,226	5.7	...	...
Mexico.....	18,390	4.6	14,684	3.6	16,355	3.9	...	...
Nicaragua.....	...	...	433	2.5	386	2.1	372	2.0
Panama.....	329	2.9	316	2.7	321	2.6	325	2.6
Paraguay.....	198	0.9	186	0.8	197	0.9	228	1.0
Peru.....	3,346	2.8	3,144	2.6	...	...	...	...
United States.....	8,565	0.6	8,382	0.5	8,440	0.5	...	...
Uruguay.....	144	...	113	...	126	...	...	...
Venezuela.....	1,519	2.1	1,719	2.3	2,072	2.7	1,975	2.5
Alaska (d).....	13	0.8	20	1.2	18	1.0	...	...
Barbados.....	31	1.3	24	1.0	27	1.1	15	0.6
Bermuda.....	2	0.5	...	...	2	0.5	2	0.4
British Guiana.....	80	1.4	89	1.6	76	1.3	...	...
British Honduras.....	12	1.2	35	3.4	34	3.2	28	2.6
Canal Zone.....	...	...	...	...	1	0.3	2	0.6
French Guiana.....	...	...	...	...	...	...	e) 7	1.3
Hawaii.....	23	0.5	24	0.5	25	0.5	30	0.6
Jamaica.....	329	1.8	344	1.8	...	...	...	...
Leeward Islands								
Antigua.....	10	...	8	...	5	...	5	...
St. Kitts-Nevis-Anguilla.....	7	1.1	5	0.8	7	1.1	6	0.9
Virgin Islands.....	3	...	3	...	1	...	-	-
Netherlands Antilles.....	e) 24	0.6	e) 25	0.6	e) 26	0.6	e) 11	0.3
Puerto Rico.....	528	1.7	436	1.4	362	1.1	...	...
Trinidad and Tobago.....	106	1.3	94	1.1	90	1.0	89	1.0
Virgin Islands (USA).....	-	-	3	0.9	5	1.5	2	0.6
Windward Islands								
Dominica.....	12	1.6	7	0.9	9	1.1	6	0.7
St. Lucia.....	14	1.3	23	2.0	16	1.4	15	1.3
St. Vincent.....	19	1.7	14	1.2	15	1.3	4	0.3

(a) Federal District and seven State capitals. Data for São Paulo incomplete.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, Nº 3 (October 1957).

(d) Data not corrected for residence.

(e) Age group 5-14 years.

TABLE 19. NUMBER OF DEATHS OF CHILDREN 10-14 YEARS OF AGE WITH RATES PER 1,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	1,407	0.8	1,313	0.7	1,448	0.8	1,350	0.7
Bolivia.....	780	2.5	...	...	...	...	...	...
Brazil (a).....	577	1.2	558	1.1	591	1.2	598	1.2
Canada (b).....	752	0.6	661	0.5	756	0.6	706	0.5
Chile.....	990	1.4	973	1.4	901	1.3	906	1.3
Colombia.....	2,783	1.9	2,388	1.6	2,432	1.6	2,649	1.7
Costa Rica.....	117	1.1	120	1.1	126	1.1	123	1.0
Dominican Republic.....	370	1.2	372	1.2	344	1.1	...	...
Ecuador (c).....	...	...	1,148	2.8	1,190	2.8	...	...
El Salvador.....	541	2.2	589	2.3	529	2.0	514	1.9
Guatemala.....	1,958	5.4	1,514	4.1	1,749	4.6	...	...
Honduras.....	517	2.8	459	2.4	524	2.7	...	...
Mexico.....	7,688	2.3	6,906	2.0	6,670	1.9	...	...
Nicaragua.....	...	...	203	1.3	184	1.2	166	1.0
Panama.....	139	1.5	175	1.9	159	1.6	149	1.5
Paraguay.....	125	0.7	88	0.5	103	0.5	114	0.6
Peru.....	1,785	1.9	1,748	1.8	...	...	...	...
United States.....	6,704	0.5	6,273	0.5	6,320	0.5	...	...
Uruguay.....	...	...	99	...	120	...	...	...
Venezuela.....	772	1.3	765	1.2	803	1.3	835	1.3
Alaska (d).....	13	1.0	17	1.3	13	1.0	...	...
Barbados.....	14	0.6	8	0.4	12	0.5	16	0.7
Bermuda.....	2	0.6	...	...	2	0.5	2	0.5
British Guiana.....	57	1.2	52	1.0	50	1.0	...	...
British Honduras.....	12	1.3	12	1.3	13	1.4	10	1.0
Canal Zone.....	...	...	...	...	-	-	2	0.9
French Guiana.....	...	...	...	...	...	...	e) 7	1.3
Hawaii.....	25	0.7	19	0.5	17	0.4	21	0.5
Jamaica.....	167	1.0	189	1.1	...	...	...	...
Leeward Islands								
Antigua.....	3	...	...	...	2	...	5	...
St. Kitts-Nevis-Anguilla.....	...	...	3	0.5	4	0.7	2	0.3
Virgin Islands.....	-	-	-	-	1	...	-	-
Netherlands Antilles.....	e) 24	0.6	e) 25	0.6	e) 26	0.6	e) 11	0.3
Puerto Rico.....	241	0.9	225	0.8	178	0.6	...	...
Trinidad and Tobago.....	63	1.0	65	1.0	63	0.9	72	1.0
Virgin Islands (USA).....	1	0.3	2	0.8	3	1.2	4	1.5
Windward Islands								
Dominica.....	6	0.9	7	1.0	4	0.5	6	0.8
St. Lucia.....	24	2.4	32	3.1	39	3.7	16	1.5
St. Vincent.....	11	1.1	19	2.0	12	1.2	9	0.9

(a) Federal District and seven State capitals. Data for São Paulo incomplete.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, N<sup>o</sup> 3 (October 1957).

(d) Data not corrected for residence.

(e) Age group 5-14 years.



TABLE 20. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION OF CHILDREN 5-14 YEARS OF AGE IN THE AMERICAS, 1956

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
<b>ARGENTINA (a) - All causes...</b>	3,155	87.5	<b>DOMINICAN REPUBLIC (d)</b>		
Accidents, poisonings, and violence (E800-E999) .....	670	18.6	All causes .....	1,167	172.0
Diseases of circulatory system (400-468) .....	233	6.5	Malaria (110-117).....	115	17.0
Influenza and pneumonia (480-483, 490-493).....	226	6.3	Gastritis, enteritis, etc. (543, 571, 572) .....	65	9.6
Tuberculosis, all forms(001-019)	156	4.3	Influenza and pneumonia (480-483, 490-493) .....	58	8.5
Nonmeningococcal meningitis(340)	127	3.5	Accidents (E800-E962).....	56	8.3
			Anaemias (290-293) .....	46	6.8
<b>BRAZIL (b) - All causes .....</b>	1,566	152.6	<b>ECUADOR(d,e,f) - All causes..</b>	594	265.1
Accidents (E800-E962) .....	309	30.1	Accidents (E800-E962) .....	89	39.7
Influenza and pneumonia (480-483, 490-493) .....	168	16.4	Tuberculosis, all forms(001-019)	53	23.7
Malignant neoplasms (140-205)...	122	11.9	Gastritis, enteritis, etc. (543, 571, 572) .....	50	22.3
Gastritis, enteritis, etc. (543, 571, 572) .....	109	10.6	Influenza and pneumonia (480-483, 490-493).....	50	22.3
Tuberculosis, all forms(001-019)	93	9.1	Diseases of the heart (410-443)..	34	15.2
<b>CANADA (c) - All causes .....</b>	1,808	55.9	<b>EL SALVADOR (d) - All causes..</b>	2,325	414.5
Accidents (E800-E962) .....	895	27.7	Gastritis, enteritis, etc. (543, 571, 572) .....	325	57.9
Malignant neoplasms (140-205)...	225	7.0	Avitaminoses and other metabolic diseases (280-289)...	146	26.0
Congenital malformations (750-759).....	81	2.5	Malaria (110-117) .....	106	18.9
Influenza and pneumonia (480-483, 490-493).....	75	2.3	Accidents (E800-E962) .....	93	16.6
Nephritis and nephrosis(590-594)	50	1.5	Diseases due to helminths (123-130) .....	86	15.3
<b>CHILE - All causes .....</b>	2,139	134.8	<b>GUATEMALA (d) - All causes ..</b>	6,009	725.2
Influenza and pneumonia (480-483, 490-493) .....	467	29.4	Gastritis, enteritis, etc. (543, 571, 572) .....	902	108.9
Accidents (E800-E962) .....	416	26.2	Malaria (110-117) .....	747	90.1
Tuberculosis, all forms(001-019)	182	11.5	Diseases due to helminths (123-130).....	724	87.4
Malignant neoplasms (140-205) ..	85	5.4	Influenza and pneumonia (480-483, 490-493) .....	594	71.7
Diseases of the heart (410-443).	70	4.4	Dysentery, all forms (045-048)..	449	54.2
<b>COLOMBIA - All causes .....</b>	9,044	270.2	<b>MEXICO (d) - All causes .....</b>	23,025	294.4
Accidents (E800-E962) .....	904	27.0	Gastritis, enteritis, etc. (543, 571, 572) .....	4,070	52.0
Influenza and pneumonia (480-483, 490-493) .....	621	18.5	Influenza and pneumonia (480-483, 490-493) .....	2,747	35.1
Gastritis, enteritis, etc. (543, 571, 572) .....	619	18.5	Malaria (110-117) .....	2,154	27.5
Diseases due to helminths (123-130).....	574	17.1	Accidents (E800-E962) .....	2,091	26.7
Anaemias (290-293) .....	368	11.0	Measles (085) .....	1,352	17.3
<b>COSTA RICA - All causes .....</b>	387	149.0	<b>NICARAGUA - All causes .....</b>	538	153.0
Accidents (E800-E962) .....	47	18.1	Malaria (110-117) .....	82	23.3
Gastritis, enteritis, etc. (543, 571, 572).....	35	13.5	Accidents (E800-E962) .....	59	16.8
Diseases due to helminths (123-130) .....	30	11.5	Diseases due to helminths (123-130) .....	35	10.0
Anaemias (290-293) .....	28	10.8			
Influenza and pneumonia (480-483, 490-493).....	17	6.5			

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(b) Federal District and seven State capitals.

(c) Excluding Yukon and Northwest Territories.

(d) Year 1955.

(e) Capital cities of provinces.

(f) Rates based on population estimated by PASB.

TABLE 20. FIRST FIVE PRINCIPAL CAUSES\* OF DEATH WITH RATES PER 100,000 POPULATION OF CHILDREN 5-14 YEARS OF AGE IN THE AMERICAS, 1956 (Continued)

Area and Causes of Death	Number	Rate	Area and Causes of Death	Number	Rate
NICARAGUA - Continued			VENEZUELA - All causes . . . . .		
Influenza and pneumonia (480-483, 490-493) . . . . .	29	8.2	Accidents (E800-E962) . . . . .	2,810	195.1
Paratyphoid fever and other Salmonella infections(041,042) . . . . .	28	8.0	Gastritis, enteritis, etc. (543, 571, 572) . . . . .	369	25.6
PANAMA - All causes . . . . .	474	210.7	Influenza and pneumonia (480-483, 490-493) . . . . .	142	9.9
Accidents (E800-E962) . . . . .	52	23.1	Avitaminoses and other metabolic diseases (280-289) . . . . .	129	9.0
Influenza and pneumonia (480-483, 490-493) . . . . .	36	16.0	Tuberculosis, all forms(001-019)	93	6.5
Anaemias (290-293) . . . . .	29	12.9	JAMAICA (g) - All causes . . . . .	84	5.8
Diseases due to helminths (123-130) . . . . .	25	11.1	Accidents (E800-E962) . . . . .	533	146.8
Malaria (110-117) . . . . .	21	9.3	Influenza and pneumonia (480-483, 490-493) . . . . .	67	18.4
PARAGUAY - All causes . . . . .	342	78.0	Malaria (110-117) . . . . .	42	11.6
Accidents (E800-E962) . . . . .	37	8.4	Diseases of the heart (410-443) . . . . .	37	10.2
Influenza and pneumonia (480-483, 490-493) . . . . .	27	6.2	Gastritis, enteritis, etc. (543, 571, 572) . . . . .	28	7.7
Gastritis, enteritis, etc. (543, 571, 572) . . . . .	20	4.6	PUERTO RICO(d) - All causes . . . . .	540	89.6
Diseases due to helminths (123-130) . . . . .	11	2.5	Accidents (E800-E962) . . . . .	102	16.9
Dysentery, all forms (045-048) . . . . .	10	2.3	Gastritis, enteritis, etc. (543, 571, 572) . . . . .	53	8.8
Malignant neoplasms (140-205) . . . . .	10	2.3	Influenza and pneumonia (480-483, 490-493) . . . . .	36	6.0
PERU (a) - All causes . . . . .	5,131	241.3	Nephritis and nephrosis(590-594)	32	5.3
Influenza and pneumonia (480-483, 490-493) . . . . .	1,051	49.4	Tuberculosis, all forms(001-019)	27	4.5
Whooping cough (056) . . . . .	450	21.2	TRINIDAD AND TOBAGO		
Tuberculosis, all forms(001-019)	361	17.0	All causes . . . . .	161	98.9
Accidents (E800-E962) . . . . .	310	14.6	Accidents (E800-E962) . . . . .	34	20.9
Nonmeningococcal meningitis(340)	132	6.2	Influenza and pneumonia (480-483, 490-493) . . . . .	14	8.6
UNITED STATES (d) - All causes	14,760	48.4	Rheumatic fever (400-402) . . . . .	12	7.4
Accidents (E800-E962) . . . . .	6,099	20.0	Anaemias (290-293) . . . . .	10	6.1
Malignant neoplasms (140-205) . . . . .	2,125	7.0	Malignant neoplasms (140-205) . . . . .	8	4.9
Congenital malformations (750-759) . . . . .	819	2.7			
Influenza and pneumonia (480-483, 490-493) . . . . .	761	2.5			
Nephritis and nephrosis(590-594)	341	1.1			
URUGUAY (d) - All causes . . . . .	246	...			
Accidents (E800-E962) . . . . .	64	...			
Malignant neoplasms (140-205) . . . . .	27	...			
Suicide and self-inflicted injury (E963, E970-E979) . . . . .	13	...			
Influenza and pneumonia (480-483, 490-493) . . . . .	11	...			
Rheumatic fever (400-402) . . . . .	9	...			

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(d) Year 1955.

(g) Year 1954.

## MATERNAL MORTALITY

Maternal deaths are deaths due to complications of pregnancy, childbirth and the puerperium and are classified under title numbers 640-689 of the International Classification of Diseases. In order to be included in this group the cause of death must be known and recorded accurately by the certifier. In areas without medical personnel, it is difficult to obtain such certification and thus the maternal death rates are probably lower than they would be if all deaths were certificated by physicians. However, the data given in Table 21 indicate that there is considerable variation with very high rates in many countries and other areas. In countries where great progress has been made in health and medical care programs the maternal death rate is now less than 1 per 1,000 live births.

Data regarding causes of maternal mortality are given in Table 22 for 1956. Here again the completeness of medical certification determines in part the death rates from the three cause groups, (a) sepsis of pregnancy, childbirth and the puerperium, (b) toxæmias of pregnancy and the puerperium and (c) haemorrhage of pregnancy and childbirth. The fourth group, other complications of pregnancy, childbirth and the puerperium includes deaths during childbirth or the puerperium without a specific cause stated. Although in a few areas the death rates from sepsis were relatively high usually the death rates from toxæmias and haemorrhage were higher and were of approximately the same size. Variation in the quality of certification of these causes makes interpretation difficult.

### ACTIVITIES IN MATERNAL AND CHILD HEALTH

The prevention of excessive morbidity and mortality in childhood depends to a consider-

able extent on the control of communicable diseases and on the development of environmental sanitation programs. These activities are reported in the following chapters as well as activities in local health services of which maternal and child health are an integral part.

Many of the countries and other areas of the Americas provided data regarding certain specific activities in maternal and child health which are summarized here (Table 23). Because of the wide variation in health programs it is difficult to present comparable and useful data to evaluate programs. In certain areas such as the United States and Canada where health activities are carried on by states or provinces, data were not available. In countries with a centralized system evidently data were available and in several they indicate that high proportions of the population are served by general or specialized centers providing maternal and child health services. For example in Venezuela 59.8 per cent of the population lived in areas served by health centers.

In order to judge the extent of these services in relation to the needs, the number of women receiving prenatal care, the number of children receiving care and also the number of live births are given in the table. The ratios of women receiving prenatal care to live births indicated that the health services in several countries and other areas were covering relatively high proportions of the pregnant women while in others the ratios indicated that only a small proportion were receiving care. The number of women and children receiving services from health centers varies according to socio-economic conditions and to the development and availability of health services.

TABLE 21. NUMBER OF MATERNAL DEATHS WITH RATES PER 1,000 LIVE BIRTHS IN THE AMERICAS,  
1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	513	1.1	492	1.1	479	1.0	...	...
Bolivia .....	534	4.5	...	...	...	...	...	...
Brazil (a) .....	383	2.3	443	2.5	458	2.6	519	2.9
Canada (b) .....	324	0.8	312	0.7	335	0.8	275	0.6
Chile .....	686	2.9	746	3.1	672	2.8	774	3.1
Colombia .....	1,725	3.7	1,961	4.1	1,885	3.7	1,673	3.1
Costa Rica .....	99	2.1	101	2.1	106	2.2	90	1.7
Dominican Republic .....	120	1.3	112	1.1	129	1.2	...	...
Ecuador (c) .....	...	...	605	3.9	511	3.1	...	...
El Salvador .....	225	2.3	184	1.8	219	2.1	212	2.0
Guatemala .....	517	3.3	516	3.2	463	2.9	...	...
Honduras .....	...	...	...	...	232	3.2	...	...
Mexico .....	2,979	2.4	2,985	2.2	2,866	2.1	...	...
Nicaragua .....	94	1.9	120	2.3	95	1.8	127	2.4
Panama .....	92	2.9	89	2.7	78	2.3	90	2.5
Paraguay .....	87	3.2	78	3.2	83	4.0	80	3.6
Peru .....	414	1.4	...	...	...	...	...	...
United States .....	2,385	0.6	2,105	0.5	1,901	0.5	...	...
Uruguay .....	85	1.8	91	1.8	89	...	...	...
Venezuela .....	374	1.5	406	1.5	370	1.4	382	1.4
Alaska (d) .....	6	0.9	1	0.1	4	0.5	...	...
Bahama Islands .....	...	...	...	...	...	...	7	2.1
Barbados .....	26	3.6	21	2.8	21	2.8	24	3.4
Bermuda .....	4	3.9	1	0.9	2	1.9	2	1.7
British Guiana .....	100	5.1	92	4.7	77	3.8	...	...
British Honduras .....	19	6.4	17	5.3	16	4.6	16	4.3
Canal Zone .....	-	-	1	0.8	-	-	1	0.9
French Guiana .....	...	...	...	...	...	...	2	2.1
Hawaii .....	4	0.2	7	0.4	12	0.7	5	0.3
Jamaica .....	138	2.7	166	3.1	...	...	...	...
Leeward Islands								
Antigua.....	4	2.4	7	4.2	6	3.2	10	5.2
St. Kitts-Nevis-Anguilla.....	9	4.6	10	4.5	13	5.2	10	4.1
Virgin Islands.....	-	-	-	-	1	3.4	1	3.1
Martinique .....	8	0.8	10	1.1	...	...	1	...
Puerto Rico .....	142	1.8	102	1.3	92	1.2	88	1.1
Trinidad and Tobago .....	83	3.2	99	3.4	97	3.2	68	2.5
Virgin Islands (USA) .....	-	-	2	2.3	1	1.1	2	2.1
Windward Islands								
Dominica.....	8	3.8	5	2.1	3	1.2	...	...
St. Lucia.....	9	2.9	4	1.3	2	0.6	2	0.6
St. Vincent.....	7	2.3	6	1.9	4	1.1	...	...

(a) Federal District and seven State capitals.

(b) Excluding Yukon and Northwest Territories.

(c) Data from *Boletín Estadístico* Vol. 2, No 3 (October 1957).

(d) Data not corrected for residence.

TABLE 22. NUMBER OF MATERNAL DEATHS WITH RATES PER 1,000 LIVE BIRTHS FOR GROUPS OF CAUSES IN THE AMERICAS, 1956

Group of causes of death	Number		Rate		Number		Rate		Number		Rate	
	Argentina(a)		Bolivia(b)		Brazil(c)		Canada(d)		Chile			
Total.....	479	1.0	534	4.5	519	2.9	275	0.6	774	3.1		
Sepsis(e).....	24	0.1	2	0.0	74	0.4	43	0.1	233	1.0		
Toxaemias(f).....	47	0.1	...	...	147	0.8	61	0.1	96	0.4		
Haemorrhage(g).....	86	0.2	39	0.3	90	0.5	66	0.1	143	0.6		
Other(h).....	322	0.7	493	4.2	208	1.2	105	0.2	302	1.2		
	Colombia		Costa Rica		Domin. Rep. (a)		Ecuador(a)		El Salvador			
Total.....	1,673	3.1	90	1.7	129	1.2	511	3.1	212	2.0		
Sepsis(e).....	109	0.2	14	0.3	2	0.0	43	0.3	36	0.3		
Toxaemias(f).....	98	0.2	8	0.2	11	0.1	31	0.2	21	0.2		
Haemorrhage(g).....	286	0.5	18	0.3	17	0.2	65	0.4	27	0.3		
Other (h).....	1,180	2.2	50	1.0	99	0.9	372	2.2	128	1.2		
	Guatemala(a)		Mexico(a)		Nicaragua		Panama		Paraguay			
Total.....	463	2.9	2,866	2.1	127	2.4	90	2.5	80	3.6		
Sepsis (e).....	135	0.8	381	0.3	19	0.4	1	0.0	18	0.8		
Toxaemias (f).....	8	0.1	273	0.2	3	0.1	14	0.4	9	0.4		
Haemorrhage (g).....	29	0.2	393	0.3	2	0.0	9	0.2	20	0.9		
Other (h).....	291	1.8	1,819	1.3	103	2.0	66	1.8	33	1.5		
	United States(a)		Uruguay(i)		Venezuela		Alaska(a)		Barbados			
Total.....	1,901	0.5	91	1.8	382	1.4	4	0.5	24	3.4		
Sepsis (e).....	364	0.1	21	0.4	42	0.2	-	-	5	0.7		
Toxaemias (f).....	555	0.1	24	0.5	107	0.4	2	0.3	8	1.1		
Haemorrhage (g).....	373	0.1	12	0.2	108	0.4	1	0.1	6	0.8		
Other (h).....	609	0.2	34	0.7	125	0.4	1	0.1	5	0.7		
	Bermuda		Br. Guiana(a)		Br. Honduras		Canal Zone		Fr. Guiana			
Total.....	2	1.7	77	3.8	16	4.3	1	0.9	2	2.1		
Sepsis (e).....	-	-	5	0.2	2	0.5	-	-	-	-		
Toxaemias (f).....	-	-	21	1.0	5	1.3	1	0.9	-	-		
Haemorrhage (g).....	1	0.9	17	0.8	7	1.9	-	-	-	-		
Other (h).....	1	0.9	34	1.7	2	0.5	-	-	2	2.1		
	Hawaii		Jamaica(i)		Antigua		Leeward Islands		St. Kitts-Nevis-Ang.		Virgin Is.	
Total.....	5	0.3	166	3.1	10	5.2	10	4.1	1	3.1		
Sepsis (e).....	2	0.1	15	0.3	-	-	2	0.8	-	-		
Toxaemias (f).....	3	0.2	63	1.2	4	2.1	4	1.7	-	-		
Haemorrhage (g).....	-	-	32	0.6	4	2.1	3	1.2	-	-		
Other (h).....	-	-	56	1.0	2	1.0	1	0.4	1	3.1		
	Puerto Rico(a)		Trinidad and Tobago		Dominica(a)		Windward Islands		St. Lucia		St. Vincent(a)	
Total.....	92	1.2	68	2.5	3	1.2	2	0.6	4	1.1		
Sepsis (e).....	4	0.1	17	0.6	-	-	-	-	-	-		
Toxaemias (f).....	19	0.2	17	0.6	-	-	-	-	4	1.1		
Haemorrhage (g).....	42	0.5	11	0.4	3	1.2	-	-	-	-		
Other (h).....	27	0.3	23	0.8	-	-	2	0.6	-	-		

(a) Year 1955.

(b) Year 1953.

(c) Federal District and seven State capitals.

(d) Excluding Yukon and Northwest Territories.

(e) Sepsis of pregnancy, abortion, childbirth and puerperium - Numbers 640, 641, 651, 681, 682, 684, in *International Statistical Classification of Diseases, Injuries, and Causes of Death*, World Health Organization, Geneva, 1948.

(f) Toxaemias of pregnancy, abortion and puerperium - 642, 652, 685, 686, *Ibid.*

(g) Haemorrhage of pregnancy and childbirth - 643, 644, 670-672, *Ibid.*

(h) Other complications of pregnancy, childbirth and puerperium - 645-650, 660, 673-680, 683, 687-689, *Ibid.*

(i) Year 1954.

TABLE 23. ACTIVITIES IN MATERNAL AND CHILD HEALTH OF HEALTH CENTERS IN THE AMERICAS, 1956

Area	Centers*	Population served by centers		Live Births (Table 3)	Women receiving prenatal care		Number of children receiving care	Number of home visits to children	Number of clinic visits of children
		Number	Per cent**		Number	Per 100 live births			
Bolivia .....	34	727,642	22.5	a) 106,411	5,092	4.8	226,584	23,715	...
Brazil .....	344	...	...	...	b) 95,635	...	c) 48,555	...	...
Chile .....	69	...	...	252,093	...	...	...	...	2,241,653
Colombia .....	714	12,262,480	94.8	538,485	125,616	23.3	197,707	76,255	256,316
Costa Rica .....	67	987,778	100.0	51,481	20,290	39.4	436,268	...	d) 338,714
Cuba (e) .....	7	...	...	...	22,627	...	34,415	...	26,420
Dominican Republic (f) ..	31	1,460,940	57.9	104,840	...	...	70,556	...	...
Ecuador .....	14	391,528	10.3	f) 166,977	4,894	2.9	8,177	19,816	43,574
Guatemala .....	...	...	...	f) 158,856	3,223	2.0	54,977	...	13,720
Haiti .....	10	340,000	10.2	...	...	...	...	...	...
Mexico .....	939	...	...	f) 1,377,917	231,431	16.8	1,863,778	281,723	1,989,835
Nicaragua .....	24	...	...	52,626	3,209	6.1	8,550	959	42,100
Peru .....	70	...	...	a) 300,417	6,345	2.1	64,580	3,660	310,598
Uruguay .....	g) 7	h) 300,000	11.3	a) 49,888	g) 17,620	35.3	g) 28,105	22,705	15,452
Venezuela .....	479	3,450,035	59.8	277,823	189,695	68.3	233,497	957,714	936,968
Alaska .....	30	200,000	97.1	7,615	924	12.1	2,397	3,735	2,232
Bahama Islands .....	25	107,509	100.0	3,290	...	...	...	i) 6,545	i) 9,559
Barbados .....	2	228,209	100.0	7,082	j) 400	5.6	j) 595	...	...
Bermuda .....	9	39,000	93.7	1,169	450	38.5	5,963	1,426	9,353
British Guiana .....	103	480,240	100.0	20,300	...	...	...	...	...
British Honduras .....	20	81,779	100.0	3,725	2,209	59.3	9,060	910	53,228
Canal Zone .....	d) 2	...	...	1,132	...	...	...	d) 1,715	d) 15,104
French Guiana (i) .....	2	...	...	966	h) 1,500	...	2,496	h) 1,000	h) 1,800
Guadeloupe .....	34	244,500	100.0	9,706	k) 4,750	48.9	3,210	9,000	1,242
Hawaii .....	130	526,000	100.0	17,135	j,k) 610	3.5	11,935	24,602	41,546
Jamaica .....	202	...	...	58,265	16,252	27.9	11,171	...	77,447
Leeward Islands									
Antigua .....	3	53,341	100.0	1,917	839	43.8	1,207	2,249	6,146
St. Kitts-Nevis- Anguilla .....	24	...	...	2,418	...	...	...	...	...
Virgin Islands .....	4	7,680	100.0	318	...	...	...	...	...
Martinique .....	51	253,000	100.0	9,800	8,856	90.4	16,602	14,232	101,604
Netherlands Antilles ..	5	...	...	5,793	...	...	254	560	2,198
Puerto Rico .....	217	2,210,703	97.5	77,384	43,299	55.9	30,296	12,561	110,972
Trinidad and Tobago ...	149	742,500	100.0	27,447	18,883	68.8	20,801	44,850	133,462
Virgin Islands (USA) ..	4	24,000	100.0	971	802	82.6	5,335	5,678	9,923
Windward Islands									
Dominica .....	...	i) 13,500	21.8	2,416	i) 609	25.2	i) 3,726	i) 2,837	i) 5,139
Grenada .....	26	90,000	100.0	...	j) 3,561	...	j) 3,036	j) 7,186	j) 3,036
St. Lucia .....	15	89,006	100.0	3,571	...	...	...	...	6,681
St. Vincent .....	20	...	...	3,601	...	...	...	10,032	2,787

\* This refers to general health centers doing maternal and child health work and to separate maternal and child centers.  
 \*\* Of total population (Table 2).

- (a) Year 1954.
- (b) Children under 2 years, and pregnant and nursing women; data for 13 States.
- (c) Pre-school children; data for 13 States.
- (d) Well-Baby Clinics.
- (e) Year 1956-57.
- (f) Year 1955.
- (g) Including 2 Maternal-Child Centers of the Council for Financial Aid to Families.
- (h) Estimated.
- (i) In urban areas only.
- (j) In rural areas only.
- (k) Including those receiving postnatal care.

## CHAPTER III

### Communicable Diseases

Health programs in the Americas are directed primarily to the eradication and control of communicable diseases. From data presented in the first two chapters it is evident that communicable diseases are principal causes of death for all ages combined and especially in infancy and childhood. Thus because of the importance of these problems data are presented here for 19 major communicable diseases which are usually reportable in the countries of the Americas. For nine of these diseases data are also presented in tabular form to show the scope of certain activities in their prevention and control.

Every national health service has established a reporting system for quarantinable and certain other communicable diseases. The number of reportable diseases varies according to the needs and problems in the countries. The completeness of reporting depends on the availability of medical facilities, local health services, the use of the reports, severity of the disease, etc. In countries with well developed health services reporting of cases is usually more complete and accurate than in those without such services. Also the development of eradication and control programs necessitates the careful search for cases and the extension of case-finding methods. Therefore with the extension of health programs and establishment of eradication programs, the numbers of reported cases of certain diseases may be increased due to the improvement of case finding. In tuberculosis for example, the use of X-ray facilities for large proportions of the population has resulted in the discovery of cases which would not otherwise have been known and reported. Likewise the active search for cases of malaria should reveal cases which would not have been reported. However, as eradication and control procedures are established marked reductions occur. Thus interpretation of case rates is difficult and requires understanding of the many factors involved. Nevertheless, the data presented here from the reporting systems

in operation provide information regarding the known problems.

All countries and other areas of the Americas provide information currently regarding notifiable diseases to the Pan American Sanitary Bureau. The data for the ten years 1946-1955 have recently been published to provide a reference document<sup>(a)</sup> to fill the many requests for such data by national and international health agencies. In so far as possible the data given in this report are the same as those in the ten-year report. However, in a few instances, corrections and additions have been made due to inclusion of delayed reports. Information regarding cases is included even though the four-year report on health conditions was not transmitted to the Bureau. In this present report countries and other areas are included only if one or more cases are reported during the period. Reference to the ten-year report is advisable to obtain information regarding the countries and areas not included. The fact that a country or other area is not included here may be due to the fact that no cases were reported or that the disease was not notifiable.

Although in most of the countries the reporting systems cover the entire area, in some the coverage is limited to localities with health services. In six countries, reporting systems for some diseases are in operation only in certain areas, which are termed "reporting areas." These areas cover from 11 to 92 per cent of the estimated population of the countries (Table 24). In the tables which follow the estimated populations of these reporting areas have been used in the calculation of case rates as indicated by footnotes.

In the tables which follow it is seen that many cases of communicable diseases which are preventable continue to occur. Diseases such as smallpox, whooping cough and diphtheria can be prevented by vaccination. Thus the information in this chapter is valuable in

(a) Reported Cases of Notifiable Diseases in the Americas, 1946-1955, Scientific Publications No. 38, Pan American Sanitary Bureau, February 1958.

TABLE 24. ESTIMATED POPULATION LIVING IN REPORTING AREAS IN SIX COUNTRIES OF THE AMERICAS, AND PERCENTAGE OF TOTAL ESTIMATED POPULATION FOR JULY 1, 1953-1956

Area	1953		1954		1955		1956		
	Population	Per cent	Population	Per cent	Population	Per cent	Population	Per cent	
Brazil	(a).....	8,693,781	15.6	8,949,759	15.7	9,205,727	15.7	9,460,995	15.8
	(b).....	8,237,864	14.8	8,480,948	14.9	9,011,289	15.4	6,731,329	11.2
Colombia .....	9,820,410	81.1	10,918,910	88.2	11,080,550	87.5	11,879,360	91.8	
El Salvador .....	893,000	43.5	899,850	42.4	1,034,220	47.2	1,094,400	48.2	
Paraguay.....	1,322,913	88.4	1,348,979	88.2	c) 716,089	45.8	...	...	
Peru .....	3,739,000	46.8	3,976,066	48.8	4,104,302	49.4	4,287,523	50.1	
Venezuela .....	3,024,392	56.2	3,211,891	58.3	3,339,945	59.2	3,464,000	60.0	

(a) Federal District and State capitals.

(b) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955; São Paulo, 1956.

(c) Reporting area comprised 42 localities with physicians working full time in the health services.

indicating diseases that need immediate action through the application of readily available techniques as well as those that require a combination of diagnostic and treatment programs and those directed to the improvement of environmental conditions.

### DIPHTHERIA

The numbers of reported cases of diphtheria with case rates per 100,000 population are given in Table 25 for the four years 1953-1956. Although the diphtheria case rates continued to decline in several countries and other areas of the Americas, in 1956 in 8 countries and 2 other areas the rates were in excess of 10 per 100,000 population. Diphtheria is a preventable disease which continues to occur in almost every country in the Americas.

The numbers of children vaccinated in diphtheria control programs are given in Table 26 for countries and other areas which provided such information. It is realized that in certain countries, such as Canada and the United States, because of the decentralized systems information regarding diphtheria vaccination is not tabulated for the entire country. Triple vaccine (combined diphtheria toxoid, pertussis vaccine and tetanus toxoid) was used in nearly two-thirds of the countries and other areas for which information was available and diphtheria toxoid or a combination in the remainder. Although the number of children vaccinated in several

countries was large, in only one country and 4 other areas was the number of vaccinations nearly as large or larger than the number of live births in a year (Uruguay, Alaska, Canal Zone, Guadeloupe and Martinique). Thus in these areas if vaccinations continue at this level coverage of the child population is practically complete. Diphtheria can be prevented with existing techniques by systematic vaccination of the child population.



TABLE 25. NUMBER OF REPORTED CASES OF DIPHTHERIA WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	3,000	16.3	3,535	18.8	2,606	13.6	2,090	10.7
Bolivia .....	98	3.1	...	...	28	0.9	42	1.3
Brazil (a).....	2,513	30.5	2,753	32.5	2,482	27.5	2,712	28.7
Canada (b).....	132	0.9	208	1.4	139	0.9	135	0.8
Chile .....	1,024	16.2	884	13.8	849	13.1	1,070	16.2
Colombia (c) .....	1,511	15.4	1,383	12.7	1,428	12.9	1,278	10.8
Costa Rica .....	178	20.2	148	16.2	145	15.2	130	13.2
Cuba .....	167	2.8	182	3.0	175	2.9	170	2.7
Dominican Republic .....	d) 131	5.6	258	10.6	304	12.1	316	12.1
Ecuador .....	333	9.5	394	11.0	579	15.7	536	14.1
El Salvador (c).....	294	32.9	116	12.9	76	7.3	106	9.7
Guatemala .....	54	1.8	93	2.9	131	4.0	140	4.2
Haiti .....	45	1.4	146	4.5	56	1.7	12	0.4
Mexico .....	1,077	3.8	1,065	3.7	966	3.3	857	2.8
Nicaragua .....	34	2.9	75	6.2	41	3.3	...	...
Panama .....	33	4.1	23	2.7	21	2.4	34	3.8
Paraguay .....	c) 304	23.0	c) 72	5.3	c) 37	5.2	25	1.6
Peru (c).....	164	4.4	223	5.6	191	4.7	159	3.7
United States .....	2,355	1.5	2,041	1.3	1,984	1.2	1,568	0.9
Uruguay .....	194	7.7	147	5.7	127	4.9	55	2.1
Venezuela (c).....	447	14.8	497	15.5	558	16.7	e) 815	23.5
Alaska .....	1	0.5	1	0.5	1	0.5	6	2.9
Bahama Islands .....	-	-	-	-	-	-	2	1.9
Barbados .....	16	7.3	40	17.8	12	5.2	7	3.1
British Guiana .....	33	7.5	47	10.4	120	25.7	41	8.5
British Honduras .....	36	48.3	5	6.5	4	5.0	1	1.2
Canal Zone .....	-	-	1	2.6	1	2.6	-	-
Falkland Islands .....	2	89.9	-	-	-	-	...	...
French Guiana .....	-	-	-	-	1	3.5	-	-
Guadeloupe .....	15	6.7	11	4.8	4	1.7	11	4.5
Hawaii .....	5	1.1	1	0.2	-	-	-	-
Jamaica .....	33	2.2	51	3.4	47	3.0	44	2.8
Leeward Islands								
St. Kitts-Nevis-Anguilla .....	-	-	-	-	-	-	2	3.6
Martinique .....	2	0.9	4	1.7	-	-	-	-
Netherlands Antilles .....	17	9.5	12	6.6	153	83.8	e) 4	2.2
Puerto Rico .....	327	14.8	164	7.4	81	3.6	76	3.4
St. Pierre and Miquelon .....	...	...	...	...	-	-	1	20.4
Surinam .....	141	70.3	168	81.2	98	45.9	...	...
Trinidad and Tobago .....	143	21.1	107	15.3	89	12.3	85	11.4

(a) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Cases treated in hospitals.

(e) Provisional.

TABLE 26. NUMBER OF CHILDREN VACCINATED FOR DIPHTHERIA AND TYPE OF VACCINE USED IN DIPHTHERIA PROGRAMS IN THE AMERICAS, 1956

Area	Children vaccinated	Type of vaccine	Area	Children vaccinated	Type of vaccine
Argentina .....	200,000	D.P.T.	Uruguay .....	48,222	...
Bolivia .....	a) 41,279	D.P.T.	Venezuela .....	91,086	Diph. toxoid
Chile .....	115,658	Mixed and diph. toxoid	Alaska .....	6,561	Diph. toxoid
Colombia .....	187,423	Mixed and simple	Bermuda .....	...	D.P.T.
Costa Rica .....	9,919	D.P.T.	British Guiana...	a) 503	D.P.T.
Dominican Republic	24,286	Diph. toxoid	British Honduras.	2,226	D.P.T.
Ecuador .....	5,728	D.P.T.	Canal Zone.....	4,075	D.P.T.
El Salvador.....	27,668	D.P.T.	French Guiana....	655	Diph. toxoid
Guatemala.....	28,537	D.P.T. a and specific	Guadeloupe.....	10,912	Diph. toxoid
Haiti.....	7,466	D.P.T.	Hawaii.....	...	D.P.T.
Mexico.....	345,909	D.P.T., double vacc. and diph. toxoid	Martinique.....	11,214	D.P.T. and diph. toxoid
Nicaragua.....	3,551	D.P.T.	Neth. Antilles...	3,202	...
Paraguay.....	13,539	D.P.T.	Puerto Rico .....	a) 37,307	D.P.T. and diph. toxoid
Peru .....	39,551	Diph.-pertussis and diph. toxoid	Virgin Is. (U.S.A.)	326	D.P.T.
			Windward Islands		
			St. Lucia .....	60	...

(a) Adjusted to agree with total number given triple vaccine (D.P.T.) in Table 49.

NOTE: D.P.T. denotes triple vaccine (combined diphtheria toxoid, pertussis vaccine and tetanus toxoid).

#### ACUTE INFECTIOUS ENCEPHALITIS

The completeness of reporting of acute infectious encephalitis depends essentially on availability of physicians and of diagnostic facilities. Although reporting is incomplete, the reporting of cases indicates that the problem is present in an area and that it is being recognized. In general the case rates are low, as given in Table 27, but the fact that at least one of the forms of this disease has been diagnosed in 20 countries and 8 other areas of the Americas in the four years 1953-1956 is evidence that acute infectious encephalitis, of which each form is caused by a specific virus, is a disease that must be considered when viral diseases are being investigated and differentiated.

TABLE 27. NUMBER OF REPORTED CASES OF ACUTE INFECTIOUS ENCEPHALITIS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	123	0.7	62	0.3	116	0.6	183	0.9
Bolivia .....	21	0.7	-	-	-	-	-	-
Brazil (a).....	78	0.9	100	1.2	96	1.1	100	1.1
Canada (b).....	46	0.3	42	0.3	35	0.2	46	0.3
Chile.....	61	1.0	61	1.0	27	0.4	53	0.8
Colombia (c).....	168	1.7	155	1.4	104	0.9	105	0.9
Costa Rica.....	10	1.1	12	1.3	6	0.6	12	1.2
Cuba.....	-	-	2	0.0	1	0.0	...	...
Dominican Republic.....	-	-	-	-	7	0.3	-	-
El Salvador (c).....	...	...	...	...	13	1.3	16	1.5
Guatemala .....	40	1.3	43	1.4	35	1.1	18	0.5
Haiti.....	1	0.0	1	0.0	-	-	-	-
Mexico .....	...	...	2	0.0	-	-	5	0.0
Nicaragua .....	15	1.3	...	...	...	...	...	...
Panama.....	-	-	-	-	2	0.2	1	0.1
Paraguay.....	c) 73	5.5	c) 51	3.8	c) 16	2.2	21	1.3
Peru (c).....	14	0.4	19	0.5	21	0.5	22	0.5
United States.....	1,935	1.2	2,606	1.6	2,166	1.3	2,624	1.6
Uruguay .....	14	0.6	5	0.2	12	0.5	...	...
Venezuela (c).....	2	0.1	7	0.2	22	0.7	d) 47	1.4
Bermuda .....	2	5.1	-	-	e) 2	4.9	-	-
British Guiana.....	...	...	...	...	7	1.5	2	0.4
British Honduras .....	-	-	-	-	1	1.3	-	-
Canal Zone .....	-	-	-	-	-	-	1	2.7
French Guiana.....	...	...	2	7.2	3	10.5	-	-
Hawaii.....	1	0.2	1	0.2	1	0.2	-	-
Jamaica .....	-	-	2	0.1	-	-	-	-
Virgin Islands (USA).....	-	-	-	-	1	4.2	1	4.2

(a) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Provisional.

(e) Attributable to measles.

## LEPROSY

Leprosy continues to occur in nearly all countries of the Americas (Table 28). In one country and 4 other areas the number of new cases reported in 1956 exceeded 10 per 100,000 population. Although the numbers of reported cases have declined in some countries and other areas the numbers in a few were larger in this four-year period than in the years 1950-1952. It is expected that cases of leprosy will be reported more completely as diagnostic and treatment facilities are extended to larger proportions of the population.

Information was provided regarding the known and estimated cases as well as the

diagnostic and treatment facilities (Table 29). The number of known cases of leprosy in the Americas exceeds 100,000 with cases in nearly all countries and other areas. The estimated number of cases is much greater and may be twice as large. Although many areas provided at least one leprosarium, segregation was carried out for only a small proportion of the patients. With the new drugs available the extension of treatment to patients through clinic supervision and home isolation is practicable. Thus active control programs are now being developed based on the ambulatory treatment of cases.

TABLE 28. NUMBER OF REPORTED CASES OF LEPROSY WITH RATES PER 100,000 POPULATION  
IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	399	2.2	420	2.2	426	2.2	397	2.0
Bolivia .....	36	1.2	6	0.2	12	0.4	7	0.2
Canada (a).....	2	0.0	1	0.0	-	-	3	0.0
Colombia (b).....	903	9.2	980	9.0	822	7.4	789	6.6
Costa Rica .....	8	0.9	34	3.7	34	3.6	39	3.9
Cuba.....	35	0.6	29	0.5	16	0.3	37	0.6
Dominican Republic .....	...	...	21	0.9	40	1.6	...	...
El Salvador (b).....	...	...	...	...	3	0.3	...	...
Guatemala .....	4	0.1	3	0.1	11	0.3	9	0.3
Haiti .....	21	0.7	10	0.3	9	0.3	c) 4	0.1
Mexico.....	312	1.1	291	1.0	237	0.8	102	0.3
Nicaragua.....	11	0.9	5	0.4	4	0.3	11	0.9
Panama .....	9	1.1	6	0.7	1	0.1	12	1.4
Paraguay.....	b) 203	15.3	b) 335	24.8	b) 167	23.3	410	25.6
Peru (b).....	92	2.5	93	2.3	88	2.1	81	1.9
United States .....	60	0.0	56	0.0	75	0.0	52	0.0
Uruguay .....	10	0.4	15	0.6	15	0.6	...	...
Venezuela (b).....	623	20.6	350	10.9	288	8.6	c) 301	8.7
Bahama Islands .....	2	2.3	-	-	1	1.0	2	1.9
Barbados.....	1	0.5	1	0.4	1	0.4	-	-
British Guiana.....	32	7.3	64	14.1	82	17.6	112	23.3
French Guiana .....	48	171.4	57	204.6	60	209.1	20	68.3
Guadeloupe.....	32	14.3	45	19.6	78	32.9	107	43.8
Hawaii.....	23	4.8	20	4.1	25	5.0	15	2.9
Jamaica.....	10	0.7	18	1.2	15	1.0	17	1.1
Leeward Islands								
Antigua.....	6	12.3	5	10.0	4	7.7	5	9.4
St. Kitts-Nevis-Anguilla.....	3	5.8	2	3.8	2	3.7	-	-
Martinique .....	100	42.7	196	82.0	217	87.9	130	51.4
Netherlands Antilles.....	5	2.8	2	1.1	5	2.7	7	3.8
Puerto Rico.....	12	0.5	13	0.6	1	0.0	5	0.2
Surinam .....	209	104.2	268	129.5	253	118.5	...	...
Trinidad and Tobago.....	60	8.8	27	3.9	39	5.4	17	2.3
Virgin Islands (USA).....	-	-	2	8.3	-	-	1	4.2
Windward Islands								
Dominica.....	2	3.4	-	-	2	3.2	-	-
St. Lucia.....	2	2.4	1	1.2	4	4.6	3	3.4
St. Vincent.....	-	-	2	2.7	1	1.3	1	1.3

(a) Excluding Northwest Territories; including Yukon beginning 1955.

(b) Reporting area.

(c) Provisional.

TABLE 29. ESTIMATED LEPROSY PROBLEM AND FACILITIES FOR DIAGNOSIS AND TREATMENT  
IN THE AMERICAS, 1956

Area	Known cases			Estimated number in country	Leprosariums and colonies		Number of diagnostic centers
	Number	Rate per 100,000 population	Number segregated		Number	Capacity	
Bolivia .....	200	6.2	150	850	2	...	...
Brazil.....	63,143	105.5	23,034	...	...	...	...
Chile .....	35	0.5	13	36	1	40	4
Colombia .....	9,658	74.6	6,288	20,000	2	...	...
Costa Rica.....	252	25.5	166	...	1	177	2
Cuba.....	4,204	67.1	731	6,500	2	...	10
Dominican Republic.....	500	19.2	167	600	1	181	...
Guatemala .....	71	2.1	...	200	1	100	1
Mexico.....	13,408	43.9	650	30,000	1	450	24
Nicaragua .....	100	7.8	67	2,000	1	68	1
Paraguay.....	1,679	104.9	375	4,787	1	400	8
Peru .....	961	11.2	690	3,400	3	700	6
United States .....	740	0.4	320	2,000	1	500	2
Uruguay .....	...	...	75	1,200	1	70	...
Venezuela .....	9,298	161.1	858	13,000	2	1,000	185
Bahama Islands .....	14	13.0	14	14	...	24	...
Barbados .....	18	7.9	18	18	1	100	...
Bermuda .....	6	14.4	1	10	1	14	1
British Guiana .....	1,391	289.6	280	1,391	1	400	4
British Honduras .....	1	1.2	-	1	1	...	...
French Guiana .....	1,500	5,119.4	1,340	...	...	...	...
Guadeloupe .....	2,297	939.5	110	...	1	110	34
Hawaii.....	459	87.3	322	459	2	472	1
Jamaica.....	338	21.6	125	...	1	185	...
Leeward Islands							
Antigua .....	46	86.2	32	50	1	40	1
St. Kitts-Nevis-Anguilla .....	18	32.8	18	30	1	34	1
Martinique .....	1,000	39.5	150	2,000	2	150	2
Netherlands Antilles .....	23	12.4	23	30	1	30	-
Puerto Rico .....	150	66.2	96	...	1	92	-
Trinidad and Tobago .....	896	120.7	261	896	1	400	9
Virgin Islands (USA).....	15	62.5	15	15	1	92	2
Windward Islands							
Dominica .....	8	12.9	8	21	1	26	1
Grenada .....	4	4.4	4	...	1	25	...
St. Lucia .....	25	28.1	14	25	1	26	1
St. Vincent .....	20	25.8	20	20	1	...	...

MALARIA

The numbers of reported cases of malaria show marked variations by years and by areas of the Americas (Table 30). In Ecuador (1954-1956) and Nicaragua (1955 and 1956) only cases with positive slides were reported. Although reporting of cases of malaria is incomplete in many areas the case rates indicate that in this four-year period

malaria was a major health problem. Even though reporting was incomplete, nearly 600,000 new cases of malaria were reported in the Americas in 1955. A report of the hemispheric malaria eradication program which is now under way in the Americas is given in a separate document entitled "Status of the Malaria Eradication Program in the Americas, VI Report" for the XV Pan American Sanitary Conference.

TABLE 30. NUMBER OF REPORTED CASES OF MALARIA WITH RATES PER 100,000  
POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	648	3.5	618	3.3	240	1.3	707	3.6
Bolivia .....	21,014	672.4	...	...	1,810	56.6	1,069	33.0
Brazil .....	209,755	376.1	243,246	426.0	383,946	656.8	...	...
Canada (a) .....	4	0.0	8	0.1	3	0.0	2	0.0
Colombia (b) .....	83,877	854.1	73,906	676.9	77,219	696.9	69,714	586.8
Costa Rica .....	1,407	159.6	1,368	149.6	1,090	114.6	1,379	139.6
Cuba .....	214	3.6	248	4.1	234	3.8	131	2.1
Dominican Republic .....	c)6,206	263.4	9,092	373.0	10,392	412.1	1,831	70.2
Ecuador .....	...	...	d) 787	22.1	d) 1,341	36.3	d) 661	17.4
El Salvador .....	6,561	319.4	4,737	223.2	2,071	94.4	4,575	201.7
Guatemala .....	30,230	988.4	29,362	929.6	24,010	737.0	19,818	591.9
Haiti .....	48,300	1496.9	77,535	2374.4	19,614	593.5	9,534	285.1
Mexico .....	50,947	181.6	48,521	168.2	41,169	138.7	33,360	109.2
Nicaragua .....	10,036	861.1	1,485	123.3	d) 398	32.0	d) 184	14.3
Panama .....	4,194	515.4	2,849	340.3	2,095	243.3	3,393	383.1
Paraguay .....	b)6,971	526.9	b) 4,216	312.5	b) 717	100.1	443	27.7
Peru (b) .....	19,232	514.4	14,228	357.8	11,607	282.8	8,117	189.3
United States .....	1,310	0.8	715	0.4	522	0.3	234	0.1
Venezuela .....	2,261	42.1	1,487	27.0	1,158	20.5	e)1,555	26.9
Alaska .....	1	0.5	-	-	-	-	-	-
British Guiana .....	83	18.8	31	6.8	82	17.6	42	8.7
British Honduras .....	1,884	2525.1	1,100	1428.4	1,233	1546.9	302	369.3
Canal Zone .....	78	185.5	85	218.2	31	79.6	4	10.7
French Guiana .....	...	...	...	...	f) 145	505.2	f) 142	484.6
Guadeloupe .....	-	-	1	0.4	-	-	-	-
Hawaii .....	106	22.3	-	-	-	-	6	1.1
Jamaica .....	...	...	4,417	291.0	3,381	219.3	3,712	237.4
Leeward Islands								
Antigua .....	g) 1	2.0	-	-	g) 1	1.9	-	-
St. Kitts-Nevis-Anguilla ...	2	3.9	-	-	1	1.9	-	-
Martinique .....	-	-	-	-	1	0.4	1	0.4
Puerto Rico .....	28	1.3	13	0.6	7	0.3	-	-
Surinam .....	769	383.5	535	258.4	498	233.3	...	...
Trinidad and Tobago .....	5,050	744.5	5,515	790.6	1,540	213.7	156	21.0
Virgin Islands (USA) .....	-	-	1	4.2	1	4.2	-	-
Windward Islands								
Dominica .....	546	940.1	280	464.6	234	376.0	15	24.2
Grenada .....	3,598	4332.5	2,747	3220.4	...	...	...	...
St. Lucia .....	3,225	3844.5	3,642	3557.2	1,727	1980.8	1,130	1255.6
St. Vincent .....	5	6.9	-	-	-	-	-	-

(a) Excluding Northwest Territories; including Yukon beginning 1955.

(b) Reporting area.

(c) Cases treated in hospitals.

(d) Positive slides.

(e) Provisional.

(f) Including all malaria-like fevers.

(g) Imported case.

### MEASLES

The numbers of cases of measles vary from year to year with epidemics at two and three-year intervals. Case rates for measles continue to be high (Table 31).

TABLE 31. NUMBER OF REPORTED CASES OF MEASLES WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	26,983	146.6	37,206	198.4	11,796	61.7	17,074	87.6
Bolivia .....	506	16.2	247	7.8	848	26.5	450	13.9
Brazil (a) .....	2,432	29.5	2,303	27.2	3,116	34.6	2,492	26.3
Canada (b) .....	57,871	390.5	36,850	241.5	56,972	363.4	53,986	336.1
Chile .....	7,429	117.6	6,672	104.1	11,831	182.1	10,771	163.5
Colombia (c) .....	26,438	269.2	29,752	272.5	31,327	282.7	51,008	429.4
Costa Rica .....	1,197	135.8	1,179	128.9	1,319	138.7	2,087	211.3
Cuba .....	108	1.8	445	7.4	269	4.4	126	2.0
Dominican Republic .....	...	...	1,172	48.1	7,403	293.6	...	...
El Salvador (c) .....	1,254	140.4	2,530	281.2	2,552	246.8	3,044	278.1
Guatemala .....	3,824	125.0	787	24.9	3,134	96.2	1,686	50.4
Haiti .....	75	2.3	452	13.8	85	2.6	422	12.6
Mexico .....	36,515	130.1	19,488	67.5	44,859	151.1	12,805	41.9
Nicaragua .....	1,002	86.0	1,939	161.0	1,149	92.3	250	19.4
Panama .....	929	114.2	287	34.3	738	85.7	339	38.3
Paraguay .....	c) 1,950	147.4	c) 1,663	123.3	c) 562	78.5	1,352	84.4
Peru (c) .....	4,382	117.2	10,258	258.0	8,382	204.2	11,795	275.1
United States .....	449,146	283.7	682,720	423.5	555,156	337.9	611,936	365.9
Uruguay .....	3,651	144.0	4,771	185.0	771	29.5	...	...
Venezuela (c) .....	9,828	325.0	20,258	630.7	11,845	354.6	d) 11,329	327.0
Alaska .....	2,142	1044.9	1,492	717.3	606	290.0	2,732	1326.2
Bahama Islands .....	-	-	145	161.8	63	66.0	12	11.2
Bermuda .....	7	17.8	72	179.6	331	810.3	12	28.8
British Guiana .....	778	176.4	59	13.0	1	0.2	-	-
British Honduras .....	143	191.7	6	7.8	55	69.0	67	81.9
Canal Zone .....	224	532.7	61	156.6	138	354.3	25	67.0
French Guiana .....	33	117.9	...	...	...	...	-	-
Guadeloupe .....	2	0.9	39	17.0	20	8.4	36	14.7
Hawaii .....	142	29.9	588	121.5	6,763	1344.5	5,850	1112.2
Jamaica .....	...	...	6,127	403.7	695	45.1	59	3.8
Leeward Islands								
Antigua .....	1,782	3644.8	6	12.0	42	80.9	24	45.0
Montserrat .....	49	369.2	14	102.2	1	7.0	...	...
Virgin Islands .....	2	27.1	...	...	...	...	...	...
Martinique .....	-	-	2	0.8	395	160.0	-	-
Puerto Rico .....	1,761	79.6	4,154	186.4	3,891	171.9	2,094	92.4
St. Pierre and Miquelon .....	...	...	...	...	-	-	1,511	30836.7
Trinidad and Tobago .....	17	2.5	728	104.4	264	36.6	199	26.8
Virgin Islands (USA) .....	1	3.7	13	54.2	-	-	205	854.2
Windward Islands								
Dominica .....	1	1.7	3	5.0	30	48.2	17	27.4
St. Lucia .....	39	46.5	13	15.2	37	42.4	...	...
St. Vincent .....	80	110.9	279	379.7	-	-	-	-

(a) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Provisional.

### MENINGOCOCCAL INFECTIONS

Although cases of meningococcal meningitis were reported in nearly all countries

and other areas of the Americas, in only 5 countries and 5 other areas were rates in excess of 2 per 100,000 population in 1956 (Table 32).

TABLE 32. NUMBER OF REPORTED CASES OF MENINGOCOCCAL INFECTIONS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	208	1.1	232	1.2	258	1.3	141	0.7
Bolivia .....	24	0.8	3	0.1	44	1.4	14	0.4
Brazil (a) .....	314	3.8	375	4.4	313	3.5	359	3.8
Canada (b) .....	301	2.0	285	1.9	310	2.0	285	1.8
Chile .....	89	1.4	108	1.7	147	2.3	120	1.8
Colombia (c) .....	691	7.0	634	5.8	1,166	10.5	756	6.4
Costa Rica .....	24	2.7	10	1.1	6	0.6	18	1.8
Cuba .....	4	0.1	1	0.0	1	0.0	...	...
Ecuador .....	9	0.3	-	-	-	-	...	...
El Salvador (c) .....	...	...	...	...	4	0.4	7	0.6
Guatemala .....	79	2.6	69	2.2	88	2.7	70	2.1
Haiti .....	...	...	...	...	3	0.1	23	0.7
Mexico .....	88	0.3	34	0.1	46	0.2	38	0.1
Nicaragua .....	2	0.2	1	0.1	24	1.9	...	...
Panama .....	18	2.2	15	1.8	6	0.7	15	1.7
Paraguay .....	c) 169	12.8	c) 103	7.6	c) 67	9.4	128	8.0
Peru (c) .....	59	1.6	79	2.0	55	1.3	51	1.2
United States .....	5,077	3.2	4,436	2.8	3,455	2.1	2,735	1.6
Uruguay .....	7	0.3	2	0.1	5	0.2	...	...
Venezuela (c) .....	3	0.1	5	0.2	119	3.6	d) 147	4.2
Alaska .....	9	4.4	13	6.2	11	5.3	17	8.3
Bahama Islands .....	-	-	-	-	9	9.4	-	-
Barbados .....	-	-	4	1.8	2	0.9	6	2.6
Bermuda .....	2	5.1	-	-	-	-	-	-
British Guiana .....	19	4.3	15	3.3	25	5.4	31	6.5
British Honduras .....	7	9.4	2	2.6	4	5.0	-	-
Canal Zone .....	2	4.8	1	2.6	1	2.6	3	8.0
French Guiana .....	...	...	...	...	4	13.9	1	3.4
Guadeloupe .....	-	-	-	-	1	0.4	4	1.6
Hawaii .....	7	1.5	5	1.0	3	0.6	3	0.6
Jamaica .....	3	0.2	32	2.1	6	0.4	3	0.2
Leeward Islands								
Antigua .....	1	2.0	1	2.0	-	-	-	-
St. Kitts-Nevis-Anguilla ...	-	-	1	1.9	-	-	1	1.8
Martinique .....	2	0.9	-	-	-	-	-	-
Puerto Rico .....	41	1.9	14	0.6	6	0.3	9	0.4
Surinam .....	-	-	2	1.0	-	-	...	...
Trinidad and Tobago .....	-	-	-	-	-	-	1	0.1
Virgin Islands (USA) .....	2	7.4	-	-	-	-	2	8.3
Windward Islands								
St. Vincent .....	1	1.4	6	8.2	-	-	1	1.3

(a) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Provisional.

### PLAGUE

Cases of plague were reported from only 6 countries in the Americas during the 5 years 1953-1957, namely, Bolivia, Brazil, Ecuador, Peru, United States and Venezuela (Table 33). The following programs were in operation: in Brazil, the campaign against plague is developed in the potential endemic area covering 160 "municipios" in the States of Ceará, Pernambuco, Alagoas, Bahia, Rio de Janeiro, São Paulo and Minas Gerais and

in the Federal District; in Ecuador, the program is for elimination of reservoirs and vectors especially in rural areas of endemic infection; in Peru, in 1956 only sporadic outbreaks have been attended; in United States, a study program on sylvatic plague is carried on by the plague laboratory of the Communicable Disease Center; and in Venezuela, the objective of the program is to prevent spread from the circumscribed enzootic areas to other areas of the national territory.



TABLE 33. NUMBER OF REPORTED CASES OF PLAGUE WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1957

Area	1953		1954		1955		1956		1957	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bolivia .....	-	-	9	0.3	45	1.4	-	-	-	-
Brazil .....	10	0.0	6	0.0	27	0.0	4	0.0	37	0.1
Ecuador .....	90	2.6	81	2.3	7	0.2	80	2.1	79	2.0
Peru .....	163	2.0	75	0.9	8	0.1	24	0.3	37	0.4
United States .....	-	-	-	-	-	-	1	0.0	1	0.0
Venezuela .....	1	0.0	-	-	-	-	3	0.1	-	-

### POLIOMYELITIS

Since 1947 notable increases in reporting of cases of poliomyelitis have occurred. Definite outbreaks with case rates in excess of 20 per 100,000 population were reported in Argentina, Canada, Costa Rica, Uruguay, Alaska, Hawaii, Jamaica and Trinidad. In addition the case rates were above 20 per 100,000 population in the United States and high rates were noted in some of the areas with small populations such as the Canal Zone, French Guiana and Grenada. The general increase in reporting of cases since 1947 may be attributed to several factors, such as improvement in case reporting and better recognition of the disease as well as to an actual increase in paralytic cases of the disease. The great variation in the numbers of reported cases and case rates for the 5 years 1953-1957 is seen in Table 34.

In the past case rates were high in Canada and the United States and low in the rest of the Americas. Although the data vary in completeness of reporting, as well as in the reporting of nonparalytic poliomyelitis, the totals for the United States and Canada and for the rest of the Americas (Table 35) serve to show major changes in the problem from the available data during the 11-year period, 1947-1957. In Canada and the United States combined the case rates were in excess of 20 per 100,000 population for the years 1949, 1950, 1952, 1953 and 1954. In 1955 vaccination programs were initiated which were extended in 1956. The case rate for these two countries combined was 8.6 per 100,000 population in 1956 and 3.3 per 100,000

in 1957. At the beginning of this period the case rate for the rest of the Americas, on the basis of known incomplete reporting of cases, and considering data for reporting areas only in 5 countries, was only 1.5 per 100,000 population. However, steady increases in the number of reported cases in some countries and in outbreaks in others resulted in case rates in excess of 4 per 100,000 population for the 4 years 1953-1956 with the highest rate of 8.3 per 100,000 population in 1956 due in large part to the epidemic in Argentina. The provisional data for 1957 indicate a case rate of 3.9 per 100,000 for the Americas excluding Canada and the United States.

Many of the countries and other areas provided the distribution by age of reported cases in 1956 (Table 36). Of the 22 providing information with at least 10 reported cases, in 14 or nearly two-thirds, over 70 per cent of the cases were in children under 5 years of age. In the United States only 39.0 per cent of the cases were in children under 5 years and 34.0 per cent were in persons 15 years of age and over. Since the age distribution of reported cases varies in the Americas data regarding age are essential in planning vaccination programs.

Table 37 provides a summary of the use of vaccine in the Americas and the availability of iron lungs and rehabilitation centers. Polio vaccine (Salk or other killed-virus vaccine) was used in at least 11 countries and 9 other areas in 1956. Greater use of vaccine is expected due to the availability of a live virus vaccine in 1958.

TABLE 34. NUMBER OF REPORTED CASES OF POLIOMYELITIS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1957

Area	1953		1954		1955		1956		1957 (a)	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	2,579	14.0	871	4.6	435	2.3	6,496	33.3	757	3.8
Bolivia .....	2	0.1	-	-	1	0.0	18	0.6	14	0.4
Brazil (b) .....	681	8.3	561	6.6	368	4.1	698	7.4	461	4.8
Canada (c) .....	8,878	59.9	2,390	15.7	1,021	6.5	607	3.8	286	1.7
Chile .....	554	8.8	589	9.2	416	6.4	719	10.9	336	5.0
Colombia (d) .....	154	1.6	110	1.0	155	1.4	108	0.9	117	0.9
Costa Rica .....	9	1.0	1,081	118.2	45	4.7	170	17.2	42	4.1
Cuba .....	69	1.2	56	0.9	267	4.4	56	0.9	97	1.5
Dominican Republic .....	e) 7	0.3	-	-	-	-	15	0.6	1	0.0
Ecuador .....	37	1.1	62	1.7	40	1.1	30	0.8	42	1.1
El Salvador .....	151	7.4	40	1.9	9	0.4	54	2.4	68	2.9
Guatemala .....	140	4.6	139	4.4	86	2.6	146	4.4	107	3.1
Haiti .....	...	...	7	0.2	-	-	-	-	45	1.3
Mexico .....	1,787	6.4	609	2.1	1,824	6.1	594	1.9	1,562	5.0
Nicaragua .....	191	16.4	45	3.7	113	9.1	48	3.7	62	4.7
Panama .....	22	2.7	27	3.2	14	1.6	144	16.3	5	0.5
Paraguay .....	d) 59	4.5	d) 70	5.2	d) 37	5.2	115	7.2	30	1.8
Peru (d) .....	79	2.1	73	1.8	203	4.9	284	6.6	192	4.3
United States .....	35,592	22.5	38,476	23.9	28,985	17.6	15,140	9.1	5,894	3.5
Uruguay .....	56	2.2	86	3.3	551	21.1	71	2.7	49	1.8
Venezuela (d) .....	327	10.8	325	10.1	390	11.7	a) 321	9.3	275	7.6
Alaska .....	67	32.7	365	175.5	57	27.3	11	5.3	3	1.4
Bahama Islands .....	1	1.2	-	-	-	-	-	-	2	1.7
Barbados .....	3	1.4	1	0.4	-	-	-	-	1	0.4
Bermuda .....	1	2.5	1	2.5	-	-	-	-	1	2.4
British Guiana .....	2	0.5	3	0.7	f) 2	0.4	4	0.8	101	20.4
British Honduras .....	3	4.0	-	-	1	1.3	-	-	-	-
Canal Zone .....	12	28.5	9	23.1	4	10.3	16	42.9	-	-
French Guiana .....	-	-	-	-	-	-	9	30.7	-	-
Guadeloupe .....	...	...	6	2.6	13	5.5	4	1.6	-	-
Hawaii .....	57	12.0	216	44.6	185	36.8	62	11.8	10	1.8
Jamaica .....	4	0.3	759	50.0	71	4.6	14	0.9	394	25.0
Leeward Islands										
St. Kitts-Nevis-										
Anguilla .....	-	-	-	-	-	-	1	1.8	-	-
Martinique .....	-	-	13	5.4	2	0.8	-	-	...	...
Netherlands Antilles	1	0.6	2	1.1	14	7.7	a) 24	13.0	-	-
Puerto Rico .....	34	1.5	118	5.3	434	19.2	54	2.4	33	1.4
Trinidad and Tobago	1	0.1	189	27.1	16	2.2	9	1.2	274	35.8
Virgin Islands (USA)	-	-	-	-	1	4.2	-	-	-	-
Windward Islands										
Grenada .....	2	2.4	19	22.3	...	...	...	...	31	33.0
St. Lucia .....	-	-	2	2.3	1	1.1	8	9.0	4	4.4

a) Provisional.

(b) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(c) Excluding Northwest Territories; including Yukon beginning 1955.

(d) Reporting area.

(e) Cases treated in hospitals.

(f) Revised.

TABLE 35. NUMBER OF REPORTED CASES OF POLIOMYELITIS WITH RATES PER 100,000 POPULATION FOR CANADA AND THE UNITED STATES AND FOR THE REST OF THE AMERICAS, 1947-1957

Year	Canada and the United States		Rest of Americas (a)	
	Number	Rate	Number	Rate
1947	13,118	8.4	1,407	1.5
1948	28,894	18.1	1,814	1.8
1949	44,491	27.4	2,678	2.6
1950	34,211	20.7	2,950	2.7
1951	30,954	18.5	3,939	3.6
1952	62,634	36.8	3,740	3.4
1953	44,470	25.7	7,092	6.1
1954	40,866	23.2	6,454	5.4
1955	30,006	16.7	5,755	4.7
1956	15,747	8.6	10,303	8.3
1957	b) 6,180	3.3	b) 5,116	3.9

(a) For 5 countries only reporting areas are included.

(b) Provisional.

TABLE 36. DISTRIBUTION OF REPORTED CASES OF POLIOMYELITIS BY AGE GROUP IN THE AMERICAS, 1956(a)

Area	Number						Per cent (b)				
	Total	Under 5 years	5-9 years	10-14 years	15 years and over	Un-known	Total	Under 5 years	5-9 years	10-14 years	15 years and over
Argentina .....	6,496	4,846	820	339	491	-	100	74.6	12.6	5.2	7.6
Bolivia .....	8	8	-	-	-	-	*				
Brazil (c) .....	152	121	9	11	11	11	100	85.8	6.4	7.8	
Canada (d) .....	231	54	79		96	2	100	23.6	34.5	41.9	
Chile .....	719	601	60	21	16	21	100	86.1	8.6	3.0	2.3
Colombia .....	108	57	20	31	-	-	100	52.8	18.5	28.7	
Costa Rica .....	170	143	14	2	11	-	100	84.1	8.2	1.2	6.5
Cuba .....	56	41	8	7	-	-	100	73.2	14.3	12.5	
Dominican Republic ..	15	13	-	-	-	2	100	100.0	-	-	-
Guatemala .....	146	113	24	7	1	1	100	77.9	16.6	4.8	0.7
Mexico .....	602	557	37	7	1	-	100	92.5	6.1	1.2	0.2
Nicaragua .....	48	46	2	-	-	-	100	95.8	4.2	-	-
Panama .....	144	121	13	3	7	-	100	84.0	9.0	2.1	4.9
Paraguay .....	117	109	7	1	-	-	100	93.2	6.0	0.8	-
Peru .....	290	254	15	5	16	-	100	87.6	5.2	1.7	5.5
United States .....	15,453	6,027	2,472	1,700	5,254	-	100	39.0	16.0	11.0	34.0
Uruguay .....	71	43	12	5	11	-	100	60.6	16.9	7.0	15.5
Venezuela (e) .....	167	137	14	6	10	-	100	82.0	8.4	3.6	6.0
Alaska .....	12	5	1	2	4	-	100	41.7	8.3	16.7	33.3
Canal Zone .....	16	9	5	1	1	-	100	56.2	31.2	6.2	6.2
French Guiana .....	9	8	1	-	-	-	*				
Guadeloupe .....	4	-	1	1	2	-	*				
Hawaii .....	62	20	16	7	19	-	100	32.3	25.8	11.3	30.6
Jamaica .....	14	1	1	-	5	7	*				
Leeward Islands											
St. Kitts-Nevis-											
Anguilla .....	1	1	-	-	-	-	*				
Puerto Rico .....	54	37	10	3	2	2	100	71.2	19.0	5.8	3.8
Trinidad and Tobago	9	3	4	2	-	-	*				
Windward Islands											
St. Lucia .....	8	8	-	-	-	-	*				

\* Percentages not calculated when less than 10 cases.

(a) Unrevised data.

(b) Distribution of stated ages.

(c) Year 1955, for Federal District and 6 State capitals.

(d) Six provinces.

(e) Representative sample.

**TABLE 37. USE OF VACCINE, IRON LUNGS AND REHABILITATION CENTERS FOR POLIOMYELITIS IN THE AMERICAS, 1956**

Area	Use of vaccine	Iron lungs	Rehabilitation centers	Area	Use of vaccine	Iron lungs	Rehabilitation centers
Argentina .....	5,307,435 doses	180	28	Alaska.....	25,651 doses	5	...
Bolivia .....	Very limited	...	...	Bahama Islands.	20,000 doses	2	-
Brazil .....	Yes	...	...	British Guiana.	Small stock maintained	1	1
Chile .....	-	16	5	British Honduras	Being planned	1	...
Colombia .....	-	...	1	Canal Zone.....	21,640 c. c.	3	1
Costa Rica ....	Began Sept. 1956	3	1	Hawaii.....	Yes	12	1
El Salvador ...	No official program	3	1	Jamaica.....	Yes	7	1
Guatemala .....	Began Nov. 1956	2	1	Leeward Islands			
Mexico .....	Yes	50	10	St. Kitts-Nevis-Ang....	-	1	-
Nicaragua .....	-	1	...	Puerto Rico....	1,017,325 doses	7	10
Panama .....	Began Aug. 1956	...	...	Trinidad and Tobago.....	Yes	3	2
Paraguay .....	Began Dec. 1956	4	...	Virgin Is. (U.S.A.)....	Yes	...	...
Peru .....	Under study	5	2	Windward Islands			
United States .	Very active program	...	15	Grenada.....	...	1	...
Uruguay.....	Yes	45	4	St. Vincent..	No case since 1950	-	-
Venezuela.....	Free vaccine began Nov. 1956	6	1				

**RABIES**

During the four-year period 1953-1956 cases of rabies were reported from 15

countries and 2 other areas in the Americas. Although the numbers of cases are small (Table 38), active programs are needed to prevent outbreaks of this fatal disease.

**TABLE 38. NUMBER OF REPORTED CASES OF RABIES WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956**

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	8	0.0	10	0.1	22	0.1	16	0.1
Bolivia.....	...	...	-	-	1	0.0	-	-
Brasil (a).....	19	0.2	20	0.2	25	0.3	28	0.3
Chile.....	1	0.0	2	0.0	8	0.1	4	0.1
Colombia (b).....	75	0.8	59	0.5	52	0.5	18	0.2
Cuba.....	4	0.1	4	0.1	1	0.0	-	-
Dominican Republic.....	-	-	-	-	2	0.1	1	0.0
El Salvador (b).....	1	0.1	1	0.1	3	0.3	4	0.4
Guatemala.....	9	0.3	5	0.2	9	0.3	2	0.1
Haiti.....	1	0.0	1	0.0	1	0.0	...	...
Mexico.....	29	0.1	26	0.1	36	0.1	31	0.1
Paraguay.....	...	...	...	...	b) 3	0.4	...	...
Peru (b).....	5	0.1	14	0.4	7	0.2	15	0.3
United States.....	c) 12	0.0	c) 13	0.0	c) 4	0.0	11	0.0
Venezuela.....	17	0.3	8	0.1	15	0.3	d) 19	0.3
British Guiana.....	e) 7	1.6	...	...	...	...	...	...
Surinam.....	...	...	...	...	1	0.5	...	...

(a) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(b) Reporting area.

(c) Registered deaths.

(d) Provisional.

(e) Deaths in hospitals.

## SCARLET FEVER

Except in areas in which streptococcal sore throat was combined with reports of scarlet fever, the numbers of cases of scarlet fever were small (Table 39). Case rates in

the United States and Canada for scarlet fever were high. In the United States streptococcal sore throat was included. It is necessary to know the distribution of scarlet fever because of increases which occur in its incidence.

**TABLE 39. NUMBER OF REPORTED CASES OF SCARLET FEVER WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956**

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	927	5.0	1,435	7.7	943	4.9	513	2.6
Bolivia .....	59	1.9	65	2.1	37	1.2	32	1.0
Brazil (a) .....	90	1.1	91	1.1	110	1.2	237	2.5
Canada (b) .....	14,054	94.8	11,526	75.5	7,345	46.8	9,017	56.1
Chile .....	2,743	43.4	1,110	17.3	836	12.9	1,300	19.7
Colombia (c) .....	110	1.1	91	0.8	292	2.6	228	1.9
Costa Rica .....	6	0.7	5	0.5	27	2.8	20	2.0
Cuba .....	-	-	1	0.0	1	0.0	11	0.2
El Salvador (c) .....	...	...	...	...	66	6.4	64	5.8
Guatemala .....	27	0.9	21	0.7	21	0.6	11	0.3
Haiti .....	...	...	110	3.4	23	0.7	...	...
Mexico .....	459	1.6	291	1.0	357	1.2	353	1.2
Panama .....	3	0.4	-	-	-	-	-	-
Paraguay .....	c) 45	3.4	c) 69	5.1	c) 7	1.0	...	...
Peru (c) .....	317	8.5	383	9.6	219	5.3	386	9.0
United States (d) .....	132,935	84.0	147,785	91.7	147,502	89.8	176,392	105.5
Uruguay .....	190	7.5	295	11.4	169	6.5	279	10.5
Venezuela (c) .....	15	0.5	62	1.9	24	0.7	e) 16	0.5
Alaska (d) .....	83	40.5	136	65.4	329	157.4	231	112.1
Bermuda .....	7	17.8	7	17.5	1	2.4	1	2.4
Canal Zone .....	-	-	-	-	1	2.6	5	13.4
Hawaii (d) .....	50	10.5	41	8.5	42	8.3	38	7.2
Jamaica .....	1	0.1	3	0.2	8	0.5	30	1.9
Leeward Islands								
St. Kitts-Nevis-Anguilla .....	-	-	-	-	1	1.9	-	-
Martinique .....	-	-	-	-	-	-	1	0.4
Puerto Rico .....	1	0.0	-	-	-	-	2	0.1
Virgin Islands (USA) .....	-	-	-	-	-	-	1	4.2

(a) Federal District and State capitals except: Salvador 1953 and 1954; Niteroi, 1955.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Including streptococcal sore throat.

(e) Provisional.

## SMALLPOX

In the five-year period cases of smallpox were reported in 12 countries; however, practically all of the cases were reported from 9 countries in South America (Table 40). In 1957, cases were reported from only 7 countries which were all in South America. Three South American countries, Chile, Peru and Venezuela had no cases in 1957. The case rates in Bolivia, Brazil (Federal District and State capitals), Colombia, Ecuador and Paraguay are high. Whenever present smallpox constitutes an important health problem.

In 1950 the XIII Pan American Sanitary Conference<sup>(b)</sup> recommended to the countries the development of systematic smallpox vaccination programs directed to the eradication of the disease. Although great progress has been made in the eradication of smallpox, with the last reported case in Mexico in 1951, in Chile in 1953, in Peru in 1954, and in Venezuela in 1956, eradication has not been completed in 7 countries of South America.

Data which were provided on primary vaccinations and revaccinations and the production of vaccine are summarized in Table 41. The number of primary vaccinations can be related to the number of live births and should be of approximately the same size if each year the new child population is vacci-

nated. In Bolivia, Colombia, Mexico, Paraguay, Uruguay, and Venezuela, British Honduras, and Canal Zone the data indicated the number of primary vaccinations was at least of the size of the population added by birth. Dried vaccine was being produced in 6 countries and glycerinated vaccine in 10 countries and 2 other areas.

## SYPHILIS

In the period 1953-1956 cases of syphilis were reportable in nearly all countries and other areas of the Americas. Although the case rates as given in Table 42 show wide variation, in many they indicate that syphilis is an important health problem. In several such as in Canada, El Salvador, Guatemala, Nicaragua, Panama, Paraguay, Venezuela, British Honduras, Antigua, and Puerto Rico the rates appear to show an almost continuous decline. In others marked variations from year to year may indicate changes in case-finding activities.

Table 43 provides the results of serologic tests for syphilis. The numbers of positive tests were usually considerably larger than the numbers of cases reported indicating that in many areas presumably bloods taken for treatment are included. For treatment both PAM and benzathine penicillin were usually used.

**TABLE 40. NUMBER OF REPORTED CASES OF SMALLPOX WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1957**

Area	1953		1954		1955		1956		1957	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	336	1.8	256	1.4	55	0.3	86	0.4	a) 335	1.7
Bolivia.....	429	13.7	624	19.7	372	11.6	481	14.9	1,310	40.5
Brazil (b).....	923	11.2	1,035	12.2	2,580	28.6	2,385	25.2	a) 842	8.7
Chile.....	9	0.1	-	-	-	-	-	-	-	-
Colombia (c).....	5,526	56.3	7,203	66.0	3,404	30.7	2,572	21.7	2,107	16.7
Ecuador.....	708	20.2	2,516	70.5	1,831	49.6	669	17.6	913	23.5
Guatemala.....	1	0.0	-	-	-	-	-	-	-	-
Paraguay.....	c) 770	58.2	c) 207	15.3	c) 57	8.0	132	8.2	95	5.8
Peru (c).....	172	4.6	115	2.9	-	-	-	-	-	-
United States.....	4	0.0	d) 9	0.0	d) 2	0.0	-	-	-	-
Uruguay.....	7	0.3	1	0.0	45	1.7	42	1.6	2	0.1
Venezuela.....	72	1.3	13	0.2	2	0.0	e) 4	0.1	-	-

(a) Incomplete.

(b) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi; 1955.

(c) Reporting area.

(d) These cases do not fulfill the generally accepted criteria for a diagnosis of smallpox.

(e) Clinical diagnosis not supported by epidemiological evidence.

(b) Actas de la Decimotercera Conferencia Sanitaria Panamericana, Publication No. 261, Pan American Sanitary Organization, September, 1952.

**TABLE 41. NUMBER OF SMALLPOX VACCINATIONS AND LOCAL PRODUCTION OF VACCINE IN THE AMERICAS, 1956**

Area	Vaccinations		Local production	
	Primary	Revaccinations	Dried vaccine	Glycerinated vaccine
Argentina .....	117,862		a) ...	8,342,500
Bolivia .....	b) 117,903	153,045	...	...
Brazil (c).....	816,908		...	...
Chile .....	124,593	658,595	998,750	1,332,512
Colombia .....	1,487,020	1,223,559	170,000	4,436,125
Costa Rica .....	13,046		-	-
Cuba .....	614	348	...	...
Dominican Republic .....	-	5,359	-	-
Ecuador .....	68,754	220,270	1,093,325	335
El Salvador .....	31,359	...	-	20,234
Guatemala .....	137,236		-	200,700
Haiti .....	4,185	...	-	-
Mexico (c) .....	1,639,232	3,053,942	31,000	12,068,630
Nicaragua .....	13,675	...	...	304,800
Paraguay .....	159,435	62,376	-	-
Peru .....	235,509	638,370	...	...
Uruguay .....	56,788	39,847	271,500	2,621,050
Venezuela .....	638,844	493,968	100,000	3,849,500
Alaska .....	3,932	...	...	...
Bermuda .....	750	...	-	-
British Guiana .....	330	-	-	-
British Honduras .....	3,369	1,250	-	-
Canal Zone .....	2,568	d) 104	-	-
French Guiana .....	332	1,336	-	-
Guadeloupe .....	2,245	915	...	Yes
Jamaica .....	d) 22,885	...	-	...
Leeward Islands				
Antigua .....	1,218		-	-
St. Kitts-Nevis-Anguilla .....	1,670	219	-	...
Virgin Islands .....	...	7	...	...
Martinique .....	8,016		-	-
Netherlands Antilles .....	2,400	e) 26	-	-
Puerto Rico .....	31,237		...	...
Trinidad and Tobago .....	11,662	...	-	-
Virgin Islands (USA) .....	208	...	...	...
Windward Islands				
Grenada .....	1,353	42	-	Yes
St. Lucia .....	80	520	-	...

(a) In experimental stage.

(b) Includes 55,554 not specified.

(c) Vaccinations done by agencies of Ministry of Health only.

(d) Incomplete data.

(e) Curaçao only.

TABLE 42. NUMBER OF REPORTED CASES OF SYPHILIS WITH RATES PER 100,000 POPULATION  
IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	3,960	21.5	4,251	22.7	2,439	12.8	4,720	24.2
Bolivia.....	3,876	124.0	381	12.1	468	14.6	306	9.5
Brazil (a).....	14,337	164.9	10,875	121.5	15,872	172.4	...	...
Canada (b).....	2,898	19.6	2,537	16.6	2,401	15.3	2,082	13.0
Colombia (c).....	23,975	244.1	19,278	176.6	d) 3,152	28.4	d) 3,167	26.7
Costa Rica.....	824	93.5	1,184	129.4	798	83.9	575	58.2
Cuba.....	...	...	...	...	...	...	3,874	61.9
Dominican Republic.....	...	...	31,981	1312.0	32,527	1290.0	24,376	934.5
El Salvador (c).....	7,479	837.5	5,641	626.9	5,941	574.4	5,331	487.1
Guatemala.....	2,006	65.6	1,667	52.8	1,305	40.1	1,029	30.7
Haiti.....	32,363	1003.0	56,283	1723.6	8,431	255.1	7,750	231.8
Mexico.....	22,391	79.8	23,115	80.1	23,982	80.8	25,005	81.9
Nicaragua.....	2,466	211.6	2,376	197.3	2,134	171.3	2,020	156.8
Panama.....	1,150	141.3	861	102.9	491	57.0	535	60.4
Paraguay.....	c) 3,760	284.2	c) 2,571	190.6	c) 1,076	150.3	1,445	90.3
Peru (c).....	5,187	138.7	4,451	111.9	4,430	107.9	4,950	115.5
United States.....	150,026	94.8	131,260	81.4	123,004	74.9	131,763	78.8
Uruguay.....	335	13.2	587	22.8	469	17.9	306	11.5
Venezuela (c).....	19,312	638.5	15,063	469.0	12,784	382.8	e) 9,404	271.5
Alaska.....	18	8.8	48	23.1	27	12.9	32	15.5
Bahama Islands.....	112	131.3	25	27.9	43	45.0	21	19.5
Bermuda.....	42	106.7	30	74.8	35	85.7	51	122.5
British Guiana.....	682	154.6	632	139.3	691	148.0	...	...
British Honduras.....	232	311.0	187	242.8	172	215.8	122	149.2
Canal Zone.....	88	209.3	55	141.2	69	177.1	161	431.7
Falkland Islands.....	5	224.7	-	-	1	45.5	...	...
French Guiana.....	...	...	...	...	88	306.6	80	273.0
Guadeloupe.....	1,112	498.7	1,078	470.5	885	373.6	...	...
Hawaii.....	155	32.6	87	18.0	162	32.2	105	20.0
Jamaica.....	5,568	374.7	5,603	369.2	6,366	412.9	8,330	532.7
Leeward Islands								
Antigua.....	813	1662.8	430	858.7	279	537.4	234	438.7
Montserrat.....	222	1672.7	137	1000.0	46	321.7	...	...
St. Kitts-Nevis-Anguilla.....	159	308.4	156	295.3	80	148.2	137	249.9
Virgin Islands.....	58	786.4	15	199.3	17	221.4	159	2070.3
Martinique.....	...	...	30	12.5	10	4.1	6	2.4
Puerto Rico.....	4,688	211.8	2,797	125.5	2,290	101.2	1,570	69.3
Trinidad and Tobago.....	...	...	966	138.5	629	87.3	...	...
Virgin Islands (USA).....	118	437.0	68	283.3	125	520.8	489	2037.5
Windward Islands								
Dominica.....	140	241.1	37	61.4	87	139.8	58	93.5
Grenada.....	351	422.7	421	493.6	123	139.4	...	...
St. Lucia.....	707	842.8	724	846.6	821	941.7	...	...
St. Vincent.....	173	239.9	143	194.6	108	142.2	120	154.5

(a) Federal District and State capitals.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Contagious syphilis.

(e) Provisional



TABLE 43. RESULTS OF SEROLOGIC TESTS FOR SYPHILIS IN THE AMERICAS, 1956

Area	Serologic Tests			Area	Serologic Tests		
	Number of tests	Number positive	Per cent positive		Number of tests	Number positive	Per cent positive
Argentina .....	16,618	392	2.4	Alaska .....	28,595	1,345	4.7
Bolivia .....	14,066	1,403	10.0	Bermuda .....	6,022	1,067	17.7
Costa Rica .....	21,915	3,215	14.7	British Guiana ...	598	-	-
Cuba .....	17,847	3,874	21.7	British Honduras .	5,208	550	10.6
Dominican Republic	42,212	4,597	10.9	Canal Zone .....	15,202	1,887	12.4
Ecuador .....	12,105	1,031	8.5	French Guiana ....	2,698	322	11.9
El Salvador .....	120,004	12,236	10.2	Guadeloupe .....	14,431	2,968	20.6
Guatemala .....	60,386	4,559	7.5	Hawaii .....	31,549	...	...
Haiti .....	a) 7,624	a) 2,999	39.3	Jamaica .....	59,074	18,585	31.5
Mexico .....	594,497	188,481	31.7	Leeward Islands			
Nicaragua .....	37,973	4,527	11.9	Antigua .....	6,029	851	14.1
Paraguay .....	127,403	14,014	11.0	Virgin Islands..	1,749	159	9.1
Peru .....	108,346	4,455	4.1	Martinique .....	11,080	1,814	16.4
United States ....	12,500,000	131,763	1.1	Neth. Antilles ...	b) 12,329	b) 579	4.7
Uruguay .....	35,388	2,015	5.7	Puerto Rico .....	158,148	8,819	5.6
Venezuela .....	868,012	150,279	17.3	Trinidad & Tobago.	57,056	c) 2,764	4.8
				Virgin Is. (USA)..	6,152	473	7.7
				Windward Islands			
				Dominica .....	2,199	432	19.6

(a) Syphilis control program.

(b) Aruba only.

(c) Including cases of yaws.

## TUBERCULOSIS

The large numbers of reported cases of tuberculosis (Table 44) indicate that cases of tuberculosis are being diagnosed and reported to the health authorities; variations and especially increases in the numbers of cases probably indicate extension of case-finding activities. In several countries such as Canada, the United States, Venezuela, and Puerto Rico the consistent decline in case rates is probably due to a true reduction in the incidence of the disease.

Specific activities in tuberculosis control programs in 1956 are summarized in Table 45. The numbers of X-ray examinations were large for many areas indicating active case-finding programs. In several countries X-ray examinations were probably made of persons with suspected tuberculosis or under treatment and thus account for a high percentage, as in Bolivia and Guatemala. Many countries reported the use of isoniazid and other drugs for chemotherapy which are important in treatment on an ambulatory or domiciliary basis and their extensive use should accelerate the decline in tuberculosis.

## TYPHOID FEVER

In several countries case and death rates from typhoid fever continue to be high (Table 46 and Table 6). Although some declines are noted, review of case rates given in the previous four-year report and in Table 46 indicates that typhoid fever continues to be an important health problem. In 1956 the case rates exceeded 50 per 100,000 population in Chile, Colombia, El Salvador, Peru, British Guiana, French Guiana, Antigua, Martinique, and Dominica. The total number of cases of typhoid fever continues to be very large with 39,920 cases reported in 1953, 40,219 in 1954, 44,440 in 1955, and 42,432 in 1956. Greater emphasis on sanitation and especially on extension and improvement of water supplies is needed to prevent typhoid fever.

TABLE 44. NUMBER OF REPORTED CASES OF TUBERCULOSIS WITH RATES PER 100,000 POPULATION  
IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina.....	14,701	79.9	16,655	88.8	16,577	86.7	18,307	94.0
Bolivia.....	4,894	156.6	...	...	859	26.9	745	23.0
Brazil (a).....	13,416	162.9	15,659	184.6	10,883	120.8	11,556	171.7
Canada (b).....	10,572	77.3	10,474	68.6	10,199	65.0	9,377	58.4
Colombia (c).....	13,599	138.5	15,628	143.1	12,273	110.8	11,048	93.0
Costa Rica.....	622	70.6	646	70.6	681	71.6	700	70.9
Cuba.....	1,721	29.3	2,118	35.3	1,749	28.5	1,951	31.2
Dominican Republic.....	...	...	2,188	89.8	1,799	71.3	2,149	82.4
Ecuador.....	...	...	5,112	143.3	4,542	123.1	4,466	117.7
El Salvador (c).....	2,410	269.9	2,058	228.7	2,518	243.5	2,615	238.9
Guatemala.....	3,275	107.1	2,516	79.7	2,738	84.0	2,157	64.4
Haiti.....	1,223	37.9	1,423	43.6	799	24.2	779	23.3
Mexico.....	6,787	24.2	7,863	27.3	8,257	27.8	9,421	30.9
Nicaragua.....	1,524	130.8	1,359	112.8	964	77.4	1,051	81.6
Panama.....	1,159	142.4	1,021	122.0	826	95.9	1,323	149.4
Paraguay.....	c) 945	71.4	c) 933	69.2	c) 640	89.4	1,158	72.3
Peru (c).....	17,635	471.7	18,081	454.7	19,408	472.9	19,579	456.7
United States.....	106,925	67.5	100,540	62.4	98,860	60.2	90,465	54.1
Uruguay.....	1,493	58.9	1,571	60.9	3,705	141.7	622	23.5
Venezuela (c).....	9,088	300.5	8,287	258.0	8,709	260.8	d) 5,282	152.5
Alaska.....	775	378.0	976	469.2	912	436.4	942	457.3
Bahama Islands.....	94	110.2	49	54.7	82	85.9	109	101.4
Barbados.....	101	45.8	111	49.3	123	53.7	88	38.6
Bermuda.....	7	17.8	23	57.4	6	14.7	4	9.6
British Guiana.....	283	64.2	216	47.6	207	44.3	190	39.6
British Honduras.....	107	143.4	112	145.4	46	57.7	38	46.5
Canal Zone.....	45	107.0	23	59.0	31	79.6	27	72.4
French Guiana.....	...	...	...	...	47	163.8	51	174.1
Guadeloupe.....	2	0.9	3	1.3	2	0.8	2	0.8
Hawaii.....	585	123.2	490	101.2	569	113.1	579	110.1
Jamaica.....	959	64.5	734	48.4	704	45.7	611	39.1
Leeward Islands								
Antigua.....	34	69.5	19	37.9	18	34.7	19	35.6
Montserrat.....	28	211.0	16	116.8	20	139.9	...	...
St. Kitts-Nevis-Anguilla.....	21	40.7	14	26.5	8	14.8	19	34.7
Virgin Islands.....	20	271.2	13	172.8	4	52.1	7	91.1
Martinique.....	300	128.2	234	97.9	215	87.1	191	75.5
Netherlands Antilles.....	58	32.5	36	19.9	43	23.6	36	19.4
Puerto Rico.....	4,726	213.6	4,520	202.8	4,471	197.6	3,597	158.7
St. Pierre and Miquelon.....	15	311.7	15	307.8	12	244.9	36	734.7
Surinam.....	81	40.4	163	78.7	152	71.2	...	...
Trinidad and Tobago.....	411	60.6	536	76.8	412	57.2	345	46.5
Virgin Islands (USA).....	5	18.5	9	37.5	9	37.5	7	29.2
Windward Islands								
Dominica.....	82	141.2	77	127.8	89	143.0	96	154.8
Grenada.....	46	55.4	47	55.1	35	39.7	...	...
St. Lucia.....	156	186.0	79	92.4	143	164.0	d) 67	75.3
St. Vincent.....	18	25.0	127	172.8	34	44.8	33	42.5

(a) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955; São Paulo, 1956.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Provisional.

TABLE 45. SPECIFIC ACTIVITIES IN TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS, 1956

Area	Number of clinic centers	Number of mobile units	X-ray examinations			Number of BCG vaccinations	Drug used			
			Number	Cases found			PAS	Isoniazid	Streptomycin	Others
				Number	Per cent					
Bolivia	12	...	6,598	1,285	19.5	2,400	...	...	Yes	...
Brazil	87	14	1,087,310	2,481	0.2	2,452,170	...	...	...	...
Chile	...	3	...	...	...	373,544	Yes	Yes	Yes	...
Colombia	50	7	391,726	7,218	1.8	1,138,930	Yes	Yes	Yes	Yes
Costa Rica	1	1	47,702	700	1.5	14,056	Yes	Yes	Yes	...
Cuba	...	...	22,816	1,333	5.8	45,769	Yes	Yes	Yes	Yes
Dominican Republic	11	1	122,613	2,043	1.7	38,693	Yes	Yes	Yes	Yes
Ecuador	a) 18	2	145,005	3,874	2.7	70,145	Yes	Yes	Yes	Yes
El Salvador	9	...	90,700	1,533	1.7	7,169	Yes	Yes	Yes	...
Guatemala	-	2	4,393	1,752	39.9	355,342	...	...	...	...
Haiti	8	...	...	...	...	12,522	...	...	...	...
Mexico	63	3	212,487	5,352	2.5	2,064	Yes	Yes	Yes	Yes
Nicaragua	2	1	33,772	...	...	5,787	-	...	...	...
Paraguay	301	...	80,730	301	0.4	...	Yes	Yes	Yes	...
Peru	27	2	183,100	10,555	5.8	37,232	...	...	...	...
United States	...	...	17,000,000	...	...	...	...	...	...	...
Uruguay	34	8	128,856	665	0.5	34,344	Yes	Yes	Yes	Yes
Venezuela	87	1	769,088	6,016	0.8	44,755	Yes	Yes	Yes	...
Alaska	...	...	11,602	...	...	11,178	...	...	...	...
Barbados	2	1	...	11	...	39,439	...	...	...	...
Bermuda	1	1	...	...	...	...	Yes	Yes	Yes	...
British Guiana	2	1	20,224	240	1.2	8,927	Yes	Yes	Yes	-
British Honduras	6	-	2,625	38	1.4	3,332	Yes	Yes	Yes	...
Canal Zone	2	-	9,149	28	0.3	317	Yes	Yes	Yes	...
French Guiana (b)	...	-	...	...	...	2,179	Yes	Yes	...	...
Guadeloupe	2	1	3,991	261	6.5	11,292	Yes	Yes	Yes	...
Hawaii	34	3	2,922	252	8.6	-	-	-	-	-
Jamaica	13	2	13,137	259	2.0	675	Yes	Yes	Yes	...
Leeward Islands	-	-	...	...	...	-	Yes	Yes	Yes	...
Antigua	-	-	...	...	...	-	Yes	Yes	Yes	-
St. Kitts-Nevis-Anguilla	-	-	558	...	...	-	Yes	Yes	Yes	-
Virgin Islands	1	...	...	4	...	-	Yes	Yes	Yes	...
Martinique	7	2	21,994	685	3.1	7,178	Yes	Yes	Yes	...
Netherlands Antilles	3	...	3,828	36	0.9	...	...	...	...	...
Puerto Rico	20	3	300,000	1,276	0.4	-	Yes	Yes	Yes	...
Trinidad and Tobago	2	1	45,420	179	0.4	11,409	Yes	Yes	Yes	-
Virgin Islands (USA)	2	...	2,964	7	0.2	-	Yes	...	Yes	...
Windward Islands	-	-	-	-	-	-	Yes	Yes	Yes	-
Dominica	-	-	-	-	-	-	Yes	Yes	Yes	-
Grenada	1	-	...	...	...	632	Yes	Yes	Yes	...
St. Lucia	c) 1	-	...	...	...	-	Yes	Yes	Yes	-
St. Vincent	1	-	...	...	...	-	Yes	Yes	Yes	...

(a) In addition, the Ecuadorian Antituberculosis League has 21 dispensaries and 19 survey centers.

(b) Antituberculosis campaign began in September 1955.

(c) Ambulant treatment only; 14 general health clinics used for tuberculosis.

TABLE 46. NUMBER OF REPORTED CASES OF TYPHOID FEVER WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	2,202	12.0	2,491	13.3	1,944	10.2	1,830	9.4
Bolivia .....	a) 879	28.1	197	6.2	300	9.4	300	9.3
Brazil (a,b).....	1,622	19.7	1,536	18.1	3,157	35.0	2,355	24.9
Canada (c) .....	370	2.5	403	2.6	314	2.0	377	2.3
Chile .....	a) 4,276	67.7	3,907	61.0	4,176	64.3	4,168	63.3
Colombia (d) .....	9,302	94.7	10,618	97.2	a) 14,561	131.4	a) 12,864	108.3
Costa Rica .....	164	18.6	117	12.8	269	28.3	224	22.7
Cuba .....	1,018	17.3	481	8.0	495	8.1	1,037	16.6
Dominican Republic .....	e) 379	16.1	158	6.5	216	8.6	211	8.1
Ecuador (a) .....	1,928	55.1	2,182	61.2	1,570	42.5	1,569	41.3
El Salvador (d).....	a) 533	59.7	488	54.2	652	63.0	817	74.7
Guatemala (a) .....	668	21.8	511	16.2	718	22.0	503	15.0
Haiti .....	196	6.1	471	14.4	154	4.7	249	7.4
Mexico .....	4,978	17.7	5,935	20.6	6,055	20.4	5,130	16.8
Nicaragua .....	637	54.7	685	56.9	286	23.0	184	14.3
Panama .....	47	5.8	37	4.4	33	3.8	52	5.9
Paraguay .....	d) 96	7.3	d) 71	5.3	d) 43	6.0	128	8.0
Peru (a,d).....	4,200	112.3	3,815	95.9	4,385	106.8	4,960	115.7
United States .....	2,252	1.4	2,169	1.3	1,704	1.0	1,700	1.0
Uruguay .....	620	24.5	675	26.2	714	27.3	399	15.1
Venezuela (a,d).....	1,180	39.0	1,281	39.9	829	24.8	f) 1,322	38.2
Alaska .....	7	3.4	3	1.4	8	3.8	1	0.5
Bahama Islands .....	9	10.5	14	15.6	13	13.6	6	5.6
Barbados .....	67	30.4	42	18.7	78	34.1	88	38.6
Bermuda .....	-	-	-	-	-	-	1	2.4
British Guiana .....	682	154.6	667	147.0	520	111.4	499	103.9
British Honduras.....	85	113.9	42	54.5	40	50.2	17	20.8
Canal Zone .....	1	2.4	-	-	2	5.1	3	8.0
French Guiana .....	...	...	9	32.3	19	66.2	15	51.2
Guadeloupe .....	97	43.5	28	12.2	64	27.0	26	10.6
Hawaii .....	-	-	-	-	1	0.2	-	-
Jamaica .....	409	27.5	411	27.1	462	30.0	771	49.3
Leeward Islands								
Antigua (a).....	49	100.2	47	93.9	54	104.0	50	93.7
Montserrat.....	15	113.0	9	65.7	-	-	...	...
St. Kitts-Nevis-Anguilla .....	8	15.5	7	13.3	4	7.4	10	18.2
Virgin Islands .....	11	149.2	7	93.0	2	26.0	-	-
Martinique (a).....	80	34.2	122	51.0	142	57.5	148	58.5
Netherlands Antilles.....	13	7.3	12	6.6	5	2.7	24	13.0
Puerto Rico .....	74	3.3	44	2.0	39	1.7	90	4.0
Surinam .....	66	32.9	55	26.6	59	27.6	...	...
Trinidad and Tobago .....	400	59.0	254	36.4	146	20.3	172	23.2
Virgin Islands (USA).....	-	-	-	-	2	8.3	2	8.3
Windward Islands								
Dominica .....	74	127.4	41	68.0	95	152.6	95	153.2
Grenada .....	31	37.3	32	37.5	18	20.4	...	...
St. Lucia .....	47	56.0	29	33.9	27	31.0	24	27.0
St. Vincent .....	148	205.2	116	157.9	65	85.6	11	14.2

(a) Including paratyphoid fever.

(b) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.

(c) Excluding Northwest Territories; including Yukon beginning 1955.

(d) Reporting area.

(e) Cases treated in hospitals.

(f) Provisional.

## TYPHUS

Epidemic (louse-borne) typhus was reported in 8 countries in the Americas during the five-year period 1953-1957 (Table 47). In 1957, 746 cases were reported which is less than one-third the number reported in 1953. In addition endemic (flea-borne) typhus was reported during this period in 6 of these countries. In 1957, 1,048 cases of endemic typhus were reported in 8 countries and 2 other areas in the Americas with 1,126 cases due to this form of typhus in 1956. Marked declines are noted in several of the countries in which endemic typhus has been a problem.

In countries with typhus, control programs were generally maintained: in Bolivia DDT is applied in epidemic areas; in Chile a mass program is carried on in the endemic areas with identification, isolation and treatment of the cases and disinsectization of the foci; in Guatemala and Peru, vaccination programs are being carried out; in Mexico the control program includes application of insecticides and health education; in the United States, a surveillance program is maintained by the Communicable Disease Center.

## WHOOPIING COUGH

Whooping cough continues to cause high case rates in many areas of the Americas (Table 48). In addition, as was seen in analysis of mortality in infancy and early childhood, whooping cough is one of the principal causes of death in some of the countries. Since this is a disease which can usually be prevented by administration of pertussis vaccine to infants, efforts should be directed to reduction of this cause of morbidity and mortality. Routine immunization should be started at 3 to 4 months of age.

From the data regarding number of children given whooping cough immunization in Table 49, it is evident that generally this immunization is combined with diphtheria immunization. The pertussis problem as seen from case and death reports is much greater than the diphtheria problem. Efforts need to be directed to the extension of immunization to as many infants and children as possible in order to prevent cases and deaths from whooping cough.

**TABLE 47. NUMBER OF REPORTED CASES OF EPIDEMIC AND ENDEMIC TYPHUS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1957**

Area	1953		1954		1955		1956		1957	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>Epidemic Typhus</b>										
Argentina.....	2	0.0	-	-	-	-	-	-	-	-
Bolivia.....	409	13.1	1,021	32.3	397	12.4	220	6.8	66	2.0
Chile.....	a) 238	3.8	-	-	7	0.1	90	1.4	9	0.1
Colombia (b).....	174	1.8	122	1.1	197	1.8	77	0.6	53	0.4
Ecuador.....	512	14.6	468	13.1	319	8.6	206	5.4	178	4.6
Guatemala (a).....	16	0.5	9	0.3	14	0.4	1	0.0	1	0.0
Mexico.....	762	2.7	1,008	3.5	382	1.3	324	1.1	314	1.0
Peru (b).....	404	10.8	476	12.0	229	5.6	173	4.0	125	2.8
<b>Endemic Typhus</b>										
Argentina.....	-	-	6	0.0	19	0.1	-	-	c) 2	0.0
Brazil (d).....	4	0.0	4	0.0	2	0.0	3	0.0	...	...
Chile (a).....	...	...	280	4.4	382	5.9	163	2.5	116	1.7
Colombia (b).....	1,664	16.9	1,463	13.4	842	7.6	672	5.7	502	4.0
Costa Rica.....	13	1.5	8	0.9	6	0.6	8	0.8	...	...
Dominican Republic.....	-	-	-	-	10	0.4	4	0.2	c) 6	0.2
Ecuador.....	24	0.7	8	0.2	7	0.2	11	0.3	18	0.5
El Salvador (b).....	...	...	11	1.2	...	...	1	0.1	38	3.3
Mexico.....	...	...	...	...	291	1.0	149	0.5	246	0.8
Peru (b).....	24	0.6	6	0.2	4	0.1	7	0.2	...	...
United States (e).....	221	0.1	163	0.1	135	0.1	98	0.1	114	0.1
Venezuela (b).....	66	2.2	47	1.5	21	0.6	c) 1	0.0	c) -	-
Canal Zone.....	1	2.4	-	-	-	-	-	-	-	-
Hawaii.....	3	0.6	8	1.7	8	1.6	5	1.0	5	0.9
Martinique.....	1	0.4	-	-	-	-	-	-	-	-
Puerto Rico.....	2	0.1	4	0.2	-	-	4	0.2	1	0.0

(a) Including unspecified typhus.  
 (b) Reporting area.  
 (c) Provisional.

(d) Federal District and State capitals except: Salvador, 1953 and 1954; Niteroi, 1955.  
 (e) Including a few cases reported as Brill's disease.

TABLE 48. NUMBER OF REPORTED CASES OF WHOOPING COUGH WITH RATES  
PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	20,152	109.5	31,501	168.0	25,700	134.4	34,601	177.6
Bolivia .....	2,324	74.4	396	12.5	937	29.3	499	15.4
Brazil (a).....	5,990	72.7	7,126	84.0	7,383	81.9	6,652	70.3
Canada (b).....	9,387	63.3	11,600	76.0	13,683	87.3	8,513	53.0
Chile .....	3,392	53.7	7,890	123.1	7,080	109.0	7,380	112.0
Colombia (c).....	22,771	231.9	29,948	274.3	41,099	370.9	46,096	388.0
Costa Rica .....	1,606	182.2	551	60.2	442	46.5	1,352	136.9
Cuba .....	40	0.7	59	1.0	49	0.8	53	0.8
Dominican Republic .....	...	...	4,248	174.3	5,718	226.8	2,275	87.2
El Salvador (c).....	2,156	241.4	3,400	377.8	861	83.3	720	65.8
Guatemala .....	7,515	245.7	8,333	263.8	5,736	176.1	5,601	167.3
Haiti .....	1,122	34.8	3,568	109.3	1,172	35.5	1,895	56.7
Mexico .....	24,946	88.9	36,245	125.6	23,823	80.3	34,023	111.4
Nicaragua .....	1,877	161.0	1,224	101.6	1,320	106.0	241	18.7
Panama .....	520	63.9	614	73.3	547	63.5	801	90.4
Paraguay .....	c) 1,725	130.4	c) 4,530	335.8	c) 1,065	148.7	1,577	98.5
Peru (c).....	15,149	405.2	14,199	357.1	12,562	306.1	17,771	414.5
United States .....	37,129	23.5	60,886	37.8	62,786	38.2	31,732	19.0
Uruguay .....	938	37.0	3,431	133.0	1,095	41.9	2,075	78.3
Venezuela (c).....	11,023	364.5	14,184	441.6	17,459	522.7	d) 13,610	392.9
Alaska .....	16	7.8	-	-	54	25.8	80	38.8
Bahama Islands .....	285	334.0	26	29.0	8	8.4	6	5.6
Bermuda .....	-	-	-	-	46	112.6	6	14.4
British Guiana .....	343	77.8	374	82.4	372	79.7	503	104.7
British Honduras .....	199	266.7	702	911.6	102	128.0	99	121.1
Canal Zone .....	3	7.1	-	-	5	12.8	1	2.7
French Guiana .....	...	...	-	-	72	250.9	15	51.2
Guadeloupe .....	...	...	1	0.4	67	28.3	-	-
Hawaii .....	136	28.6	114	23.6	26	5.2	8	1.5
Jamaica .....	...	...	2,178	143.5	288	18.7	1,273	81.4
Leeward Islands								
Antigua .....	133	272.0	127	253.6	1	1.9	3	5.6
Montserrat .....	-	-	13	94.9	-	-	...	...
St. Kitts-Nevis-Anguilla .....	42	81.5	-	-	-	-	2	3.6
Martinique .....	16	6.8	186	77.8	52	21.1	29	11.5
Puerto Rico .....	1,057	47.8	2,475	111.0	742	32.8	561	24.7
Trinidad and Tobago .....	81	11.9	693	99.3	488	67.7	226	30.4
Virgin Islands (USA).....	2	7.4	-	-	-	-	-	-
Windward Islands								
Dominica .....	2	3.4	-	-	4	6.4	2,240	3612.9
St. Lucia .....	...	...	42	49.1	1,479	1696.4	4,312	4844.6
St. Vincent .....	614	851.3	-	-	2,079	2737.0	360	463.5

(a) Federal District and State capitals except: Salvador 1953 and 1954; Niteroi, 1955.

(b) Excluding Northwest Territories; including Yukon beginning 1955.

(c) Reporting area.

(d) Provisional.

TABLE 49. NUMBER OF CHILDREN GIVEN WHOOPING COUGH IMMUNIZATION IN THE AMERICAS, 1956

Area	Children vaccinated	Type of vaccine	Area	Children vaccinated	Type of vaccine
Argentina .....	a) 200,000	D.P.T.	Alaska .....	45	Pertussis
Bolivia .....	41,279	D.P.T.	Bermuda .....	...	D.P.T.
Chile .....	94,366	Mixed	British Guiana .....	503	D.P.T.
Colombia .....	187,972	Mixed & simple	British Honduras ....	2,226	D.P.T.
Costa Rica .....	9,919	D.P.T.	Canal Zone .....	4,075	D.P.T.
Ecuador .....	32,900	Pertussis and	French Guiana .....	15	...
		D.P.T.	Hawaii .....	...	D.P.T.
El Salvador .....	27,668	D.P.T.	Martinique .....	309	D.P.T.
Guatemala .....	20,861	D.P.T.	Puerto Rico .....	27,523	D.P.T.
Haiti .....	a) 7,466	D.P.T.	Virgin Is. (USA) ....	326	D.P.T.
Nicaragua .....	3,551	D.P.T.	Windward Islands		
Paraguay .....	13,539	D.P.T.	St. Lucia .....	2,160	...
Peru .....	59,428	Pertussis, diph.-pertussis			
Uruguay .....	26,130	...			
Venezuela .....	82,335	Pertussis			

(a) Adjusted to agree with total number given triple vaccine (D.P.T.) in Table 26.

Note: D.P.T. denotes triple vaccine (combined diphtheria toxoid, pertussis vaccine and tetanus toxoid).

YAWS

Yaws, a nonvenereal treponematosis, was reported in 8 countries and 14 other

areas in the Americas (Table 50). This is a disease which can be eradicated through the application of known methods. In Haiti where an eradication program is in operation the

TABLE 50. NUMBER OF REPORTED CASES OF YAWS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1956

Area	1953		1954		1955		1956	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Colombia (a) .....	4,246	43.2	2,473	22.6	1,299	11.7	1,154	9.7
Costa Rica.....	-	-	1	0.1	1	0.1	-	-
Cuba.....	110	1.9	-	-	-	-	-	-
Dominican Republic.....	...	...	15,574	638.9	24,107	956.0	...	...
Haiti.....	...	...	17,249	528.2	2,017	61.0	1,074	32.1
Panama.....	189	23.2	163	19.5	144	16.7	123	13.9
Peru (a).....	423	11.3	163	4.1	288	7.0	181	4.2
Venezuela (a).....	1,285	42.5	976	30.4	901	27.0	b) 699	20.2
Bahama Islands.....	...	...	1	1.1	-	-	-	-
British Guiana.....	45	10.2	c) 90	19.8	c) 90	19.3	58	12.1
French Guiana.....	...	...	...	...	48	167.2	...	...
Guadeloupe.....	91	40.8	...	...	...	...	...	...
Leeward Islands								
Antigua.....	35	71.6	70	139.8	46	88.6	27	50.6
Montserrat.....	432	3255.0	293	2138.7	108	755.2	...	...
St. Kitts-Nevis-Anguilla .....	574	1113.4	498	942.7	239	442.9	...	...
Virgin Islands .....	6	81.4	13	172.8	-	-	-	-
Surinam .....	312	155.6	341	164.7	269	126.0	...	...
Trinidad and Tobago .....	58	8.6	719	103.1	451	62.6	515	69.4
Windward Islands								
Dominica .....	403	693.9	146	242.3	348	559.1	617	995.2
Grenada .....	1,933	2327.6	798	935.5	178	201.8	...	...
St. Lucia .....	774	922.7	1,124	1314.4	1,010	1158.5	640	719.1
St. Vincent .....	1,680	2329.4	1,430	1945.9	401	527.9	410	527.9

(a) Reporting area.

(b) Provisional.

(c) Revised.

TABLE 51. ESTIMATED POPULATION OF AREA AFFECTED WITH YAWS, ESTIMATED CASES, TREATMENTS AND TYPE OF YAWS PROGRAM IN THE AMERICAS, 1956

Area	Population of area affected	Estimated number of cases	Number of cases treated	Contacts treated	Type of program		Method used
					Control	Eradication	
Bolivia .....	50,000	5,000	...	...	...	a) -	...
Brazil .....	9,000,000	600,000	143,106	127,745	-	Yes	House-to-house
Colombia .....	600,000	40,000	17,250	42,780	-	Yes	...
Costa Rica .....	987,778	...	1	...	-	-	-
Cuba .....	...	...	2	...	-	-	-
Dominican Republic .....	800,000	200,000	9,000	165,000	-	Yes	Mobile unit
Ecuador .....	152,051	4,541	541	...	Yes	-	...
Haiti .....	...	6,592	6,992	38,945	-	Yes	House-to-house
Peru .....	450,000	12,000	678	-	-	-	-
Venezuela .....	1,066,005	...	162	211	Yes	-	House-to-house
British Guiana .....	8,400	58	58	...	-	Yes	...
French Guiana .....	2,500	...	...	...	...	...	...
Guadeloupe .....	...	45	...	...	...	...	...
Jamaica .....	77,813	...	b) 625	b) 73	...	...	...
Leeward Islands							
Antigua .....	53,341	30	27	...	-	-	-
St. Kitts-Nevis-Anguilla..	54,831	...	...	...	-	Yes	House-to-house
Trinidad and Tobago .....	742,500	...	621	...	Yes	c) -	...
Windward Islands							
Dominica .....	58,000	1,734	1,698	-	Yes	c) -	Clinic
Grenada .....	86,600	46	...	...	-	Yes	...
St. Vincent .....	77,669	...	...	...	-	Yes	House-to-house

(a) Eradication program under study.

(b) Year 1955.

(c) Eradication program planned for 1957.

number of reported cases declined from 82,735 in 1950 to 1,074 in 1956 and surveillance will be continued until the disease is completely eradicated. In other areas where yaws eradication programs were begun during the latter part of this period marked reductions are noted.

Ten countries and 10 other areas provided some information regarding the yaws program being carried out (Table 51). Ten areas either declared that they had an eradication program or that one was to be initiated in 1957. Two others reported a control program. Eight countries and 9 other areas provided the estimated population of the area affected with yaws which was approximately 14 million. The Governing Bodies of PASO/WHO have designated the eradication of yaws as one of the four eradication programs underway in the Americas. Although progress is evident concerted efforts are needed for success of this eradication program.

#### YELLOW FEVER

The numbers of reported cases of yellow fever in the Americas for the years 1953-1957 are given in Table 52. In this five-year period 10 countries and one other area reported cases of yellow fever namely Bolivia, Brazil, Colombia, Costa Rica, Guatemala, Honduras, Nicaragua, Panama, Peru, Venezuela, and Trinidad. All of the cases were reported as jungle yellow fever except 3 cases of urban yellow fever in Trinidad in 1954. During this period 271 fatal, 55 non-fatal and 3 unspecified cases were reported. The non-fatal cases were as follows: Bolivia, 7 in 1953, 1 in 1956, 6 in 1957; Brazil, 9 in 1954, 6 in 1955; Guatemala, 3 in 1957; Panama, 1 in 1957; Peru, 6 in 1954 (3 unspecified in 1957); Trinidad and Tobago, 14 in 1954; Venezuela, 2 in 1957. In addition to the reports of human cases evidence of yellow fever in monkeys was found in Guatemala and Honduras in 1956, and in Guatemala and British Honduras in 1957.



TABLE 52. NUMBER OF REPORTED CASES OF YELLOW FEVER (a) WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1953-1957

Area	1953		1954		1955		1956		1957	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bolivia .....	18	0.6	-	-	4	0.1	6	0.2	19	0.6
Brazil .....	39	0.1	9	0.0	8	0.0	2	0.0	10	0.0
Colombia .....	11	0.1	12	0.1	22	0.2	16	0.1	35	0.3
Costa Rica .....	5	0.6	-	-	-	-	-	-	-	-
Guatemala .....	-	-	-	-	-	-	-	-	3	0.1
Honduras .....	-	-	1	0.1	-	-	-	-	-	-
Nicaragua .....	8	0.7	-	-	-	-	-	-	-	-
Panama .....	-	-	-	-	-	-	1	0.1	2	0.2
Peru .....	-	-	26	0.3	-	-	-	-	3	0.0
Venezuela .....	8	0.1	29	0.5	5	0.1	3	0.1	6	0.1
Trinidad and Tobago .....	-	-	b) 18	2.6	-	-	-	-	-	-

(a) All cases were jungle yellow fever except 3 cases in Trinidad in 1954.

(b) Jungle yellow fever, 15 cases; urban yellow fever, 3 cases.

Twenty areas reported vaccinations for yellow fever and in 1956 more than 2,000,000 such vaccinations were reported. Only three countries gave the number of viscerotomy posts, namely Brazil with 1,425, Colombia with 167 and Venezuela with 147 (Table 53).

TABLE 53. NUMBER OF VACCINATIONS FOR YELLOW FEVER IN THE AMERICAS, 1956

Area	Number of vaccinations
Bolivia (a).....	4,058
Brazil.....	1,267,216
Colombia.....	140,292
Cuba .....	157
Ecuador.....	16,691
Guatemala.....	266,527
Haiti.....	2
Mexico.....	140,000
Nicaragua.....	6,680
Peru .....	3,000
Uruguay.....	136
Venezuela.....	491,332
British Guiana.....	2,170
British Honduras.....	3,081
Canal Zone.....	1,994
Guadeloupe.....	13
Martinique .....	223
Netherlands Antilles(b).	630
Trinidad and Tobago.....	2,103
Windward Islands	
St. Lucia .....	400

(a) Vaccination discontinued due to lack of funds.

(b) Aruba only.

The eradication of the *Aedes aegypti* mosquito from the Americas is one of the four eradication programs in progress. Reports of this program are received currently and published in the Weekly Epidemiological Report and the Boletín of the Bureau. A report of the status of this eradication program will be one of the official documents of the XV Pan American Sanitary Conference.

## CHAPTER IV

### Sanitation Programs

For the prevention of the spread of communicable diseases as well as for economic, social and hygienic reasons the development of sanitation programs is a most important phase of the health program. In many areas in the past, sanitation programs have been one of the early developments in health work especially in rural areas. In other chapters of this report some information is provided regarding environmental sanitation programs. For example, in Chapter V the personnel employed in the field of sanitation and in Chapter VI the funds for environmental sanitation programs are given. In this chapter data provided regarding two essential phases of environmental sanitation, that is, the provision of water supplies and the provision of sanitary facilities, are presented to show the coverage by such facilities in the Americas. The data indicate not only the usefulness of this type of information as the basis for the extension of sanitation programs but also they show the need for the improvement of the collection of such data for use in planning. The provision of information regarding these facilities is obtained in several ways. At the time of the decennial census information regarding facilities in each home is often obtained as part of the housing section of the census. The public works department may collect such information for their program or it is possible that data are obtained through special surveys.

Environmental sanitation is a field to which major emphasis needs to be given in the next decade. A well developed and coordinated program requires sound technical and financial planning based on accurate data. Thus, there is great need for information regarding the population served by water supplies and sewage disposal facilities and for determination of the needs for supplies and other facilities.

#### WATER SUPPLIES

Spaces were provided for recording information regarding the population connected to water supply systems as well as the population served by public taps and private supplies. For presentation in Table 54 only the

estimated populations connected to water supply systems are given. Data regarding other source of water were not sufficient for inclusion. Estimates have been made for 1956 utilizing the distribution of population into urban and rural areas as given by the United Nations. The following explanations of the data presented in Table 54 are given for understanding the problems involved in the presentation of the data.

Argentina - For the country 44.7 per cent of the population were reported connected to water supply systems which were all in urban areas.

Bolivia - Only data for the urban area were reported where 59.1 per cent of the population were connected to a water supply.

Brazil - Nine hundred and eighty water supply systems were reported providing 16.8 per cent of the population. This figure was based on the number of houses connected and was an estimate of the Brazilian Institute of Geography and Statistics (I.B.G.E.) for 1954 published in 1956.

Canada - General statistics on Canadian waterworks were provided for municipal systems only and do not include private supplies, federally owned systems and the municipal systems in the Yukon and Northwest Territories. The source of data was the Municipal Utilities Magazine, January 1957. The following information was given:

Number of systems	1,646
Underground supplies	443
Surface supplies	1,204
Population served	9,764,000
Percentage of total population	65.1
Number of filtration plants	247
Number of chlorinated supplies	571

To obtain the estimated population provided with water supplies in 1956 (Table 54) the percentage given, 65.1, was applied to the total population of 1956.

Chile - Data provided by the Department of Environmental Sanitation for urban and rural

TABLE 54. NUMBER OF WATER SUPPLY SYSTEMS AND ESTIMATED POPULATION\* CONNECTED TO SYSTEMS IN URBAN AND RURAL AREAS OF THE AMERICAS, 1956

Area	Total			Urban			Rural		
	Water Systems	Population		Water Systems	Population		Water Systems	Population	
		Number	Per Cent		Number	Per Cent		Number	Per Cent
Argentina.....	...	8,710,000	44.7	...	8,710,000	71.5	-	-	-
Bolivia.....	...	...	...	135	642,000	59.1	...	...	...
Brazil.....	980	10,055,000	16.8	...	...	...	...	...	...
Canada.....	1,646	10,448,000	65.1	...	...	...	...	...	...
Chile.....	285	3,055,000	46.4	285	2,932,000	73.9	-	123,000	4.7
Colombia.....	501	3,006,000	23.2	501	3,006,000	64.0	-	-	-
Costa Rica.....	...	...	...	60	...	...	...	...	...
Dominican Republic...	80	1,662,000	63.7	17	621,000	100.0	63	1,041,000	52.4
Ecuador.....	24	752,000	19.8	15	...	...	9	...	...
El Salvador.....	260	340,000	15.0	260	340,000	41.1	-	-	-
Haiti.....	...	...	...	35	25,000	6.1	...	...	...
Honduras.....	80	...	...	73	...	...	7	...	...
Mexico.....	61,300	8,910,000	29.2	50,000	7,806,000	60.0	11,300	1,104,000	6.3
Nicaragua.....	23	167,000	13.0	15	162,000	36.1	8	5,000	0.6
Peru.....	...	...	...	102	1,807,000	59.7	...	...	...
United States.....	17,500	116,580,000	69.7	...	...	...	...	...	...
Uruguay.....	206	1,987,000	75.0	...	...	...	...	...	...
Venezuela.....	381	1,669,000	28.9	...	1,575,000	50.7	...	94,000	3.5
Alaska.....	380	84,000	40.8	40	...	...	340	...	...
Bahama Islands.....	9	18,500	17.2	1	11,500	25.9	8	7,000	11.1
British Honduras.....	2	29,000	35.5	2	29,000	63.5	-	-	-
Canal Zone.....	2	37,300	100.0	2	36,900	100.0	-	400	100.0
French Guiana.....	1	...	...	1	...	...	-	-	-
Guadeloupe.....	6	49,500	20.2	3	39,900	48.3	3	9,600	5.9
Hawaii.....	107	455,700	86.6	18	362,900	100.0	89	92,800	56.9
Jamaica.....	1,239	...	...	48	...	...	1,191	...	...
Puerto Rico.....	166	991,000	43.7	69	785,000	85.5	97	206,000	15.2
Trinidad and Tobago..	31	206,700	27.8	3	114,900	66.7	28	91,800	16.1
Virgin Islands (USA)	3	2,000	8.3	2	1,600	11.4	1	400	3.9
Windward Islands									
Dominica.....	19	2,800	4.6	2	2,400	16.2	17	400	0.9
Grenada.....	20	12,700	14.1	7	...	...	13	...	...
St. Lucia.....	9	700	0.8	3	...	...	6	...	...
St. Vincent.....	32	20,700	26.7	...	...	...	32	...	...

\*Estimated populations given to the nearest thousand except for territories with total populations of less than one million.

areas in 1957 were used in estimating the populations connected in 1956.

Colombia - The populations connected to water supply systems were reported in urban areas only and the urban percentage, 64.0, was used in estimating the population connected in 1956.

Dominican Republic - The entire population in urban areas and 63.7 per cent of the population of the country were reported connected to water supply systems.

Ecuador - Twenty-four cities were reported to have water supply services of which 15 were classified as urban and 9 as rural. It was estimated that 19.8 per cent of the population was connected.

El Salvador - According to the data provided 15.0 per cent of the population of the country were connected to a water supply system. All the "municipios" in the urban area were reported with some service but the service was not complete.

Haiti - Thirty-five water supply systems were reported in Haiti and on the basis of percentage of urban population it was estimated that these served 25,000 people in 1956.

Mexico - The information provided was estimated based on data obtained from the National Hypothecary Urban Bank, Hydraulic Resources and the work accomplished by the Inter-American Cooperative Health Service as well as attention which is given to their conservation, maintenance and health supervision. The percentages from the urban and rural areas were calculated and applied to the estimated population in 1956.

Nicaragua - The data provided for total and rural areas were used in estimating the population provided with water supplies in 1956.

Panama - According to the Environmental Sanitation Section the population outside of the cities of Panama and Colon connected was 78,202 with 68,241 in urban areas and 9,961 in rural areas.

Paraguay - A water supply system is now under construction for Asuncion.

Peru - According to the data provided 59.7 per cent of the urban population were con-

nected to water supply systems and this percentage was applied to the estimated urban population for 1956.

United States - The estimated number of water supply systems was 17,500 with 69.7 per cent of the population connected.

Uruguay - Two hundred and six water supply systems were reported serving 75.0 per cent of the population.

Venezuela - The data were given for localities of 5,000 inhabitants or more, for those with 500-5,000 inhabitants and for the remainder classed as rural as follows:

	Total	Supplies	Connected
Urban (5,000 +)	2,852,955	85	1,447,380
Grouped rural (500-5,000)	878,020	296	221,250
Disperse rural	2,041,815	...	...

To obtain the population connected the number of connections was multiplied by 5. The water supplies in the rural area have not been studied. For the estimated populations in Table 54 the total population connected was used and the percentage for the urban area (5,000+) was applied to the estimated urban population.

Alaska - The estimated population connected to water supply systems of 84,000 was used.

Bermuda - All premises, both private and public, are self-supplying by individually caught and stored rain water supplies.

British Guiana - Two water supply systems were reported in the urban area but the population served was not available.

British Honduras - Two water supplies served 29,000 or 63.5 per cent of the estimated urban population.

Canal Zone - The entire population is connected to the two water supply systems.

Guadeloupe - Based on the population served by 3 water supplies in the urban area and 3 in the rural area 20.3 per cent of the population was connected.

Hawaii - A high proportion of the population was served by 107 water supply systems with

the remainder by private supplies which includes systems serving less than 250 population.

#### Leeward Islands:

Antigua - The whole island will shortly be on a piped inter-connected water supply, except for a few farms and houses with a population possibly of 2,000.

St. Kitts-Nevis-Anguilla - There are 10 surface supplies and 6 wells without connections to the houses.

Virgin Islands - There is no water supply system as such. Rain water in cisterns and wells sunk by the government or private individuals is used.

Martinique - The 34 communes of the Department are served by a water supply system but only 18 have water of controlled quality with a purification station. The population connected to these systems was not known.

Puerto Rico - The percentages of the population connected from the last census were known and were applied to the estimated population of 1956.

Virgin Islands (U.S.A.) - The public supplies are not used exclusively but supplemented by private supplies.

For only 13 countries were data provided for the entire country and in these the percentages of the population connected to a water supply system varied from slightly more than 10 to 75 per cent. Over half of the population of urban areas were connected in 8 of the 11 countries providing such data. The population connected in rural areas usually was small or was not known. The lack of water supplies in urban areas is the most important single factor hindering health progress. It also limits industrial development and international travel. The goal for environmental sanitation programs is to have practically the entire urban population connected to a water supply system.

In rural areas small communities of approximately 100 families or 500 persons living in close proximity can economically be provided with a communal water supply. Thus there is great need for extension of water

supply systems to a much greater proportion of the population of the Americas.

#### SEWAGE DISPOSAL SYSTEMS

The development of a sewage disposal system is dependent on the development first of a water supply system. Thus the coverage of the urban area was lower and a very small proportion of rural areas of 4 countries were reported with sewage disposal systems. Private septic tanks and latrines are used in both urban and rural areas. Table 55 provides data regarding sewage disposal systems and other facilities for the countries and other areas of the Americas. The following explanation is given of the data on sanitary facilities.

Argentina - Nearly six million inhabitants were connected to sewage disposal systems (30.3 per cent of population of the country) and all lived in urban areas. An additional 68.1 per cent had private septic tanks or privies.

Bolivia - For the country as a whole 16.2 per cent were connected to sewage disposal systems. Of these 8.5 per cent lived in rural areas.

Brazil - Data were available for the country as a whole for which 9.6 per cent were connected to a sewage disposal system based on the number of houses with such connections.

Canada - The source of data provided was the Municipal Utilities Magazine of January 1957, from which the following information was taken. There were 866 sewer systems serving 8,318,000 or 55.5 per cent of the population. This percentage was applied to the 1956 estimated population for figure in Table 55. The number of sewage treatment plants was 533, partial treatment plants 315, activated sludge plants 84 and trickling filter plants 44.

Chile - Ninety sewage systems were provided for over 2 million population of which 2.8 per cent lived in rural areas.

Colombia - The population connected to sewage disposal systems (20.2 per cent) was all in urban areas.

TABLE 55. NUMBER OF SEWAGE DISPOSAL SYSTEMS AND ESTIMATED POPULATION\* SERVED BY THESE AND OTHER FACILITIES FOR SEWAGE DISPOSAL IN THE AMERICAS, 1956

Area	Number of Systems	Estimated Population					
		Connected to sewage disposal systems		Served by other facilities		Not served	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
Argentina.....	...	5,904,000	30.3	13,290,000	68.1	312,000	1.6
Bolivia.....	1,309	524,000	16.2	...	...	...	...
Brazil.....	459	5,745,000	9.6	...	...	...	...
Canada.....	866	8,907,000	55.5	...	...	...	...
Chile.....	90	2,115,000	32.1	...	...	...	...
Colombia.....	303	2,614,000	20.2	1,953,000	15.1	8,372,000	64.7
Dominican Republic.....	4	391,000	15.0	2,217,000	85.0	-	-
Ecuador.....	14	752,000	19.8	1,856,000	48.9	1,188,000	31.3
El Salvador.....	25	975,000		...	43.0	1,293,000	57.0
Mexico.....	3,500	8,215,000	26.9	4,397,000	14.4	17,926,000	58.7
Nicaragua.....	6	61,000	4.7	1,026,000	79.7	201,000	15.6
Paraguay.....	1	42,000	2.6	1,303,000	81.4	256,000	16.0
United States.....	13,500	96,341,000	57.6	68,911,000	41.2	2,007,000	1.2
Uruguay.....	25	1,190,000	44.9	...	...	...	...
Venezuela.....	65	1,048,000	18.2	1,480,000	25.6	3,245,000	56.2
Alaska.....	260	70,000	34.0	...	...	...	...
Bahama Islands.....	1	6,500	6.0	...	...	...	...
Guadeloupe.....	2	37,400	15.3	...	...	...	...
Hawaii.....	45	254,100	48.3	271,900	51.7	-	-
Jamaica.....	5	1,412,000		...	90.3	152,000	9.7
Leeward Islands							
Antigua.....	-	-	-	12,600	23.6	40,700	76.4
St. Kitts-Nevis-Anguilla.....	-	-	-	28,100	52.1	25,900	47.9
Puerto Rico.....	64	444,000	19.6	447,000	19.7	...	...
Trinidad and Tobago.....	1	21,300	2.8	720,000	97.0	1,200	0.2
Virgin Islands (U.S.A.)....	3	7,100	29.4	9,200	38.3	7,700	32.3
Windward Islands							
Dominica.....	1	1,300	2.0	13,800	22.3	46,900	75.7
Grenada.....	1	4,200	4.6	61,800	68.7	24,000	26.7
St. Lucia.....	1 a)	300	a) 0.3	20,900	23.5	...	...
St. Vincent.....	b) 4	-	-	71,800	92.5	5,900	7.5

\*Estimated populations given to nearest thousand except for territories with total populations of less than one million.

(a) Also connected 4 public latrines.

(b) No connections were reported.

Costa Rica - Eight sewage disposal systems were reported in the urban areas although the population connected was not known.

Dominican Republic - Four sewage disposal systems were available in urban areas and 15.0 per cent of the population were served by connections to these.

Ecuador - Fourteen localities had sewage disposal systems of which 2 are considered rural. The population connected was estimated.

El Salvador - The number of sewage disposal systems was stated to be 25 although incomplete.

Honduras - Twenty-two sewage disposal systems were reported although the population connected was unknown.

Mexico - Over one fourth of the population (26.9 per cent) was served by connections to sewage disposal systems. Of these 7.1 per cent were in rural areas.

Panama - Data were provided excluding the cities of Panama and Colon and are thus not included.

Peru - Data were available only for the urban area and of this 58.7 per cent were served by 95 sewage disposal systems.

United States - Fifty-seven and sixtenths per cent of the population were served by sewage disposal systems and additional 20.6 per cent by private septic tanks and 20.6 per cent by privies.

Uruguay - From data provided an estimate was made for the population connected to sewage disposal systems for the country.

Venezuela - In addition to the data provided in Table 55, the following estimates of the population with sanitary facilities were provided from the available data to give an approximation of the situation:

	Total	Con- nected	Private septic tanks	La- trines	Without tanks or latrines
Urban(5,000+)	2,852,955	991,266	144,839	941,332	775,518
Grouped rural (500-5,000)	844,883	25,346	16,897	168,976	633,664
Disperse rural	2,074,952	31,123	41,500	165,996	1,836,333

Of the 65 sewerage systems 58 were in urban areas of 5,000 and more population and 7 in the communities with 500-5,000 population.

Alaska - The estimated population connected to sewage disposal systems of 70,000 was used.

Bermuda - Apart from the City of Hamilton, Kindley Air Force Base and the United States Naval Base which are partially seweraged, all premises drain to individual disposal cesspits.

British Guiana - The population served by two sewage disposal systems in urban areas was not known.

British Honduras - There is no sewage disposal system in the area.

Canal Zone - The entire population was served by 24 sewage disposal systems.

French Guiana - The population served by the one sewage disposal system was not known.

Guadeloupe - The two sewage disposal systems served 15.3 per cent of the population which was entirely in the urban area.

Hawaii - In addition to 48.3 per cent of the population served by sewage disposal systems, 51.5 per cent were served by private septic tanks which includes disposal by leaching cesspools.

Jamaica - The population served by the 5 sewage disposal systems was not known, although 90.3 per cent of the population was provided with a disposal system or other facility.

Leeward Islands - No sewage disposal systems were reported to be in operation in these islands.

Martinique - Fort-de-France will be served by a sewage disposal system which is in construction.

Puerto Rico - From the data provided by the 1950 census the population connected to sewage disposal systems was 19.6 per cent, all of this population was in the urban area. An additional 19.7 per cent were known to be provided with private septic tanks or latrines but the status of the remaining population was unknown.

Trinidad and Tobago - One sewage disposal system served for connections for 21,320 persons and nearly all the remaining population was served by private septic tanks or latrines.

Virgin Islands (U. S. A.) - Three sewage disposal systems were estimated to serve 29.4 per cent of the population and an additional 38.3 per cent were served by private septic tanks or latrines.

In summary from the data provided in Table 55, although not complete, there is a need for extension of sewage disposal facilities especially in urban areas. For areas without sewage disposal systems private septic tanks and latrines are needed. Several countries and other areas had over half of the population without sanitary facilities which indicates the great needs for provision of sewage disposal systems and other facilities as an essential part of health programs.



## CHAPTER V

### Medical and Health Personnel

Knowledge of the numbers of physicians, dentists, nurses and other health workers rendering service in a country is essential for the development of sound health programs. The key element for the health of the people of a country is a well prepared medical profession and likewise other well-trained professional workers. First it is necessary to consider the total number of physicians, dentists, nurses and various other professional personnel available in the country for individual or community services. Tables 56 and 57 provide information regarding the total number of medical and other health workers available for various types of service to the population. The entire group for the country is the source from which health services draw to develop the team of health workers needed for national and local health services. The following three tables (58-60) provide the numbers of these health workers employed in health services either at the national, provincial or state, or local levels. This information is essential for health planning as it is necessary to consider the available resources in personnel and, if they are insufficient, to develop the educational and training facilities to meet the need for additional health workers for the expanding health programs.

#### TOTAL MEDICAL AND HEALTH PERSONNEL

Nearly all the countries and other areas of the Americas provided the total number of physicians and these numbers with rates per 10,000 population are given in Table 56. As would be expected the numbers of physicians per 10,000 population varied widely and five countries, Argentina, Canada, Cuba, United States and Uruguay each had 10 physicians or more per 10,000 population. Of the 20 countries providing data 5 had less than 3 physicians per 10,000 population or, there were more than 3,333 persons per physician. Of the 22 other areas providing the number of physicians only the Canal Zone and Hawaii had 10 physicians or more per 10,000 population and more than half, 12, had less than 3 physicians per 10,000 population. Thus

these data indicate that a major health need in the Americas is to increase the number of physicians to provide the medical and health services. This requires planning for the expansion of the education and training facilities.

The numbers of dentists with rates per 10,000 population are also provided in this table. In all areas the numbers of dentists are much smaller than the numbers of physicians. Only three countries, namely Argentina, the United States and Uruguay had more than 5 dentists per 10,000 population or, one dentist was serving 2,000 population or less. At the other extreme there were eight countries and 11 other areas where there was less than one dentist for 10,000 population.

As reported in Table 56 the number of veterinarians was less than 1 per 10,000 population in all countries and other areas of the Americas except Cuba, United States and the Canal Zone. Veterinarians have important services to render for control and eradication of diseases of animals, for prevention of transmission to the human population as well as for animal husbandry and agricultural needs.

The improvement of environmental sanitation requires a well trained engineer. Engineers are needed for the construction of water supplies and sewage systems. Sanitary engineers are essential members of the health team for promotion of environmental sanitation for the population. Although data were provided for some of the countries and several other areas they did not appear to be complete enough for inclusion in the table. Probably there is no central registry from which such information could be obtained nor are there standards such as with the medical profession which would be used in designating those technically qualified as sanitary engineers. In the United States the number of sanitary engineers was estimated to be 5,000, or 0.30 per 10,000 population. In other countries and areas of the Americas there is a great need for sanitary engineers both for public works and for health programs. Thus the provision of definitions and data regarding sanitary engineers would be valuable for use

TABLE 56. NUMBER OF PHYSICIANS, DENTISTS, AND VETERINARIANS  
WITH RATES PER 10,000 POPULATION IN THE AMERICAS, 1957

Area	Physicians		Dentists		Veterinarians	
	Number	Rate	Number	Rate	Number	Rate
Argentina .....	25,500	12.8	10,083	5.1	...	...
Bolivia .....	850	2.6	361	1.1	30	0.09
Brazil (a) .....	23,195	4.1	15,532	2.7	1,075	0.19
Canada .....	b) 17,400	10.5	5,481	3.3	b) 325	0.20
Colombia .....	4,500	3.4	1,500	1.1	300	0.23
Costa Rica .....	379	3.7	113	1.1	16	0.15
Cuba .....	6,421	10.0	2,100	3.3	700	1.09
Dominican Republic .....	411	1.5	16	0.1	3	0.01
Ecuador .....	1,325	3.4	351	0.9	32	0.08
El Salvador .....	325	1.4	117	0.5	12	0.05
Guatemala .....	542	1.6	130	0.4	...	...
Honduras .....	365	2.1	63	0.4	2	0.01
Mexico .....	18,058	5.7	1,601	0.5	491	0.16
Nicaragua .....	464	3.5	73	0.5	26	0.20
Panama .....	c) 286	3.1	80	0.9	17	0.19
Paraguay .....	857	5.2	271	1.7	27	0.16
Peru .....	3,286	3.7	969	1.1	157	0.18
United States (b, c) .....	218,000	13.0	89,000	5.3	18,000	1.08
Uruguay .....	3,116	11.6	1,650	6.1	191	0.71
Venezuela .....	3,689	6.2	632	1.1	170	0.29
Bahama Islands .....	33	2.7	7	0.6	2	0.17
Barbados .....	63	2.7	12	0.5	8	0.35
Bermuda .....	31	7.3	18	4.2	4	0.94
British Guiana .....	122	2.5	31	0.6	10	0.20
British Honduras .....	21	2.5	7	0.8	1	0.12
Canal Zone .....	129	35.2	42	11.5	10	2.73
French Guiana .....	24	8.3	4	1.4	1	0.34
Guadeloupe .....	89	3.6	35	1.4	2	0.08
Hawaii .....	548	10.0	397	7.2	28	0.51
Jamaica .....	412	2.6	94	0.6	...	...
Leeward Islands						
Antigua .....	12	2.2	2	0.4	1	0.18
St. Kitts-Nevis-Anguilla .....	11	2.0	2	0.4	-	-
Virgin Islands .....	1	1.3	-	-	-	-
Martinique .....	92	3.6	45	1.8	2	0.08
Netherlands Antilles .....	126	6.6	33	1.7	2	0.11
Puerto Rico .....	b) 1,612	7.1	b) 325	1.4	b) 61	0.27
Trinidad and Tobago .....	235	3.1	85	1.1	14	0.18
Virgin Islands (USA) .....	22	9.2	7	2.9	2	0.83
Windward Islands						
Dominica .....	7	1.1	2	0.3	1	0.16
Grenada .....	18	1.9	5	0.5	1	0.11
St. Lucia .....	11	1.2	2	0.2	2	0.22
St. Vincent .....	10	1.3	1	0.1	1	0.13

(a) 1954.

(b) Estimate.

(c) 1956.

by those concerned with the improvement of environmental conditions.

Table 57 provides similar data for graduate nurses and graduate midwives and the auxiliary personnel in these fields. In a few countries the graduate nurses and midwives and auxiliary personnel were combined. Considering only the 20 countries for which information is available, Canada and the United States have 27 and 26 graduate nurses respectively per 10,000 population which is between two and three times the number of physicians. In the other countries the ratios of graduate nurses to population were smaller and usually the numbers of graduate nurses were much smaller than the numbers of physicians. In the United States and Canada the estimated numbers of auxiliary nursing personnel were approximately as great as the numbers of graduate nurses while in other countries the numbers of auxiliary personnel were usually much greater and made up for some of the deficiency in graduate nurses. In several countries graduate midwives and also auxiliary midwives are used for deliveries.

Although the data in Tables 56 and 57 are probably incomplete their usefulness is such as to justify the efforts of the countries to improve and expand them. They indicate that to provide adequate health services, many more of these medical and health workers are needed and that adequate training facilities must be developed.

#### PERSONNEL EMPLOYED IN HEALTH SERVICES

Data regarding the personnel employed in health services, provided in Tables 58, 59 and 60, are essential in showing the existing situation and for planning for the extension of education and training programs to provide such personnel to meet the needs in health programs. A great improvement is noted in the quality of the data provided here and thus they are not comparable with those in the previous Four-Year Report.

The numbers of physicians employed in health services are given in Table 58 with the numbers employed on a full-time and on a part-time basis. Full-time is used in this report for personnel devoting their working time wholly to the positions in the health service with exclusion of private and other professional practice. In the 18 countries providing information regarding physicians employed full time and part time, only one-third, 7,130, were employed on full-time basis and of these over half were in the United States. In Canada and Venezuela almost one-half were employed on a full-time basis. In many countries all or nearly all physicians in health services were employed on a part-time basis. In the 23 other areas of the Americas providing data 1,139 of the 1,391 physicians employed in health services worked on a full-time basis. The importance of the establishment of a professional public health career for physicians with full-time employment is one of the principles considered in the Program of Work<sup>(a)</sup> for 1957-1960.

The numbers of physicians employed in health services have been related to total physicians (Table 56). These data show that in many countries and other areas of the Americas a high proportion of the physicians are employed in health services. For example in Venezuela 57.4 per cent of the physicians in the country were employed in health services. The percentages varied widely; the high percentages indicated that the development of health services required the employment of a high proportion of the physicians available in the country. Likewise in many of these countries and other areas, the health services are responsible for a high proportion of the services rendered by physicians. The kinds of services being rendered as well as the present and future availability of physicians for such services are both important factors to consider in health planning.

Table 59 provides data regarding all graduate nurses employed in health services and the numbers in relation to the total graduate nurses. In addition the numbers of these graduate nurses who were also public

(a) Proceedings of the VIII Meeting of the Directing Council of the Pan American Sanitary Organization and VII Meeting of the Regional Committee of the World Health Organization for the Americas, CD8/12.

TABLE 57. NUMBER OF GRADUATE NURSES AND MIDWIVES AND AUXILIARY NURSING PERSONNEL AND MIDWIVES WITH RATES PER 10,000 POPULATION IN THE AMERICAS, 1957

Area	Graduate Nurses		Graduate Midwives		Auxiliary Nursing Personnel		Auxiliary Midwives	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina .....	10,273	5.2	3,560	1.8	16,527	8.3	2,038	1.0
Bolivia .....	198	0.6	65	0.2	250	0.8	-	-
Brazil (a) .....	b)16,563	2.9	...	...	21,858	3.8	...	...
Canada .....	c)44,750	27.0	d) -	-	c)42,000	25.4	-	-
Colombia .....	e) 430	0.3	-	-	5,800	4.4	300	0.2
Costa Rica .....	618	6.0	549	5.3	...	...	...	...
Cuba .....	2,876	4.5	1,885	2.9	-	-	-	-
Dominican Republic .....	146	0.5	52	0.2	460	1.7	-	-
Ecuador .....	194	0.5	183	0.5	...	...	-	-
El Salvador .....	401	1.7	-	-	1,183	5.0	-	-
Guatemala .....	543	1.6	...	...	...	...	...	...
Honduras .....	103	0.6	7	0.0	417	2.4	-	-
Mexico .....	2,247	0.7	2,071	0.7	...	...	...	...
Nicaragua .....	225	1.7	15	0.1	182	1.4	...	...
Panama .....	528	5.8	199	2.2	641	7.0	29	0.3
Paraguay .....	88	0.5	358	2.2	579	3.5	-	-
Peru .....	...	...	...	...	f)2,389	2.7	f)1,145	1.3
United States (g).....	430,000	25.7	500	0.0	400,000	23.9	9,000	0.5
Uruguay .....	420	1.6	834	3.1	...	...	...	...
Venezuela .....	2,027	3.4	-	-	5,020	8.5	990	1.7
Bahama Islands .....	75	6.2	50	4.2	15	1.2	12	1.0
Bermuda .....	110	25.9	13	3.1	4	0.9	7	1.7
British Guiana .....	787	15.9	694	14.0	...	...	-	-
British Honduras .....	80	9.6	34	4.1	30	3.6	60	7.2
Canal Zone .....	239	65.2	-	-	-	-	-	-
French Guiana .....	54	18.6	8	2.8	50	17.2	...	...
Guadeloupe .....	31	1.2	18	0.7	93	3.7	48	1.9
Hawaii .....	1,861	33.8	...	...	1,585	28.8	f) 10	0.2
Jamaica .....	1,945	12.2	1,034	6.5	...	...	...	...
Leeward Islands								
Antigua .....	29	5.3	9	1.6	48	8.8	20	3.6
St. Kitts-Nevis-Anguilla .....	27	5.0	17	3.1	49	9.1	3	0.6
Virgin Islands .....	3	3.9	-	-	9	11.6	-	-
Martinique .....	87	3.4	17	0.7	48	1.9	33	1.3
Netherlands Antilles .....	172	9.1	29	1.5	c) 400	21.1	-	-
Puerto Rico .....	1,912	8.4	23	0.1	1,823	8.0	1,072	4.7
Trinidad and Tobago .....	1,039	13.6	982	12.8	462	6.0	-	-
Virgin Islands (USA).....	70	29.2	21	8.8	90	37.5	-	-
Windward Islands								
Dominica .....	47	7.6	32	5.2	13	2.1	-	-
Grenada .....	75	8.0	46	4.9	48	5.1	-	-
St. Lucia .....	27	3.0	17	1.9	42	4.6	-	-
St. Vincent .....	74	9.3	96	12.0	32	4.0	-	-

(a) 1954.

(b) Graduate nurses and non-graduate nurses who have worked 10 years or more.

(c) Estimate.

(d) Some nurses have obstetrical training.

(e) Including 30 "public health and obstetrical" nurses.

(f) Graduate and non-graduate personnel.

(g) 1956; approximate figures.

TABLE 58. NUMBER OF PHYSICIANS EMPLOYED IN HEALTH SERVICES WITH PERCENTAGE OF ALL PHYSICIANS, AND THOSE EMPLOYED FULL TIME AND PART TIME IN HEALTH SERVICES IN THE AMERICAS, 1957

Area	Physicians Employed in Health Services	Per Cent of All Physicians	Physicians Employed in Health Services		Area	Physicians Employed in Health Services	Per Cent of All Physicians	Physicians Employed in Health Services	
			Full Time	Part Time				Full Time	Part Time
Argentina (a) .....	7,660	30.0	-	7,660	Alaska .....	53	...	52	1
Bolivia .....	387	45.5	8	379	Bahama Islands .....	19	57.6	17	2
Brazil (b) .....	3,725	16.1	...	...	Barbados .....	48	76.2	30	18
Canada (c) .....	1,912	11.0	843	1,069	Bermuda .....	7	22.6	7	-
Chile (d) .....	...	...	173	...	British Guiana .....	89	73.0	89	-
Colombia .....	1,068	23.7	33	1,035	British Honduras .....	13	61.9	13	-
Costa Rica (d) .....	...	...	101	...	Canal Zone .....	100	77.5	96	4
Cuba .....	1,458	22.7	-	1,458	French Guiana .....	18	75.0	17	1
Dominican Republic ..	49	11.9	49	-	Guadeloupe .....	10	11.2	8	2
Ecuador .....	94	7.1	-	94	Hawaii .....	17	3.1	14	3
El Salvador .....	111	34.2	29	82	Jamaica .....	176	42.7	166	10
Guatemala (e) .....	44	8.1	19	25	Leeward Islands				
Haiti .....	120	...	-	120	Antigua .....	12	100.0	5	7
Honduras .....	175	47.9	4	171	St. Kitts-Nevis-				
Mexico .....	2,223	12.3	1,511	712	Anguilla .....	11	100.0	3	8
Nicaragua .....	23	5.0	1	22	Virgin Islands .....	1	100.0	-	1
Panama .....	202	70.6	2	200	Martinique .....	26	28.3	8	18
Paraguay .....	223	26.0	65	158	Netherlands Antilles ..	37	29.4	17	20
United States .....	3,624	1.7	3,624	-	Puerto Rico .....	546	33.9	393	153
Uruguay .....	1,123	36.0	19	1,104	Trinidad and Tobago ..	147	62.6	147	-
Venezuela .....	2,118	57.4	923	1,195	Virgin Islands (USA) ..	21	95.5	17	4
					Windward Islands				
					Dominica .....	7	100.0	7	-
					Grenada .....	13	72.2	13	-
					St. Lucia .....	10	91.0	10	-
					St. Vincent .....	10	100.0	10	-

- (a) Personnel of Provincial and Federal Capital health services only.
- (b) Year 1954.
- (c) Personnel of Federal health services only.
- (d) The total number of part-time positions was given: Chile, 4983; Costa Rica, 322.
- (e) National Bureau of Health and Departmental Health Units only.

TABLE 59. NUMBER OF GRADUATE NURSES EMPLOYED IN HEALTH SERVICES WITH PERCENTAGE OF ALL GRADUATE NURSES, AND NUMBERS OF PUBLIC HEALTH AND OTHER GRADUATE NURSES EMPLOYED FULL TIME AND PART TIME IN HEALTH SERVICES IN THE AMERICAS, 1957

Area	Graduate Nurses Employed in Health Services	Per Cent of All Graduate Nurses	Public Health Nurses Employed in Health Services		Other Graduate Nurses Employed in Health Services	
			Full Time	Part Time	Full Time	Part Time
Bolivia.....	225	a) ...	31	1	184	9
Brazil (b).....	1,422	...	...	...	...	...
Canada (c).....	2,747	6.1	170	-	2,574	3
Chile.....	1,069	...	1,069	-	-	-
Colombia.....	25	5.8	16	-	9	-
Costa Rica (d).....	345	55.8	93	3	193	56
Cuba.....	1,005	34.9	-	9	-	996
Dominican Republic.....	...	...	20	-	...	...
Ecuador.....	75	38.7	72	3	-	-
El Salvador.....	144	35.9	144	-	-	-
Guatemala (e).....	33	6.1	-	-	33	-
Haiti.....	244	...	-	28	-	216
Honduras.....	69	67.0	5	-	64	-
Mexico.....	3,782	a) ...	2,577	-	1,205	-
Nicaragua.....	106	47.1	1	105	-	-
Panama.....	432	81.8	-	96	-	336
Paraguay.....	34	38.6	2	-	32	-
United States.....	16,770	3.9	14,016	-	2,754	-
Uruguay.....	335	79.8	1	22	-	312
Venezuela.....	892	44.0	f) 220	-	f) 665	7
Alaska.....	246	...	49	-	196	1
Bahama Islands.....	40	53.3	10	-	30	-
Barbados.....	...	...	17	-	...	...
Bermuda.....	101	91.8	9	-	92	-
British Guiana.....	517	65.7	63	-	454	-
British Honduras.....	83	...	8	-	75	-
Canal Zone.....	219	91.6	4	8	207	-
French Guiana.....	54	100.0	24	-	30	-
Guadeloupe.....	2	6.5	2	-	-	-
Hawaii.....	94	5.1	92	-	2	-
Jamaica.....	1,003	51.6	103	-	900	-
Leeward Islands						
Antigua.....	33	a) ...	9	-	24	-
St. Kitts-Nevis-Anguilla...	52	a) ...	25	-	27	-
Virgin Islands.....	-	-	-	-	-	-
Martinique.....	14	16.1	6	-	8	-
Netherlands Antilles.....	14	8.1	8	2	4	-
Puerto Rico.....	1,065	55.7	327	-	738	-
Trinidad and Tobago.....	1,130	a) ...	91	-	1,039	-
Virgin Islands (USA).....	65	92.9	14	-	51	-
Windward Islands						
Dominica.....	52	a) ...	5	-	47	-
Grenada.....	77	a) ...	4	-	73	-
St. Lucia.....	45	a) ...	18	-	27	-
St. Vincent.....	59	79.7	21	1	37	-

(a) Total of "public health nurses" and "other graduate nurses" exceeds number of graduate nurses in area (Table 55).

(b) Year 1954.

(c) Personnel of Federal health services only.

(d) Including all part-time positions.

(e) National Bureau of Health and Departmental Health Units only.

(f) Graduate nurses in preventive services 220, and graduate nurses in hospital services 665 full time and 7 part time.

health nurses are given in this table. As with physicians the proportion of graduate nurses employed in health services was high in many countries and other areas. For example, in Venezuela of the total graduate nurses 44.0 per cent were employed in health services. Of the 892 graduate nurses employed 220 or approximately one-fourth were also public health nurses. While nearly all countries employed physicians on a part-time basis, only 278 public health nurses were employed on a part-time basis in the countries and other areas for which information was available. These data regarding public health and other graduate nurses as well as auxiliary personnel serve to show the existing situation and can be considered in relation to the needs for these health workers as health services are extended.

In many countries of the Americas health personnel serve on a part-time basis in health services. This is more common in certain professions such as the medical and dental professions than in others. Table 60 provides data regarding the personnel employed in health services according to full-time or part-time service excluding physicians and graduate nurses which are given in Tables 58 and 59. In 14 countries and 18 other areas veterinarians were employed in health services, usually on a full-time basis. Although the numbers of nutritionists employed in health services were generally small, it is

noteworthy that in 17 countries and 11 other areas nutritionists were employed usually on a full-time basis. Outside of the United States where 1,396 sanitary engineers were employed on a full-time basis, there were only 245 graduate engineers reported to be employed in health services. Because of the great need for promotion of expanded water supplies and sewerage systems as well as other phases of environmental sanitation the services of sanitary engineers are essential in health programs. In addition to the graduate engineer, sanitarians and other sanitation personnel were employed in nearly all countries and other areas of the Americas and in over three-fourths they were employed on a full-time basis.

Nearly all areas reported laboratory personnel employed in health services with many working on a part-time basis. In addition to 471 health educators serving in health programs in the United States there were 116 others working full time and 71 working part time in the Americas. The use of social workers varied markedly for 4 countries employed more than 100, 9 countries or other areas had less than 100 but more than 10 and 14 had less than 10. Evidently the designation of statistician varied considerably as indicated by the numbers reported. Outside of the United States where 564 statisticians were employed in health services and Chile with 629 the number of statisticians reported was 304.

TABLE 60. NUMBER OF FULL-TIME AND PART-TIME PERSONNEL, EXCEPT PHYSICIANS AND GRADUATE NURSES, EMPLOYED IN HEALTH SERVICES IN THE AMERICAS, 1957

Area	Dentists		Veterinarians		Nutritionists		Nursing Auxiliaries		Graduate Midwives		Auxiliary Midwives		Laboratory Personnel		Statisticians	
	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time
Argentina (a) .....	...	744	...	5	...	112	...	...	...	...	...	...	...	751	...	38
Bolivia .....	-	17	-	-	1	-	339	62	32	-	-	-	60	5	1	-
Brazil (b).....	770	...	...	...	...	...	5,127	...	...	...	...	...	...	...	...	...
Canada (c) .....	223	6	223	-	168	-	3,484	-	-	-	-	-	613	-	6	-
Chile .....	9	d)745	39	-	230	-	8,038	-	569	-	-	-	49	312	629	-
Colombia .....	-	277	1	4	4	-	1,617	-	-	-	-	-	48	60	2	-
Costa Rica (d) ....	1	50	-	1	14	-	801	10	13	10	4	1	140	5	8	2
Cuba .....	-	90	-	54	-	14	-	-	8	-	-	-	-	283	-	60
Dominican Republic.	...	...	3	-	8	-	...	...	...	...	-	-	82	-	-	2
Ecuador .....	-	23	-	-	10	-	51	-	6	-	-	-	14	-	23	-
El Salvador .....	16	25	-	-	2	-	154	-	-	-	-	-	39	-	3	-
Guatemala (e) .....	30	-	1	-	-	-	15	-	19	-	72	-	61	-	7	-
Haiti .....	-	52	-	-	-	-	-	211	-	36	-	6	-	55	-	25
Honduras .....	-	5	-	-	1	-	407	10	7	-	-	-	2	27	1	-
Mexico .....	13	83	21	43	2	-	-	-	109	-	-	-	649	15	63	-
Nicaragua .....	-	18	-	-	-	-	-	-	-	-	-	-	1	76	-	1
Panama .....	-	44	-	3	-	1	-	463	-	74	-	29	-	f)42	-	1
Paraguay .....	-	50	1	-	6	-	529	-	127	-	-	-	42	1	5	-
United States .....	694	196	396	-	223	-	c)2,329	-	500	-	...	-	5,160	-	564	-
Uruguay .....	-	118	-	4	-	8	-	2,096	-	108	-	30	2	382	-	11
Venezuela .....	5	139	12	1	26	3	3,099	68	-	-	-	-	428	23	22	-
Alaska .....	14	-	2	2	4	-	263	-	-	-	-	-	48	1	2	-
Bahama Islands ....	-	-	-	-	-	-	-	-	-	12	-	-	-	13	-	-
Barbados .....	-	4	2	-	1	-	...	...	...	...	...	...	9	-	-	-
Bermuda .....	2	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-
British Guiana ....	4	1	10	-	-	-	15	-	262	-	-	-	40	-	-	-
British Honduras ..	-	2	-	-	1	-	24	-	1	-	-	-	4	-	-	-
Canal Zone .....	7	-	4	-	7	-	-	-	-	-	-	-	44	-	-	-
French Guiana .....	-	-	1	-	-	-	50	-	1	-	8	-	19	-	-	-
Guadeloupe .....	-	-	1	-	-	-	52	-	12	-	-	-	7	-	-	-
Hawaii .....	1	-	7	-	3	-	-	-	-	-	-	-	21	-	3	-
Jamaica .....	13	-	-	-	-	-	-	-	24	-	-	230	143	-	-	-
Leeward Islands																
Antigua .....	-	2	1	-	-	-	-	-	9	-	20	-	3	-	-	-
St. Kitts-Nevis-																
Anguilla .....	2	-	3	-	-	-	11	-	17	-	3	-	-	-	-	-
Virgin Islands ..	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
Martinique .....	-	-	-	1	-	-	34	1	1	4	9	3	11	4	-	-
Netherlands Antilles	-	4	2	-	-	-	42	2	2	-	-	-	33	-	-	-
Puerto Rico .....	9	40	1	-	61	-	1,649	-	22	-	5	-	197	1	12	-
Trinidad and Tobago	22	-	7	1	2	-	462	-	982	-	-	-	56	-	-	-
Virgin Is. (USA) ..	2	1	-	-	1	-	88	-	20	-	-	-	13	-	1	-
Windward Islands																
Dominica .....	1	-	1	-	g) 1	-	-	-	32	-	-	-	1	-	4	-
Grenada .....	1	-	1	-	-	-	48	-	46	-	-	-	5	-	1	-
St. Lucia .....	1	-	2	-	1	-	69	-	17	-	-	-	3	-	-	-
St. Vincent .....	1	-	1	-	-	-	32	-	54	-	-	-	4	-	-	-

(a) Provincial health services only.

(b) Year 1954.

(c) Federal health services only.

(d) Including all part-time positions.

(e) National Bureau of Health and Departmental Health Units only.

(f) Excluding those who work in hospital laboratories.

(g) For the Windward Islands.



TABLE 60. NUMBER OF FULL-TIME AND PART-TIME PERSONNEL, EXCEPT PHYSICIANS AND GRADUATE NURSES, EMPLOYED IN HEALTH SERVICES IN THE AMERICAS, 1957 (Continued)

Area	Graduate Engineers		Sanitaricians		Other Sanitation Personnel		Health Educators		Social Workers		Clerical Personnel		Other	
	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time
Argentina (a) .....	...	...	...	...	466	...	...	...	...	...	...	...	2,594	9
Bolivia .....	3	-	32	-	253	-	2	-	12	1	308	-	694	-
Brazil (b) .....	...	...	...	...	h) 2,989	...	...	...	...	...	...	...	...	...
Canada (c) .....	28	-	82	-	12	-	-	-	58	-	1,866	-	7,043	5
Chile .....	44	-	-	-	816	-	27	-	596	-	1,616	-	11,487	-
Colombia .....	14	-	1,167	-	69	-	-	2	-	-	322	-	1,459	-
Costa Rica (d) .....	14	2	249	-	-	-	5	-	45	-	142	-	1,996	-
Cuba .....	-	15	-	...	-i) 2023	-	-	19	-	25	-	...	-i) 2,067	-
Dominican Republic .....	3	-	-	-	35	-	2	-	-	-	175	-	4,674	-
Ecuador .....	-	1	-	-	-	-	4	-	5	-	43	-	208	-
El Salvador .....	3	-	127	-	11	-	12	-	-	-	135	-	308	-
Guatemala (e) .....	4	-	106	-	-	-	-	-	-	-	57	-	79	-
Haiti .....	-	4	-	124	-	94	-	4	-	2	-	-	-	14
Honduras .....	2	-	2	-	-	-	3	1	-	-	27	-	-	-
Mexico .....	35	13	1,173	-	29	-	2	10	275	-	3,363	-	5,712	279
Nicaragua .....	-	-	-	-	-	89	-	24	-	10	-	45	-	470
Panama .....	-	8	-	177	-	324	-	9	-	24	-	74	-	886
Paraguay .....	5	-	17	-	115	-	6	-	22	-	29	242	151	-
United States .....	1,396	-	4,858	-	3,379	-	471	-	430	120	...	-j) 34,366	-	-
Uruguay .....	-	3	-	12	-	71	-	-	-	2	3	1,433	4	4,925
Venezuela .....	68	3	16	-	452	-	11	-	175	2	2,579	37	11,073	67
Alaska .....	9	-	11	-	3	16	4	-	9	-	228	14	81	-
Bahama Islands .....	1	-	2	-	9	8	-	-	-	-	2	-	21	-
Barbados .....	-	-	114	-	-	-	-	-	-	-	36	-	450	-
Bermuda .....	1	-	8	-	8	-	-	-	1	-	16	-	256	-
British Guiana .....	1	-	91	-	6	-	-	-	3	-	157	-	3,384	-
British Honduras .....	-	-	11	-	-	-	1	-	1	-	10	-	60	-
Canal Zone .....	1	-	6	-	88	-	-	-	1	-	132	-	576	33
French Guiana .....	-	-	...	-	i) 23	-	-	-	7	-	46	-	201	-
Guadeloupe .....	-	-	-	-	13	-	-	1	-	-	8	-	-	-
Hawaii .....	6	-	89	-	17	-	5	-	22	-	137	-	154	-
Jamaica .....	1	-	278	-	-	-	4	-	-	-	221	-	1,256	-
Leeward Islands														
Antigua .....	-	-	17	-	2	-	-	-	-	-	9	-	227	-
St. Kitts-Nevis- Anguilla .....	-	-	16	-	-	-	-	-	-	-	6	-	8	-
Virgin Islands .....	-	-	1	-	-	-	-	-	-	-	1	-	-	-
Martinique .....	-	-	15	-	24	-	-	1	-	-	9	-	8	-
Netherlands Antilles ...	-	-	17	-	19	-	-	-	4	-	4	-	39	-
Puerto Rico .....	1	-	32	-	237	-	25	-	57	-	1,216	-	4,071	1
Trinidad and Tobago ....	-	-	112	-	-	-	2	-	7	-	123	-	236	-
Virgin Islands (USA) ...	1	-	-	-	12	-	1	-	2	-	51	-	158	1
Windward Islands														
Dominica .....	-	-	16	4	-	-	-	-	-	-	7	-	-	-
Grenada .....	-	-	16	-	-	-	-	-	1	-	13	-	236	-
St. Lucia .....	-	-	10	-	46	-	-	-	1	-	15	-	98	-
St. Vincent .....	-	-	10	1	60	80	-	-	-	-	7	-	-	-

(a) Provincial health services only.

(b) Year 1954.

(c) Federal health services only.

(d) Including all part-time positions.

(e) National Bureau of Health and Departmental Health Units only.

(h) Reported as "guardas" and work in various types of general and specialized programs (malaria, yellow fever, plague, etc.).

(i) Including sanitarians.

(j) Including clerical personnel.

## CHAPTER VI

### Health Services

In order to provide information regarding health services and the various programs being carried on in the Americas, spaces were provided for budgets according to types of programs at the national, provincial or state and local levels, for changes in the organization and structure of National Health Services, for specific activities in national health planning and for personnel and activities of local health services. The information which is summarized in this chapter provides some background data on the various health programs in the Americas.

#### BUDGETS AND SERVICES

One of the requests for information frequently made of the Bureau is in regard to the cost of health services. Cost depends on many factors including availability and utilization of health services, amount and nature of curative services rendered and their inclusions in health programs. The provision of comparable data in this field is practically impossible. However, the information available helps to describe the existing programs and to plan for the extension of programs. Therefore data are being provided but at the same time a short explanation is given from reports for each country. It is recognized that additional clarification of the data would be necessary to provide comparable information.

In the forms distributed, spaces were provided for the national, provincial or state and local funds budgeted for the following 14 services, namely:

- Communicable diseases
- Tuberculosis control
- Venereal disease control
- Malaria
- Environmental sanitation
- Industrial hygiene
- Vital and health statistics
- Local health services
- Maternal and child health
- Dental health
- Nutrition
- Laboratory services
- Hospitals
- Food and drug services

Also spaces were provided for funds for other specified services and many of those given are described in the comments for the individual countries.

In Table 61 the total budgets are provided for these items with national, provincial or state and local funds combined. Since the purpose of this table is to show the types of programs being carried on by health services with the funds designed for such services, all funds are included in accordance with the presentation in the individual reports. It is realized that in many countries budgets did not provide for this type of division and thus funds are not given separately. There is considerable overlapping of services; for instance, local health services include activities in maternal and child health, environmental sanitation and communicable diseases.

Funds are given in national currency and are converted into U. S. dollars, according to the rates of conversion of the World Health Organization for July 1, 1957. These rates are not necessarily the countries' official rates. In a few countries and other areas totals of the funds for specific items were obtained by addition and it is possible that all funds were not given. Also in a few areas only totals of funds were given. The following explanations by country and other area may be useful in the interpretation of the data in Tables 61 and 62. Some information was provided for 19 of the 22 countries.

Bolivia - The budget provided for Bolivia consisted of 4,346,314,475 bolivianos at the national level, 268,170,420 at the "district" level and 6,921,512,695 at the local level with the source of funds the budgets of the Ministry of Hygiene and Public Health and of the Inter-American Cooperative Public Health Service. Of the total 11,535,997,590 bolivianos, the amount specified for hospitals was 1,544,229,569. Other major items in this budget were food and drug services 3,358,320,000 (local level) and general and emergency costs including construction of hospitals and health centers of 2,773,974,520 bolivianos which was included in the item, other. The budget of the "district" level included 141,361,620 for laboratory services and

TABLE 61. TOTAL BUDGETS FOR HEALTH SERVICES BY ITEMS IN NATIONAL CURRENCY AND U.S. DOLLARS IN THE AMERICAS, 1957

Items	National Currency	U. S. Dollars	National Currency	U. S. Dollars	National Currency	U. S. Dollars
	Bolivia		Colombia		Costa Rica	
TOTAL .....	11,535,997,590	1,460,226	127,161,425	21,193,571	34,564,556	5,197,678
Communicable Diseases .....	241,845,336	30,613	2,911,459	485,243	75,300	11,323
Tuberculosis Control .....	193,803,969	24,532	8,004,197	1,334,033	2,715,698	408,376
Venereal Disease Control .....	179,928,170	22,776	400,000	66,667	340,993	51,277
Malaria .....	20,865,600	2,641	4,100,500	683,417	1,400,000	210,526
Environmental Sanitation .....	269,049,590	34,057	1,045,000	174,167	577,700	83,865
Industrial Hygiene .....	137,492,030	17,404	285,000	47,500	-	-
Vital and Health Statistics .....	50,342,624	6,372	30,000	5,000	54,800	8,241
Local Health Services .....	1,006,370,920	127,389	22,563,653	3,760,609	1,551,150	233,256
Maternal and Child Health .....	616,046,908	77,981	425,635	70,939	283,500	42,632
Dental Health .....	77,842,885	9,854	14,400	2,400	338,600	50,917
Nutrition .....	56,056,634	7,096	430,000	71,667	569,700	85,669
Laboratory Services .....	192,828,420	24,409	...	...	365,600	54,977
Hospitals .....	1,544,229,569	195,472	72,685,446	12,114,241	24,300,815	3,654,258
Food and Drug Services .....	3,358,320,000	425,104	...	...	206,700	31,083
Other .....	3,590,973,925	454,554	14,266,135	2,377,688	1,804,000	271,278
	Cuba		Dominican Republic		El Salvador	
TOTAL .....	21,752,457	21,752,457	4,406,698	4,406,698	5,201,898	2,080,758
Communicable Diseases .....	...	...	40,920	40,920	29,170	11,668
Tuberculosis Control .....	2,134,873	2,134,873	419,832	419,832	170,638	68,272
Venereal Disease Control .....	545,356	545,356	37,932	37,932	(a)	(a)
Malaria .....	3,550	3,550	356,760	356,760	1,190,805	476,322
Environmental Sanitation .....	2,082,630	2,082,630	19,020	19,020	639,800	255,920
Industrial Hygiene .....	...	...	-	-	-	-
Vital and Health Statistics .....	21,800	21,800	-	-	13,200	5,280
Local Health Services .....	1,845,250	1,845,250	464,400	464,400	2,101,660	840,664
Maternal and Child Health .....	59,400	59,400	540,828	540,828	25,102	10,041
Dental Health .....	47,190	47,190	-	-	-	-
Nutrition .....	...	...	-	-	26,501	10,600
Laboratory Services .....	62,670	62,670	79,800	79,800	179,919	47,167
Hospitals .....	3,720,144	3,720,144	1,189,308	1,189,308	-	-
Food and Drug Services .....	82,160	82,160	13,740	13,740	-	-
Other .....	11,141,434	11,141,434	1,244,158	1,244,158	887,061	354,824
	Guatemala		Honduras		Mexico	
TOTAL .....	b) 2,099,695	2,099,695	b)9,536,787	4,771,844	373,522,323	29,881,786
Communicable Diseases .....	21,180	21,180	11,700	5,850	40,446,204	3,235,696
Tuberculosis Control .....	705,655	705,655	208,600	104,300	...	...
Venereal Disease Control .....	30,000	30,000	26,100	13,050	...	...
Malaria .....	480,000	480,000	650,000	325,000	32,000,000	2,560,000
Environmental Sanitation .....	250,000	250,000	120,660	60,330	9,700,000	776,000
Industrial Hygiene .....	-	-	...	...	759,740	60,779
Vital and Health Statistics .....	11,640	11,640	11,700	5,850	...	...
Local Health Services .....	238,200	238,200	360,720	180,360c)	129,927,901	10,394,232
Maternal and Child Health .....	18,960	18,960	27,540	13,770	7,760,404	620,832
Dental Health .....	36,840	36,840	9,300	4,650	...	...
Nutrition .....	69,160	69,160	20,400	10,200	...	...
Laboratory Services .....	59,340	59,340	48,080	24,040	...	...
Hospitals .....	...	...	8,028,187	4,014,094	94,619,855	7,569,588
Food and Drug Services .....	31,680	31,680	13,800	6,900	...	...
Other .....	147,040	147,040	...	...	58,308,219	4,664,658

(a) Included in Communicable Diseases.

(b) Total of funds for specific items.

(c) Total of local services of "Servicios Coordinados" and of "Bienestar Social Rural".

TABLE 61. TOTAL BUDGETS FOR HEALTH SERVICES BY ITEMS IN NATIONAL CURRENCY AND U.S. DOLLARS IN THE AMERICAS, 1957 (Continued)

Items	National Currency	U.S. Dollars	National Currency	U.S. Dollars	National Currency	U.S. Dollars
	Panama		Peru		United States	
TOTAL .....	9,114,187	9,114,187	95,962,603	5,050,663		354,927,412
Communicable Diseases .....	38,900	38,900	4,083,060	214,898		...
Tuberculosis Control .....	159,300	159,300	2,591,400	136,389		28,740,611
Venereal Disease Control .....	(a)	(a)	905,460	47,656		15,200,602
Malaria .....	499,782	499,782	-	-		...
Environmental Sanitation .....	2,209,280	2,209,280	266,520	14,027		...
Industrial Hygiene .....	-	-	3,157,434	166,181		...
Vital and Health Statistics .....	7,900	7,900	312,120	16,427		7,611,218
Local Health Services .....	770,700	770,700	54,380,341	2,862,123		177,187,224
Maternal and Child Health .....	(d)	(d)	2,572,800	135,411		8,805,025
Dental Health .....	(d)	(d)	421,250	22,172		2,289,231
Nutrition .....	12,500	12,500	689,266	36,277		...
Laboratory Services .....	56,180	56,180	4,000,000	210,526		17,606,476
Hospitals .....	4,551,900	4,551,900	14,455,942	760,839		(f)
Food and Drug Services .....	14,040	14,040	e) 2,830,920	148,996		...
Other .....	793,705	793,705	5,296,080	278,741		97,487,025
	Uruguay		Venezuela		Alaska	
TOTAL .....	173,923,735	42,420,423	262,718,774	78,423,514		13,290,489
Communicable Diseases .....	1,433,620	349,663	g) 1,726,360	515,331		822,474
Tuberculosis Control .....	10,748,631	2,621,617	12,666,618	3,781,080		1,639,946
Venereal Disease Control .....	492,100	120,024	451,776	134,859		6,124
Malaria .....	-	-	10,774,608	3,216,301		-
Environmental Sanitation .....	38,536,362	9,399,113	7,381,680	2,203,487		159,188
Industrial Hygiene .....	119,280	29,093	154,436	46,100		-
Vital and Health Statistics .....	135,000	32,927	h) 625,584	186,741		68,576
Local Health Services .....	1,020,120	248,810	65,003,953	19,404,165		i) 402,918
Maternal and Child Health .....	14,051,160	3,427,112	941,616	281,079		115,076
Dental Health .....	1,518,348	370,329	586,608	175,107		...
Nutrition .....	-	-	12,581,674	3,755,724		...
Laboratory Services .....	4,632,706	1,129,928	1,785,016	532,841		22,692
Hospitals .....	33,191,388	8,095,460	66,075,129	19,723,919		8,251,200
Food and Drug Services .....	12,013,500	2,930,122	337,608	100,779		15,000
Other .....	56,031,520	13,666,224	81,626,108	24,366,002		1,787,295
	Bahama Islands		British Guiana		British Honduras	
TOTAL .....	396,500	1,110,333	5,894,176	3,467,162	569,606	398,326
Communicable Diseases .....	10,500	28,003	(d)	(d)	8,600	6,014
Tuberculosis Control .....	3,000	8,401	792,232	466,019	14,820	10,364
Venereal Disease Control .....	6,000	16,802	11,360	6,682	5,200	3,636
Malaria .....	-	-	151,237	88,963	51,546	36,046
Environmental Sanitation .....	11,000	30,804	150,000	88,235	5,250	3,671
Industrial Hygiene .....	-	-	-	-	-	-
Vital and Health Statistics .....	-	-	(d)	(d)	2,172	1,519
Local Health Services .....	-	-	1,285,382	756,107	-	-
Maternal and Child Health .....	4,500	12,602	103,986	61,168	34,996	24,473
Dental Health .....	1,000	2,800	37,031	21,783	4,650	3,252
Nutrition .....	-	-	500	294	18,503	12,939
Laboratory Services .....	10,000	28,003	134,695	79,232	7,970	5,573
Hospitals .....	300,000	840,101	3,089,820	1,817,541	219,349	153,391
Food and Drug Services .....	5,000	14,002	42,920	25,247	146,500	102,448
Other .....	46,000	128,815	95,013	55,890	50,050	35,000

(a) Included in Communicable Diseases.

(d) Included in Local Health Services.

(e) Food Services.

(f) Not included in Total; \$1,589,153,000 in 1955.

(g) Yellow fever and plague.

(h) Includes Epidemiology.

(i) Four regions.

TABLE 61. TOTAL BUDGETS FOR HEALTH SERVICES BY ITEMS IN NATIONAL CURRENCY AND U.S. DOLLARS IN THE AMERICAS, 1957 (Continued)

Items	National Currency	U.S. Dollars	National Currency	U.S. Dollars	National Currency	U.S. Dollars
	French Guiana		Guadeloupe		Hawaii	
TOTAL .....	b) 535,472,786	1,529,922	993,267,000	2,837,906		4,613,101
Communicable Diseases .....	-	-	100,000	286		20,557
Tuberculosis Control .....	10,034,400	28,670	48,455,000	138,443		102,954
Venereal Disease Control .....	7,150,100	20,429	20,076,000	57,360	k) 55,022	-
Malaria .....	55,849,800	159,571	j) 50,000,000	142,857		77,449
Environmental Sanitation .....	-	-	-	-		24,829
Industrial Hygiene .....	-	-	150,000	429		58,200
Vital and Health Statistics .....	-	-	-	-		1,275,580
Local Health Services .....	72,658,000	207,594	-	-		188,401
Maternal and Child Health .....	23,348,100	66,709	25,600,000	73,143		12,756
Dental Health .....	-	-	-	-		7,900
Nutrition .....	-	-	-	-		113,457
Laboratory Services .....	-	-	9,300,000	26,571		991,852
Hospitals .....	357,127,386	1,020,364	795,000,000	2,271,429		10,459
Food and Drug Services .....	-	-	-	-		1,673,685
Other .....	9,305,000	26,586	44,586,000	127,389		
	Leeward Islands: St. Kitts-Nevis-Anguilla		Puerto Rico		Trinidad and Tobago	
TOTAL .....	877,989	516,464		25,931,028	12,540,499	7,376,764
Communicable Diseases .....	4,000	2,353		52,292	3,000	1,765
Tuberculosis Control .....	-	-		3,196,929	661,460	389,094
Venereal Disease Control .....	-	-		110,811	502,885	295,815
Malaria .....	-	-		318,620	743,664	437,449
Environmental Sanitation .....	20,000	11,765		267,314	(d)	(d)
Industrial Hygiene .....	-	-		10,720	-	-
Vital and Health Statistics .....	4,936	2,904		338,545	-	-
Local Health Services .....	308,328	181,369		12,099,098	1,218,409	716,711
Maternal and Child Health .....	(d)	(d)		472,451	323,085	190,050
Dental Health .....	4,960	2,918		186,153	108,686	63,933
Nutrition .....	-	-		82,338	22,682	13,342
Laboratory Services .....	1,200	706		360,578	163,627	96,251
Hospitals .....	490,738	288,669		5,872,085	2,868,343	1,687,261
Food and Drug Services .....	17,160	10,094		...	49,906	29,356
Other .....	26,667	15,686		2,563,094	5,874,752	3,455,736
	Virgin Islands (U.S.A.)		Windward Islands: Grenada		Windward Islands: St. Lucia	
TOTAL .....		1,314,648	b) 635,540	373,847	b) 320,954	188,796
Communicable Diseases .....		-	2,504	1,473	-	-
Tuberculosis Control .....		16,600	11,490	6,759	4,032	2,372
Venereal Disease Control .....		7,550	15,688	9,228	5,000	2,941
Malaria .....		-	4,820	2,835	49,648	29,205
Environmental Sanitation .....		54,854	2,000	1,176	43,957	25,857
Industrial Hygiene .....		-	24,198	14,234	-	-
Vital and Health Statistics .....		15,818	4,708	2,769	-	-
Local Health Services .....		-	28,426	16,721	9,218	5,422
Maternal and Child Health .....		57,008	3,018	1,775	(d)	(d)
Dental Health .....		32,318	6,216	3,656	7,460	4,388
Nutrition .....		16,156	5,208	3,064	1,200	706
Laboratory Services .....		49,669	7,882	4,636	7,296	4,292
Hospitals .....		909,978	303,602	178,589	103,946	61,145
Food and Drug Services .....		-	215,780	126,929	25,000	14,706
Other .....		154,697	...	...	64,197	37,762

(b) Total of funds for specific items.

(d) Included in Local Health Services.

(j) Including *Aedes aegypti* control.

(k) Including geriatrics, cancer and heart disease control.

126,808,200 for general expenses. Of the total budget, a major proportion was provided for expenditures for hospitals through direct expenditures, construction and food and drugs.

Brazil - The budget of the Ministry of Health in 1957 was 4,570,647,050 cruzeiros. The distribution of these funds to federal health agencies was as follows:

	Cruzeiros	U.S. Dollars
Statistical Services	6,560,200	89,866
Department of Administration (General Services)	929,748,100	12,736,275
National Cancer Service	220,660,100	3,022,741
National Mental Disease Service	420,838,500	5,764,911
National Service for Health Education	11,154,700	152,804
National Service for the Regulation of Medicine	28,940,900	396,451
National Leprosy Service	191,702,700	2,626,064
National Tuberculosis Service	460,761,700	6,311,804
Port Health Service	41,136,100	563,508
National Department of Health-Health Units	14,985,700	205,284
National Children's Department - Children's Units	28,888,700	395,736
National Department of Rural Endemics	1,190,713,600	16,311,145

The budgets were not available for state and local health services and thus information for Brazil is only partial.

Colombia - A budget was provided of 48,293,029 pesos for the Ministry of Public Health to which was added 2,133,500 from the Inter-American Cooperative Health Service and 4,500,000 from taxation on gambling. The funds of 17,037,509 from provinces and local services were for control of tuberculosis, local health services and hospitals and were reported to be the only funds known. The total for hospitals included 53,247,929 from other sources. The budget for other expenses includes 8,040,709 for leprosy, 700,000 for training, 924,972 for cancer, 1,521,596 for orphanages and homes for the aged, blind and deaf-mutes, as well as for administrative services.

Costa Rica - The budget provided was 34,564,556 colons for all the republic and 70.3 per cent of the funds were for hospitals. The funds included under "other" were for nurses, social workers, health education, mental hygiene, pharmacy, sanitary engineering, leprosy and legal office.

Cuba - Of the total budget given of 21,752,457 pesos only half of the funds were distributed in the 14 specific services; the remainder of over 11 million pesos has been placed under other services. Because of lack of data certain national institutions and offices have been excluded.

Dominican Republic - The budget of 4,406,698 pesos provided 1,189,308 for hospitals which included 41 hospitals operated by the Ministry of Public Health.

Ecuador - The national funds (25,896,324 sucres) given for Ecuador provided for the following services:

	Sucres	U. S. Dollars
Malaria	4,966,000	281,360
Local health services	450,000	25,496
Maternal and child health	557,000	31,558
Nutrition	100,000	5,666
Leprosy	104,400	5,915
National Anti-Plague Service	1,900,000	107,649
National Yellow Fever Service	145,000	8,215
National Yaws Campaign	200,000	11,331

Since the distribution of the remaining funds was not known, data for Ecuador are not given in Table 61.

El Salvador - The budget of 5,201,898 colons included funds for education and training and for administration in addition to funds for 9 of the services listed. No funds were given for hospitals.

Guatemala - The funds given included 1,998,895 quetzals of national funds and 80,800 of local funds. According to the explanation given, the budget for each one of the specific items provided principally for salaries paid

personnel except control of tuberculosis, venereal diseases, environmental sanitation, nutrition and yellow fever for which the allotment includes everything. The funds for purchase of equipment, medicines and supplies constituted specific funds managed by the general office of procurement of the health service. Not included are salaries for dentists and laboratory workers of health units which constitute the laboratory services of the departments. Funds included in "other" are 90,000 for yellow fever, 10,000 for typhus, 12,040 for rabies, 15,000 for onchocercosis, and 20,000 for the campaign against leishmaniasis and trypanosomiasis.

Haiti - A total budget was not given although the budget for 8 different services was provided and these funds are given below:

	<u>Gourdes</u>	<u>U.S. Dollars</u>
Tuberculosis control	22,665	4,533
Venereal disease control	4,400	880
Malaria	302,581	60,516
Environmental sanitation	137,727	27,545
Laboratory services	7,200	1,440
Hospital	77,800	15,560
Food and drug services	3,700	740
Health centers	17,727	3,545

Honduras - The total of funds given was obtained by addition of funds for individual items and may not be complete.

Mexico - The total budget for federal, state and local health services was 373,522,323 pesos of which 75,659,725 was for hospitals in general and medical assistance, 5,651,680 for the same in the Federal District and 13,308,450 for hospitals of the National Bureau of Coordinated Services. The funds included for the item Local Health Services are the total of funds for individual local services provided in the report by "Servicios Coordinados" and those of "Bienestar Social Rural."

In the explanation of the budget, it was stated that in referring to the control of communicable diseases and to maternal and child health, all the Centers of the Ministry of Public Health and Welfare, even the small and not specified, include in their programs activities of this type without having a special budget.

Nicaragua - The following funds for specific items of the budget were given.

	<u>Cordobas</u>	<u>U.S. Dollars</u>
Epidemiology and vital statistics	82,120	11,731
Tuberculosis control	380,100	54,300
Venereal disease control	114,200	16,314
Malaria eradication and anti-aegypti program	1,241,900	177,414
Environmental sanitation	1,184,450	169,207
Maternal and child health	393,840	56,263
Dental health	49,200	7,029
Nutrition	370,500	52,929
Laboratory services	661,460	94,494
Ambulatory physicians	108,000	15,429

The source of funds for dental hygiene, for ambulatory physicians and 296,600 for laboratory services was departmental.

Panama - National funds of 1,447,367 balboas and provincial funds of 7,666,820 were provided for health services of which nearly half were for hospitals. In addition to the budget of the health services, 14,848,832 balboas were provided for water works with charge to government loans.

Paraguay - The total funds, 161,925,608 guaranis include the sum designated in the General Budget of the country as well as those originating from the resources of the Ministry. The distribution by services was not available. The contribution of Social Security for preventive medicine included in the total was 18,909,000 guaranis.

Peru - The funds for "other" included 152,760 soles for mental hygiene, 2,015,700 for school

health, 611,880 for leprosy and 2,515,740 for pharmaceutical services.

United States - The identifiable expenditures for national, state and local health services for the fiscal year 1956 were as follows: \$51,404,305 national, 168,779,023 state, and 134,744,034 local. The funds for several items were not specified because the budgets did not provide data in this way and are included in "other." The expenditures for the construction program for hospitals and health centers were \$836,769,000 national and 752,384,000 state in 1955 and these funds were not included in the expenditures for health services. Funds for the research activities carried on by the National Institutes of Health were not included.

Uruguay - Estimated expenditures were provided of 173,923,735 pesos of which 33,191,388 were for hospitals. The funds for "other" included 751,277 for rural polyclinics and 3,897,959 for training of personnel, as well as various other costs. Also, 41,561,564 pesos were for other salaries and public health expenses.

Venezuela - For health services the Ministry of Health and Social Welfare in 1956 provided 184,118,768 bolivars, the States, 50,693,565 and the "municipios" 27,906,716. Funds from the "municipios" were for hospitals as were funds of 10,935,725 from the States and 27,232,188 from the Ministry. Other expenses include 15,059,351 for leprosy, cancer, mental health and health education, and 66,566,757 for administration, personnel, and supplies. In addition to these funds the Ministry of Defense provided 5,554,728 bolivars for military health and the Ministry of Public Works 48,783,414 for construction of buildings for the Ministry of Health and Social Welfare, 50,000,000 bolivars for water supplies and sewers and 2,000,000 for medical services, and the Ministry of Labor 31,074,029 for medical services of social security. The services of maternal and child health are complemented in their social aspects by the Venezuelan Children's Council, under the Ministry of Health and Social Welfare with a budget of 12,635,030 bolivars.

Alaska - The total funds reported were 13,290,489 dollars which included 8,251,200 for construction and improvement of hospitals. Alaska administers its health department in four regions and the budget for

these regions was 402,918. "Other" expenses included 1,142,422 for public health nursing and medical care including dental health and nutrition.

Bahama Islands - Of the 396,500 pounds reported for the Bahamas 300,000 were for hospitals.

Barbados - The total budget including curative services was 2,427,728 B.W.I. dollars. However, the total for health centers only was 184,454.

Bermuda - The funds of 255,000 pounds (U.S. \$714,086) included 225,000 for laboratory services and hospitals. The following items were also reported: 5,000 for communicable disease control, including tuberculosis and venereal diseases; 25,000 for local health services, maternal and child health, dental health and nutrition.

British Guiana - The total national funds were 5,539,793 B.G. dollars of which 3,089,820 were for hospitals. In addition there were 354,383 B.G. dollars provided at the municipal level. Data on other local funds were stated not to be available and thus it is possible that the amounts given are not complete.

Canal Zone - The total funds were U. S. \$6,163,900 of which 5,683,000 were designated for hospitals and \$480,900 for various other activities.

French Guiana - In addition to 178,345,400 francs provided for health services, 357,127,386 francs were designated for hospitals. Included under "other" were 7,305,000 francs for the anti-leprosy campaign, 500,000 for mental hygiene and 1,500,000 for vaccination.

Guadeloupe - Funds totalling 105,126,520 francs were reported at the national level and 888,140,480 at the provincial level. However of the latter 795,000,000 were for hospitals. "Other" funds include 19,186,000 for the anti-leprosy campaign, 10,000,000 for disinfection and deratization and 5,300,000 for vaccination.

Hawaii - The total budget of U. S. \$4,613,101 includes 991,852 for hospitals of which 956,434 were reported to be for curative services. "Other" funds include 1,156,807 for leprosy (curative services).



Jamaica - The total budget of 2,474,800 pounds was not designated by services and thus funds for hospitals may be included. However, 110,300 pounds were designated for malaria and 4,370 for nutrition.

Leeward Islands:

Antigua - The total budget was 970,855 B.W.I. dollars of which 496,824 were for hospitals.

Martinique - The budget had two parts, that of the French Government, 97,141,360 francs, and that of the Department and other agencies of 16,697,640. These sums were the totals of funds for specific items, as follows:

	Francs	U.S. Dollars
Communicable diseases	2,835,000	8,100
Tuberculosis control	18,724,000	53,497
Venereal disease control	9,521,000	27,203
Environmental sanitation	33,140,000	94,686
Maternal and child health	41,075,000	117,357
Laboratory services	4,000,000	11,429
Mental health	1,444,000	4,126
Leprosy	3,000,000	8,571

Netherlands Antilles - The total of the funds given for specific items for the Netherlands Antilles was 1,368,900 guilders for Curaçao and Aruba. However, for certain services data were not available for Aruba.

Puerto Rico - The municipal governments contributed \$6,929,376 to the budget which was for medical care and was included in the funds for local health services. Funds for specific items included under "other" were:

Bureau of Nursing	100,870
Heart Disease	37,524
Pathology and Medical Education	41,340
Hospital Survey and Construction	71,000
Health Education	53,372
Crippled Children	585,267
Cancer Control	145,744
Mental Hygiene	104,173
Training	40,772
Regionalization of Health and Welfare Services (a)	155,350

(a) \$93,381 donated by Rockefeller Foundation

Trinidad and Tobago - The total funds include 1,218,409 B.W.I. dollars from county councils for environmental sanitation in local health services. Under "other" were included

hookworm control, equipment, personal emoluments and miscellaneous.

Virgin Islands (U.S.A.) - Insular and local funds are combined in a budget of \$1,314,648. The budget includes curative services and social security contributions. "Other" specific items were 37,500 for mental health and 19,856 for health education.

Windward Islands:

Dominica - The funds stated for 7 items were 98,535 B.W.I. dollars with 41,411 for Colonial Development and Welfare schemes.

	B.W.I. Dollars	U. S. Dollars
Yaws control	15,576	9,162
Malaria	7,484	4,402
Environmental sanitation	33,819	19,894
Maternal and child health	2,540	1,494
Dental health	5,316	3,127
Laboratory services	800	471
Food and drug services	33,000	19,412

St. Lucia - "Other" funds include 6,780 B.W.I. dollars for a leprosarium, 33,526 for a mental hospital and 23,883 for a home for aged and infirm.

St. Vincent - The total funds provided were 518,440 B.W.I. dollars of which 278,312 were for hospitals and a pauper asylum leaving 240,128 for health services. Funds are reported for the eradication of the *Aedes aegypti* and yaws from Colonial Development and Welfare with amounts of 8,370 and 2,670 for 1957. The budget of 152,162 for local health services includes 43,005 for environmental sanitation in addition to the salaries of the Public Health Inspectors.

\* \* \* \* \*

These explanatory remarks show the great variety in the inclusions in the budgets for health services. It is evident that both curative and preventive services are rendered in the programs of many. Local health services in countries such as Colombia, Mexico, Peru, United States and Venezuela are receiving a sizable proportion of the budget. Although activities in communicable diseases are included in local health services, in general the funds designated for communicable diseases, tuberculosis, and venereal diseases were relatively small with a few exceptions. In several areas relatively large

amounts were provided for malaria. Although funds for water works are usually provided from other governmental sources the promotion of environmental sanitation is an important activity of the health service. Funds for health services were small in many countries but there were exceptions such as in Panama where 24.2 per cent of the budget was for environmental sanitation, which is in addition to funds for public works. For vital and health statistics funds also appeared to be limited within the health budget. The data provided show the existing situation and deserve careful consideration in planning the extension of health programs to improve conditions in the Americas.

In an attempt to provide comparable data for health services the total amounts budgeted for health services have been obtained with the funds for hospital services deducted. This seemed advisable because the size of the hospital budgets differed widely and it was evident that the hospital services were of many kinds. In the United States and Puerto Rico, they were essentially for construction of new hospitals and health centers. In the United States the amount for this construction was approximately five times the amount for all health services. It is realized that other expenditures for hospitals are included in

other items in Table 61 such as local health services but from the information available complete separation of funds for health and hospital services was not possible and thus only funds included in the item for hospitals have been excluded. Furthermore, additional funds are provided from sources outside the national health service. Data provided in Table 62 give the per capita budget in U. S. dollars for health services excluding hospitals. The per capita expenditures for health services excluding hospitals varied widely as would be expected because of variations in costs of personnel and supplies as well as the types and sizes of preventive and curative programs being carried on.

Budgets at the national, provincial or state, and local levels were provided in the reports. The data showed that health services are usually rendered from national budgets for only in a few countries were sizable funds obtained from local or provincial and state funds. However, there are exceptions such as in Panama and the United States where more than two-thirds of the funds were from other than national sources. In some countries local communities are assuming increasing financial responsibility for funds which is an important development.

TABLE 62. TOTAL BUDGET FOR HEALTH SERVICES\*, EXCLUDING HOSPITALS, IN NATIONAL CURRENCY AND U.S. DOLLARS AND U.S. DOLLARS PER CAPITA IN THE AMERICAS, 1957

Area	National Currency	U. S. Dollars		Area	National Currency	U. S. Dollars	
		Amount	Per Capita			Amount	Per Capita
Bolivia .....	9,991,768,021	1,264,781	0.39	Barbados (b) .....	2,427,728	1,428,075	6.26
Brazil (a,b) .....	4,570,647,050	62,611,602	1.02	British Guiana .....	2,804,356	1,649,621	3.34
Colombia .....	54,475,979	9,079,330	0.69	British Honduras .....	350,257	244,935	2.92
Costa Rica .....	10,263,741	1,543,422	1.49	Canal Zone .....		480,900	13.12
Cuba .....	18,032,313	18,032,313	2.82	French Guiana (c) .....	178,345,400	509,558	17.04
Dominican Republic .....	3,217,390	3,217,390	1.19	Guadeloupe .....	198,267,000	566,478	2.25
Ecuador (b) .....	25,896,324	1,467,214	0.38	Hawaii .....		3,621,249	6.60
El Salvador .....	5,201,898	2,080,759	0.89	Jamaica (b) .....	2,474,800	6,930,272	4.35
Guatemala (c) .....	2,099,695	2,099,695	0.61	Leeward Islands:			
Honduras (c) .....	1,508,600	754,300	0.43	Antigua .....	474,061	278,859	5.09
Mexico .....	278,902,468	22,312,198	0.71	Br. Virgin Islands (b) .	45,457	26,739	3.48
Panama .....	4,562,287	4,562,287	5.01	St. Kitts-Nevis-			
Paraguay (b) .....	161,925,608	1,513,323	0.92	Anguilla .....	387,251	227,795	4.09
Peru .....	81,506,661	4,289,824	0.49	Martinique (c) .....	113,739,000	324,969	1.25
United States .....		354,927,412	2.08	Puerto Rico .....		20,058,943	8.80
Uruguay .....	140,732,347	34,324,962	12.78	Trinidad and Tobago .....	9,672,156	5,689,504	7.44
Venezuela .....	196,643,645	58,699,595	9.94	Virgin Islands (USA) .....		404,670	16.86
				Windward Islands:			
Alaska .....		5,039,289	24.34	Grenada (c) .....	331,938	195,258	2.08
Bahama Islands .....	96,500	270,232	2.26	St. Lucia (c) .....	152,811	89,889	0.99
				St. Vincent .....	240,128	141,252	1.78

\* Funds for health activities provided by the Ministries of Public Works, Armed Services and others, as well as by private agencies for specific services such as tuberculosis, social security, etc., are not included.

(a) Federal only.

(b) Information was not available regarding funds for hospitals and thus this budget may include such funds.

(c) Total of funds for specific items.

## CHANGES IN ORGANIZATION OF NATIONAL HEALTH SERVICES

During the four-year period there have been important developments in national health services which include changes in organizational structure, creation of full-time career services and increasing activities in national health planning. These developments are in accordance with the resolutions and reports of the Technical Discussions of the Directing Council.<sup>(a,b)</sup> In the previous Four-Year Report<sup>(c)</sup> the subdivisions or agencies responsible for 12 activities in National Health Services were shown. For this report only changes in the organization and structure were requested and the changes reported are given for several countries and other areas. In four countries, Argentina, Colombia, Ecuador and Peru, major changes are reported here, as known to the Bureau from other official sources. The developments in the field of national health planning are covered in a separate section.

Argentina - A decision was taken by the Government in 1956 to reorganize completely the medical and health services. For this purpose, an especially appointed International Commission conducted a survey. Based on the recommendations, major responsibilities for development of health and medical services have been attributed to the provincial governments with an experimental integrated program in the Province of El Chaco. Several full-time positions have been created at the provincial and national levels and many professional workers have received training in public health in other countries.

Brazil - The National Department of Rural Endemics, created by law No. 2743 of 5 March 1956, absorbed the former National Services of Malaria, Plague and Yellow Fever and is also responsible for combatting other endemics. The National Service for the Regulation of Medicine, by law No. 3062 of 22

December 1956 was converted into the National Service for the Regulation of Medicine and Pharmacy and National Service for the Regulation of Dentistry.

Canada - New legislation was adopted in May 1957, under which the Federal Government will share the cost of provincial hospital care and diagnostic services insurance schemes, provided that such schemes would be available to all residents of the province. It is expected that the program will become operative in January 1959. The federal part of the program is administered by the Department of National Health and Welfare.

Chile - In the process of developing and consolidating the National Health Service established in 1953, the following changes were reported: fusion of the four health zones of Santiago into one, creation of the office of Secretary-General, elevation of the Section of Personnel to a Department of Personnel, creation of the Section of Public Relations in the Sub-Department of Health Education, and creation of the office of Administrative Inspectors.

Colombia - A major change took place in Colombia in 1956 when a "Sub-Dirección de Salubridad Nacional" was created and full-time health specialists were put in charge of important positions in the Ministry. Plans for the integration of curative and preventive services both at the central and local levels have been studied by a special commission. The national courses given to several types of health personnel have greatly expanded and improved, with field training offered in model health seminars developed in one department.

Costa Rica - The technical departments have been grouped in three large divisions namely: Division of Preventive Medicine, Division of Maternal and Child Health and Division of Environmental Sanitation. A training center

- (a) Proceedings of the IX Directing Council of the Pan American Sanitary Organization, VIII Meeting of the Regional Committee of the World Health Organization for the Americas, Off. Doc. PASO, No. 18, 1957.
- (b) X Meeting of the Directing Council of the Pan American Sanitary Organization, IX Meeting of the Regional Committee of the World Health Organization for the Americas, Off. Doc. PASO, No. 22, 1958.
- (c) Summary of Reports on the Health Conditions in the Americas, 1950-1953, PASB, Scientific Publications No. 25, 1956.

in the health unit in San José has been organized.

Ecuador - During 1957 complete plans have been developed for the creation of an independent Ministry of Public Health. The maternal and child health centers established during the preceding four-year period were gradually converted into general health services.

El Salvador - During 1956 a new region was added to the area covered by health services bringing the number to seven.

Honduras - A major change was reported in the establishment of model rural health services in April 1955, with the assistance of WHO, with provision for full-time professional personnel.

Mexico - The integration and coordination of different aspects of public health have been planned and developed in various regions of the country. The old malaria control campaign has been transformed into an eradication campaign. A great impulse has been given to specific fields of action such as maternal and child health, medical care, promotion of rural social welfare, health education, environmental sanitation, rehabilitation and specific campaigns against communicable diseases. Particular attention has been given to the training of technical personnel.

Panama - A major development during the period was the creation of positions for technical personnel dedicated exclusively to full-time work. Other changes were centralization of administrative functions in the Office of Administration and Supplies, organization of technical "Direcciones" at central level with a "Dirección" of Programs for Hospitals and a "Dirección" for Preventive Programs, and decentralization of field services, with three regions: east, central and west, with integration of preventive and hospital services in each region.

Paraguay - A major change was a substantial increase in the number of full-time positions for physicians, nurses, engineers, etc. The Ministry of Public Health was reorganized in 1955. According to this organization there is a director of technical planning, development and evaluation of the program which includes three divisions, namely, technical services,

environmental sanitation and general services. Under the executive director there are three divisions, namely, health services of the interior, health services of the capital and social welfare.

Peru - A major organizational change was approved by a supreme decree in June 1957 combining under the General Director of Health the Curative and Preventive Services, and strengthening the health zones and units throughout the country. The same decree established the administrative and financial basis for the public health career.

United States - The only major organizational change was the transfer of the Indian Health Services from the Department of the Interior to the Public Health Service in 1955. Minor organizational changes have been made to reflect emphasis placed on certain activities such as control of air and water pollution and studies in radiological health.

Venezuela - The following services were created: Section of Occupational Health, Venezuelan Institute of Neurology and Cerebral Research, Control of Cardiovascular Diseases, incorporation of the University Hospital of Caracas under the Ministry of Health and Social Welfare.

Alaska - The Mental Health Act passed by the 1957 legislature places responsibility for the care and treatment of Alaska's mentally ill directly upon the Territory.

Barbados - The Government of Barbados and the World Health Organization in 1955 approved a program of development of the Public Health Services of Barbados. Certain proposals included in the program have been started and will continue through 1957-60. It was anticipated that the Public Health Act, 1954, which provides the scope for the operation of the program would be put into operation in 1957. The third health centre at St. Philip was opened in 1957.

Netherlands Antilles - The control on public health remained under the federal government. An Inspectorate of Public Health was created on January 1, 1953, to promote public health in general; to control the administration of legal regulations in the field of public health, so far as said administration is committed to the insular territories; and to administer legal regulations in the field of

public health, so far as said administration - for considerations of efficiency - is not committed to authorities and administrations of the insular governments.

Virgin Islands (U.S.A.) - In July 1955 the organization was changed from two independent local units to an integrated insular unit comprising three divisions: general administration, medical care and special health services.

## NATIONAL HEALTH PLANNING

Various aspects of national health planning have been considered by the Directing Council in establishing program priorities and also in the Technical Discussions<sup>(a, b)</sup> in 1956 and 1957. The subject for these discussions in 1956 was Methods for the Preparation of National Health Plans<sup>(a)</sup> and in 1957, Bases and Methods for the Evaluation of Health Programs.<sup>(b)</sup> Because of this interest of governments in national health planning a question was asked regarding the inclusion of an item in the budget for national health planning and a space was provided for comments regarding progress in this field. Three countries and four other areas stated that there was provision for planning. These are Chile, Colombia, Nicaragua, Bermuda, Br. Guiana, Antigua, and Puerto Rico. In addition, however, many of the reports gave accounts of their planning programs, which are summarized below. Also the establishment of a planning commission is reported in three countries, Argentina, Panama and Peru as known to the Pan American Sanitary Organization through other official sources.

Argentina - A commission was established under the Sub-Secretary of Health which took active part in the reorganization described in the previous section. Full-time personnel including physicians and nurses from various sections of the Ministry were provided to the commission.

Brazil - Planning in the field of public health is carried out in the Ministry of Public Health without a special allotment.

Canada - The Federal budget does not concentrate expenditures for planning of health services in any single item. As with the various health services themselves, health planning in Canada is to a large extent decentralized in the ten provincial departments of health and in the provincial hospital services commissions where such commissions are established in connection with province-wide hospital care insurance schemes. The various divisions and directorates of the Department of National Health and Welfare carry out planning functions as an integral part of their work. Inseparable from any planning function is an adequate statistical service which is performed by the Dominion Bureau of Statistics. Planning is entailed in the consultant activities of the various inter-governmental or semi-governmental advisory bodies concerned with various aspects of the health problem. A central position among these is occupied by the inter-governmental Dominion Council of Health composed of Deputy Ministers of Health of all ten provinces and the federal government.

Chile - National health planning is the responsibility of the "Sub-Dirección Normativa" which is charged with defining the health problems and their priority, to establish the standards and technical procedures for solving them and to advise the local agencies in the planning and development of programs, to evaluate the results of the programs in order to improve the techniques in use, to carry on research of the prevalent problems, to organize the training of professional and auxiliary personnel, and to advise the director of health in all matters relating to international health agencies.

Colombia - An office of planning was created in 1956 which has the responsibility of preparing a project of reorganization of the Ministry of Public Health and this planning is actually in progress.

(a) Proceedings of the IX Directing Council of the Pan American Sanitary Organization, VIII Meeting of the Regional Committee of the World Health Organization for the Americas, Off. Doc. PASO, No. 18, 1957.

(b) X Meeting of the Directing Council of the Pan American Sanitary Organization, IX Meeting of the Regional Committee of the World Health Organization for the Americas, Off. Doc. PASO, No. 22, 1958.

Costa Rica - A special budget is not included for the preparation of future plans of the Ministry, because in this field it is part of the responsibility of the technical chiefs to present budget requests for the following year which are discussed in technical councils.

El Salvador - The activities of planning are the responsibility of the Ministry of Public Health and Social Welfare and its National Health Service.

Haiti - The activity in this field is concentrated in the office of Director General and is the main activity of his staff.

Honduras - A public health planning board was created in 1956 which has as its objective the presentation of a national health plan and the coordination of the activities of the various agencies. The committee includes representatives of the Ministry of Health, Office of the National Director of Health, ICA and PASO/WHO.

Panama - A national planning commission was established several years ago and continued to be active during the entire period; it is composed of chiefs of departments under the Director of Health and has played a major role in the changes described in the previous section. Planning has been particularly successful in securing substantial funds (15 million balboas) for water and sewerage systems.

Paraguay - The normative departments have as one of their functions that of planning. In 1957 plans were produced for an anti-rabies campaign, eradication of smallpox, regionalization of health services and the administrative structure of the Ministry.

Peru - The new structure of the health services in Peru includes an office of "Planning, Coordination and Evaluation" under the Director of Health, composed of the Directors of the major units of the service and the international advisors.

United States - Many units of the Public Health Service are responsible for national planning in their respective fields. These plans result from studies and surveys showing new public health problems and methods to meet the problems. Planning is considered an integral part of each operation and ramifies into all areas of public health activity.

Bermuda - The budget includes an item for national health planning. The main point of attack is control of population. The present density is 2,300 per square mile and there is no hinterland.

Jamaica - Plans are for malaria eradication, venereal disease and tuberculosis programs.

Puerto Rico - Items in the budget for planning are for hospital survey and construction and a project for regionalization of health and welfare services. For the latter project a pilot project in the Bayamon General District Hospital Area is functioning at present. The policy adopted by the Department of Health of the Commonwealth of Puerto Rico is the integration of preventive and curative medical services with public welfare services in this area. The findings and experiences derived from this study will determine the convenience of extending the program to other areas.

Virgin Islands (U.S.A.) - Planning is a function of program directors, the executive assistant and the commissioner of health.

#### LOCAL HEALTH SERVICES

The development of local health services with full-time, well-trained staff is one of the goals in health programs. Many of the countries and other areas provided information regarding local health services, budgets, personnel and activities carried on, which are shown in Tables 63 and 64. The budgets given in Table 63 and those given in Table 61 are not always identical which may indicate that funds designated for other purposes such as maternal and child health were incorporated into budgets of local health services or vice versa.

Table 63 reveals that the proportion of the population with local health services varies widely. In the United States where full-time county and city health departments have been developed principally in the last 40 years, 89 per cent of the population was served by 1396 local health units in 1957. The per capita cost of these services was nearly one dollar (\$0.97). In Venezuela 87.8 per cent of the population was served by 450 local health services (11 health centers, 46 health units, and 393 "medicaturas rurales"). The per capita budget in U. S. dollars was

TABLE 63. POPULATION SERVED, BUDGETS AND PERSONNEL OF LOCAL HEALTH SERVICES  
IN THE AMERICAS, 1957

Area	Political Divisions with Local Health Services*	Popula- tion Served Per Cent **	Budget			Personnel							
			National Currency	Equivalent In U.S.\$	Per Capita U.S.\$	Physicians		Nurses		Sanitation		Other	
						Full-Time	Other	Graduate	Other	Engi- neers	Sani- tar- ians	Techni- cal	Other
Bolivia .....	26	21.7	2,102,707,695	266,166	0.08	a)22	44	38	59	-	15	6	33
Chile .....	b)15	b)100.0	44,846,204,270	33,128,272	4.96	173	c)4,893	1,069	8,038	44	a)816	2,548	13,760
Colombia .....	656	92.8	21,544,817	3,590,803	0.27	-	701	10	1,107	-	1,013	262	476
Costa Rica .....	82	98.0	d) 1,551,150	233,256	0.23	29	95	100	172	9	96	118	211
Cuba .....	126	...	d) 1,845,250	1,845,250	0.29	...	...	...	...	...	...	...	...
Dominican Republic	23	100.0	483,900	483,900	0.18	a)76	a) 6	7	5	3	a)291	2	-
Ecuador .....	18	28.4	...	...	...	a) 4	a) 123	28	a)124	a) 2	a)202	123	706
El Salvador .....	53	57.9	d) 2,101,660	840,664	0.36	29	82	144	154	3	127	49	260
Guatemala .....	26	81.4	659,160	659,160	0.19	a)20	a) 55	a) 52	a) 88	4	95	48	a) 329
Honduras .....	17	26.0	752,501	376,251	0.21	-	48	2	56	2	a) 65	38	4
Mexico .....	535	100.0	114,097,901	9,127,832	0.29	1,543	...	2,851	...	40	1,001	959	3,168
Nicaragua .....	27	17.1	2,831,400	404,486	0.30	...	...	...	...	...	...	...	...
Panama .....	24	41.8	1,937,895	1,937,895	2.13	-	48	89	87	a)12	108	63	-
Paraguay .....	44	57.6	...	...	...	51	158	32	397	-	16	347	262
Peru .....	40	47.3	54,380,341	2,862,123	0.33	105	301	167	534	20	82	269	930
United States (e).	1,396	89.0	162,000,000	162,000,000	0.97	1,488	...	12,900	581	389	4,310	6,297	12,918
Uruguay .....	f) 6	3.4	47,472	11,579	0.00	5	16	22	60	-	10	11	33
Venezuela .....	g) 450	g)87.8	d) 65,003,953	19,404,165	3.16	...	...	...	...	...	...	...	...
Alaska .....	32	47.3	d) 402,198	402,198	1.88	5	-	5	42	6	a) 15	8	27
Barbados .....	3	100.0	184,454	108,502	0.47	3	1	12	-	-	1	-	-
Bermuda .....	1	100.0	166,639	466,645	11.00	3	a) 2	9	2	1	7	-	8
British Honduras .	6	97.4	569,606	244,935	2.93	11	2	81	2	-	10	38	69
Canal Zone .....	1	100.0	6,163,900	6,163,900	...	96	4	211	8	1	6	64	795
French Guiana ....	7	76.5	93,543,193	267,266	9.22	8	-	-	31	-	-	-	-
Guadeloupe .....	1	100.0	993,267,000	2,837,906	11.35	8	26	-	64	-	-	13	-
Hawaii .....	4	98.0	1,235,574	1,235,574	2.25	4	-	87	6	2	85	119	151
Jamaica .....	13	...	...	...	...	1	-	-	230	-	192	-	-
Leeward Islands:													
Antigua .....	1	...	970,885	571,109	10.42	5	7	29	a) 48	-	17	2	-
St. Kitts-Nevis-													
Anguilla .....	1	...	877,989	516,464	9.56	3	8	-	-	-	16	-	-
Virgin Islands .	1	100.0	...	...	...	-	1	a) 3	a) 9	-	1	-	-
Martinique .....	1	100.0	e)118,000,000	337,143	1.32	8	18	14	a) 44	-	15	-	41
Puerto Rico .....	76	97.0	12,099,098	12,099,098	5.31	159	66	506	63	-	a)245	157	875
Trinidad and Tobago .....	h) 1	15.7	407,468	239,687	0.31	1	-	-	-	-	31	-	84
Virgin Islands (USA) .....	2	...	...	...	...	12	1	a) 81	65	-	a) 8	9	-
Windward Islands:													
Dominica .....	1	...	...	...	...	-	-	3	-	-	20	1	-
Grenada .....	7	...	d) 28,426	16,721	0.18	10	a) 5	-	-	a) 1	9	-	-
St. Lucia .....	15	88.4	d) 9,218	5,422	0.06	9	1	27	42	-	11	5	-
St. Vincent ....	7	100.0	d) 152,162	89,507	1.12	a)11	-	59	a) 36	-	10	34	a) 224

\* A political division with local health service means a specific area with administrative health service which is usually a health unit or health center.

\*\* Based on total population.

(a) Exceeds total shown in Tables 58-60.

(b) Health services rendered by 15 zones to 100 per cent of the population for protection and promotion of health and 70.0 per cent for medical care.

(c) Total number of positions.

(g) Including 393 "Medicaturas Rurales" for which personnel data are not available.

(d) Specific budget item (from Table 61).

(e) 1956.

(h) Port-of-Spain.

(f) Excluding the centers for medical care of the Ministry of Public Health.



TABLE 64. NUMBER AND PERCENTAGES OF LOCAL HEALTH SERVICES WITH SEVEN SPECIFIC ACTIVITIES IN THE AMERICAS, 1957

Area	Local Health Services	Environmental Sanitation		Communicable Disease		Maternal and Child Health		Medical Care		Statistics		Laboratory Services		Health Education	
		Num-ber	Per-Cent	Num-ber	Per-Cent	Num-ber	Per-Cent	Num-ber	Per-Cent	Num-ber	Per-Cent	Num-ber	Per-Cent	Num-ber	Per-Cent
Bolivia	26	15	58	25	96	26	100	23	88	-	-	9	35	16	62
Chile	a) 15	15	100	15	100	15	100	15	100	15	100	15	100	15	100
Colombia (b)	c) 656	656	100	656	100	656	100	656	100	656	100	656	100	656	100
Costa Rica	82	51	62	1	1	56	68	73	89	1	1	15	18	1	1
Cuba	c) 126	126	100	126	100	...	...	126	100	...	...	126	100	...	...
Dominican Republic	23	23	100	23	100	1	4	23	100	1	4	1	4	2	9
Ecuador	d) 18	18	100	18	100	18	100	17	94	18	100	18	100	18	100
El Salvador	53	53	100	47	89	47	89	38	72	47	89	19	36	53	100
Guatemala	26	26	100	26	100	26	100	26	100	26	100	26	100	26	100
Honduras	e) 17	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mexico	535	507	95	523	98	523	98	523	98	511	96	158	30	513	96
Nicaragua	27	20	74	19	70	17	63	20	74	2	7	24	89	20	74
Panama	24	21	88	23	96	23	96	23	96	23	96	11	46	23	96
Paraguay	44	11	25	10	23	43	98	43	98	11	25	4	9	-	-
Peru	40	27	68	39	98	30	75	28	70	33	83	17	43	11	28
United States	1,396	1,396	100	1,396	100	1,396	100	1,396	100	1,396	100	1,396	100	1,396	100
Uruguay (f)	6	6	*	6	*	6	*	-	-	6	*	6	*	6	*
Venezuela (g)	57	57	100	57	100	57	100	22	39	57	100	57	100	57	100
Alaska	32	7	22	2	6	2	6	28	88	2	6	7	22	2	6
Barbados	3	-	-	1	*	3	*	3	*	-	-	1	*	3	*
Bermuda	1	1	*	1	*	1	*	1	*	1	*	1	*	1	*
British Honduras	6	6	*	6	*	6	*	6	*	1	*	1	*	6	*
Canal Zone	1	1	*	1	*	1	*	1	*	1	*	1	*	1	*
French Guiana	a) 7	-	-	-	-	-	-	1	*	1	*	1	*	1	*
Guadeloupe	1	1	*	1	*	1	*	1	*	1	*	1	*	1	*
Hawaii	b) 4	4	*	4	*	4	*	4	*	4	*	4	*	4	*
Jamaica	13	13	100	13	100	13	100	13	100	13	100	13	100	13	100
Leeward Islands:															
Antigua	1	1	*	-	-	1	*	1	*	-	-	1	*	-	-
St. Kitts-Nevis-Anguilla	1	1	*	1	*	1	*	1	*	1	*	1	*	1	*
Virgin Islands	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Martinique	1	1	*	1	*	1	*	1	*	1	*	1	*	1	*
Puerto Rico	76	76	100	76	100	76	100	74	97	76	100	75	99	76	100
Trinidad and Tobago (i)	1	1	*	1	*	1	*	-	-	-	-	-	-	1	*
Virgin Islands (USA)	2	2	*	2	*	2	*	2	*	2	*	2	*	2	*
Windward Islands:															
Dominica	1	1	*	-	-	1	*	-	-	-	-	1	*	-	-
Grenada	7	7	*	7	*	7	*	7	*	1	*	1	*	-	-
St. Lucia	15	15	100	15	100	13	87	15	100	13	87	4	27	1	7
St. Vincent	a) 7	7	*	7	*	7	*	7	*	7	*	7	*	7	*

\*Percentages not calculated for less than 10 local health services.

(a) Health zones.

(b) All the services perform these activities to some extent.

(c) "Municipios" with health services.

(d) Provinces with health services.

(e) Departments with health services.

(f) Excluding the centers for medical care of the Ministry of Public Health.

(g) There are in addition 393 "Medicaturas Rurales."

(h) Counties with health services.

(i) Port-of-Spain.

3.16. The personnel of the 57 health centers and units included 342 physicians, 221 graduate nurses, 826 other nursing personnel, 22 engineers and 253 sanitarians. The personnel of the "medicaturas rurales" which includes the "médico rural" were not given since such personnel depend almost totally on the state governments. In Chile local health services were rendered by health centers under 15 zones to 100 per cent of the population for protection and promotion of health and 70.0 per cent for medical care. The per capita budget in U. S. dollars was 4.96. Many of the territories were covered completely by health services. Although there is probably considerable variation in the inclusions in health services and thus the data are not comparable, this table provides the first such presentation of the coverage of local health services in the Americas.

In several countries and other areas the number of personnel reported for local health services was in excess of the number given in Tables 58-60 which may indicate inclusion of local personnel in this table who were not included in the number of personnel employed in health services stated in another part of the report.

According to the Report of the Rapporteur of the Technical Discussion of VIII

Meeting of the Directing Council on Medical Care in Rural Areas,<sup>(d)</sup> the minimum medico-public health services in rural centers should be (1) environmental sanitation, (2) control of infecto-contagious diseases, (3) maternal and child health, (4) medical care, (5) statistics, (6) laboratory facilities, and (7) health education. From the information provided regarding these activities in local health services Table 64 has been prepared.

Five of the 17 countries reporting on these activities stated that all seven activities were carried on in the local health services. The total number of local health services reported by 17 countries for which the activities were specified was 3,154. In summarizing these 7 activities in the local health services, control of communicable diseases, medical care and environmental sanitation were included most frequently and laboratory services, statistics and health education least frequently.

In the other areas of the Americas more than 10 local health services were reported only in Alaska, Jamaica, Puerto Rico and St. Lucia. Considering all the local health services in these other areas, health education, laboratory services and statistics were very frequently not included.

(d) Proceedings of the VIII Directing Council of the Pan American Sanitary Organization, VII Meeting of the Regional Committee of the World Health Organization for the Americas, Off. Doc. PASO, No. 13, 1955.

## CHAPTER VII

### Hospital Facilities

Information on hospital facilities is necessary for the development of comprehensive health plans and national authorities are devoting increasing attention to the maximum utilization of existing hospital resources. Data are provided here on the numbers of hospitals (Table 65) and numbers of hospital beds (Table 66) according to type of hospital. Hospitals have been termed general hospitals if they provide essentially care for short-term illness or for obstetrics. Thus the total numbers of general hospitals include those for pediatrics, maternity, infectious disease as well as those hospitals which are termed general hospitals because they include services of all types. In addition the numbers of tuberculosis, mental and other hospitals which give care for patients over extended periods are given in these tables. The numbers of total hospital beds and general hospital beds have been calculated per 1,000 population to provide a measure of facilities in relation to population. It is recognized that the number of general hospital beds needed will depend on many factors including socio-economic factors, specific health problems, availability and use of hospitals, etc. Thus it is impossible to give a desirable ratio of beds to population.

Considering, first, general hospital beds for the 22 countries, Canada had the largest

number per 1,000 population, namely 6.3. The United States, Costa Rica and Argentina had 4.2, 3.9 and 3.6 per 1,000 population respectively. Several other countries had 2 or more general hospital beds per 1,000 population. Although the United States had an even larger number of beds devoted to mental diseases, usually the number of such beds was less than for general purposes. In the past many beds have been needed for tuberculosis patients, however, the needs in this field are changing with the decline in morbidity and mortality from tuberculosis and with the use of drugs for domiciliary treatment of cases. In addition to the beds in infectious disease hospitals and in hospitals for tuberculosis patients many beds in the general hospitals are occupied by patients with infectious diseases in many countries and other areas of the Americas. Eradication programs of malaria, smallpox and yaws as well as programs of immunizations against whooping cough and diphtheria and environmental sanitation programs for prevention of typhoid fever and diarrheal diseases will reduce the needs for beds for patients with these diseases. In determining the health needs and priorities of various programs, the fact that prevention of communicable disease is cheaper than treatment of patients with such diseases should have major consideration.

TABLE 65. NUMBER OF HOSPITALS BY TYPE IN THE AMERICAS, 1957

Area	Total	General					Tuber- culosis	Mental	Other
		Total general	Pedi- atric	Mater- nity	Infec- tious diseases	Other general			
Argentina.....	689	591	...	...	...	...	66	25	7
Bolivia.....	80	46	2	6	-	38	3	1	a) 30
Brazil (b).....	2,352	...	53	154	...	1,792	110	...	c) 243
Canada (b).....	1,256	1,119	9	55	12	1,043	63	74	-
Chile.....	224	175	6	1	-	168	16	3	30
Colombia.....	502	467	17	17	8	425	16	16	3
Costa Rica.....	43	37	-	19	-	18	1	3	d) 2
Cuba (e).....	84	63	5	9	1	48	7	1	13
Dominican Republic.....	66	60	2	9	-	49	2	3	1
Ecuador.....	77	65	4	3	5	53	9	2	1
El Salvador.....	23	20	1	1	-	18	2	1	-
Guatemala.....	43	33	-	2	-	31	4	1	5
Haiti.....	26	24	-	1	1	22	2	-	-
Honduras.....	21	19	-	1	-	18	2	-	-
Mexico (b).....	448	427	-	34	-	393	9	6	6
Nicaragua.....	26	23	-	-	-	23	1	1	1
Panama.....	21	12	-	-	-	12	1	1	f) 7
Paraguay.....	130	126	38	8	2	78	3	1	-
Peru.....	186	170	2	5	4	159	5	6	5
United States (g).....	6,956	5,730	54	78	20	5,578	374	586	266
Uruguay (h).....	62	56	1	2	1	52	4	2	-
Venezuela.....	268	233	4	10	1	218	17	16	i) 2
Alaska.....	29	28	-	-	-	28	1	-	-
Bahama Islands.....	4	...	...	...	...	...	...	...	...
Barbados (j).....	4	2	-	1	-	1	-	1	i) 1
Bermuda.....	3	2	-	-	1	1	-	1	-
British Guiana.....	22	19	-	-	-	19	1	1	i) 1
British Honduras.....	9	6	-	-	-	6	1	1	1
Canal Zone.....	4	2	-	-	-	2	-	1	1
French Guiana.....	3	2	-	-	-	2	-	-	k) 1
Guadeloupe.....	9	7	-	-	-	7	-	1	i) 1
Hawaii.....	30	21	1	1	-	19	4	1	l) 4
Jamaica.....	49	23	-	1	1	21	2	1	m) 23
Leeward Islands									
Antigua.....	4	1	-	-	-	1	-	1	2
St. Kitts-Nevis-Anguilla	4	4	-	-	-	4	-	-	-
Virgin Islands.....	1	1	-	-	-	1	-	-	-
Martinique.....	16	14	-	5	-	9	1	1	-
Netherlands Antilles....	7	4	1	1	i) 1	1	1	1	1
Puerto Rico.....	129	116	-	-	-	116	8	3	2
Trinidad and Tobago.....	18	4	-	-	-	4	3	1	10
Virgin Islands (USA)....	5	3	-	-	-	3	-	-	n) 2
Windward Islands									
Dominica.....	4	4	-	-	-	4	-	-	-
Grenada.....	7	4	-	-	1	3	1	1	1
St. Lucia.....	8	4	-	-	-	4	1	1	n) 2
St. Vincent.....	7	2	-	-	1	1	-	1	o) 4

(a) Health centers.

(b) Year 1955.

(c) Including 40 for leprosy.

(d) Including 1 for leprosy and 1 for pyretotherapy.

(e) Government hospitals only.

(f) Private hospitals, excluding 3 with less than 10 beds each. (m) University College Hospital and private nursing homes.

(g) Year 1956.

(h) Hospitals of the Ministry of Public Health only.

(i) For leprosy.

(j) Excluding 11 almshouses.

(k) Private hospital.

(l) 2 for leprosy, 1 for chronic diseases, and 1 for mentally defective children.

(n) One for leprosy and 1 for the aged.

(o) One for leprosy and 3 District Casualty Hospitals.

TABLE 66. NUMBER OF HOSPITAL BEDS BY TYPE OF HOSPITAL, WITH RATES PER 1,000 POPULATION FOR TOTAL BEDS AND GENERAL HOSPITAL BEDS IN THE AMERICAS, 1957

Area	Total		General hospitals					Tuber- culosis hospitals	Mental hospitals	Other hospitals	
	Number	Rate	Total general		Pedi- atric	Mater- nity	Infec- tious dis.				Other general
			Number	Rate							
Argentina .....	a) 104,793	5.3	a) 71,592	3.6	...	...	...	...	9,638	21,747	1,816
Bolivia .....	5,890	1.8	5,024	1.5	140	230	-	4,654	329	290	247
Brazil (b) .....	216,260	3.7	...	...	...	...	...	...	...	...	...
Canada (b) .....	169,020	10.8	99,300	6.3	1,653	1,233	1,002	95,412	14,692	54,758	-
Chile .....	33,358	5.0	19,384	2.9	1,535	381	-	-	4,272	3,521	6,181
Colombia .....	40,153	3.0	31,327	2.4	1,875	854	257	28,341	2,777	5,911	138
Costa Rica .....	5,276	5.1	4,051	3.9	-	282	-	3,769	191	855	179
Cuba (c) .....	16,322	2.6	7,867	1.2	640	1,066	100	6,061	3,011	3,700	1,744
Dominican Republic .....	7,264	2.7	6,277	2.3	662	401	-	5,214	586	220	181
El Salvador .....	3,216	1.4	...	...	...	...	-	...	625	...	-
Guatemala .....	7,874	2.3	5,933	1.7	-	280	-	5,653	593	824	524
Haiti .....	2,071	0.6	1,821	0.5	-	80	50	1,691	250	-	-
Honduras .....	3,532	2.0	3,083	1.7	-	16	-	3,068	448	-	-
Mexico .....	31,719	1.0	26,466	0.8	-	748	-	25,718	1,069	3,584	600
Nicaragua .....	2,662	2.0	1,994	1.5	-	-	-	1,994	300	300	68
Panama .....	3,552	3.9	c) 1,880	2.1	-	-	-	1,880	250	792	d) 630
Paraguay .....	3,588	2.2	2,828	1.7	301	200	40	2,287	360	400	-
Peru .....	19,330	2.2	15,702	1.8	548	603	723	13,828	1,849	1,541	238
United States (e) .....	1,604,408	9.6	708,702	4.2	6,296	3,448	2,632	696,326	80,505	772,852	42,349
Uruguay (f) .....	13,750	5.1	7,785	2.9	741	258	130	6,656	2,115	3,850	-
Venezuela .....	21,406	3.6	14,420	2.4	492	530	77	13,321	2,883	3,103	1,000
Alaska .....	996	4.7	...	...	...	...	...	...	...	...	...
Bahama Islands .....	640	5.3	...	...	...	...	...	...	...	...	...
Barbados .....	g) 1,245	5.4	g) 436	1.9	-	20	-	416	-	791	18
Bermuda .....	330	7.8	166	3.9	-	-	4	162	-	164	-
British Guiana .....	3,186	6.4	1,687	3.4	-	-	-	1,687	262	832	405
British Honduras .....	h) 479	5.7	245	2.9	-	-	-	245	55	100	45
Canal Zone .....	940	25.6	520	14.2	-	-	-	520	-	300	120
French Guiana .....	715	24.7	c) 670	23.1	-	-	-	670	-	-	d) 45
Guadeloupe .....	1,695	6.8	1,134	4.5	-	-	-	1,134	-	450	111
Hawaii .....	4,789	8.7	1,737	3.2	112	115	-	1,510	1,234	1,074	744
Jamaica .....	6,949	4.4	c) 2,721	1.7	-	244	188	-	649	2,985	h,i) 594
Leeward Islands											
Antigua .....	529	9.7	139	2.5	-	-	-	139	-	200	190
Virgin Islands .....	35	4.5	35	4.5	-	-	-	35	-	-	-
Martinique .....	2,286	9.0	1,986	7.8	-	77	-	1,909	100	200	-
Netherlands Antilles .....	i) 1,400	7.4	i) 885	4.7	...	...	30	...	60	400	55
Puerto Rico .....	12,283	5.4	7,049	3.1	-	-	-	7,049	2,760	2,234	240
Trinidad and Tobago .....	3,751	4.9	1,176	1.5	-	-	-	1,176	484	1,032	1,059
Virgin Islands (USA) .....	430	17.9	188	7.8	-	-	-	188	-	-	242
Windward Islands											
Dominica .....	286	4.6	286	4.6	-	-	-	286	-	-	-
Grenada .....	527	5.6	301	3.2	-	-	20	281	68	148	10
St. Lucia .....	477	5.2	172	1.9	-	-	-	172	50	120	135
St. Vincent .....	325	4.1	174	2.2	-	-	40	134	-	105	46

a) Excluding 5,278 beds in other establishments.

b) 1955.

c) Government hospitals only.

d) Private hospitals.

e) 1956.

f) Hospitals of the Ministry of Public Health only.

g) Excluding 1,074 beds in almshouses.

h) Including 34 unspecified.

i) Estimated figure.

## APPENDIX

TABLE A. ESTIMATED\* POPULATION OF CHILDREN 1-4 YEARS, 5-9 YEARS AND 10-14 YEARS OF AGE IN THE AMERICAS, JULY 1, 1953-1956

Area	Age group in years					
	1953			1954		
	1-4	5-9	10-14	1-4	5-9	10-14
Argentina .....	1,609,086	1,833,966	1,773,118	1,640,033	1,869,238	1,807,220
Bolivia .....	392,447	438,237	307,459	396,998	443,318	311,024
Brazil .....	6,946,392	7,549,449	6,788,685	7,111,546	7,728,941	6,950,090
Canada .....	1,424,300	1,555,300	1,237,700	1,462,800	1,641,500	1,299,600
Chile .....	656,000	829,000	692,000	664,000	841,000	702,000
Colombia .....	1,577,454	1,686,275	1,447,296	1,612,608	1,723,854	1,479,549
Costa Rica .....	112,735	123,509	108,238	117,008	128,191	112,341
Cuba .....	603,909	719,413	674,085	616,646	734,585	688,301
Dominican Republic .....	327,995	328,534	305,446	339,287	339,844	315,962
Ecuador .....	454,339	497,624	406,212	462,773	506,861	413,752
El Salvador .....	243,549	277,059	248,255	251,598	286,214	256,459
Guatemala .....	401,844	417,379	360,485	415,030	431,075	372,313
Haiti .....	315,004	418,769	415,831	318,792	423,805	420,832
Honduras .....	187,511	202,086	184,297	193,779	208,841	190,457
Mexico .....	3,439,167	4,004,700	3,389,261	3,536,872	4,118,472	3,485,548
Nicaragua .....	141,399	170,391	147,798	146,108	176,065	152,719
Panama .....	104,172	114,898	91,770	107,159	118,193	94,402
Paraguay .....	192,225	221,931	188,640	196,593	225,952	192,927
Peru .....	954,951	1,188,844	937,664	973,972	1,212,525	956,341
United States .....	14,004,000	15,559,000	12,436,000	14,297,000	16,357,000	12,893,000
Venezuela .....	710,101	732,158	611,749	727,351	749,475	626,031
Alaska .....	19,276	16,962	12,522	19,558	17,210	12,705
Bahama Islands .....	10,290	10,714	9,808	10,809	11,254	10,303
Barbados .....	20,283	24,753	22,311	20,691	25,250	22,760
Bermuda .....	4,068	4,212	3,530	4,145	4,292	3,596
British Guiana .....	47,920	55,642	48,680	49,300	57,244	50,081
British Honduras .....	7,767	9,888	8,939	8,017	10,206	9,226
Canal Zone .....	4,204	3,955	2,635	3,894	3,664	2,441
Falkland Islands .....	155	174	180	154	173	179
French Guiana .....	a) 2,096	5,059		a) 2,086	5,034	
Guadeloupe .....	28,682	30,454	23,734	29,469	31,290	24,386
Hawaii .....	48,831	49,228	38,350	49,756	50,161	39,077
Jamaica .....	150,672	187,551	168,040	153,876	191,540	171,613
Leeward Islands						
Montserrat .....	a) 1,373	1,775	1,771	a) 1,417	1,832	1,828
St. Kitts-Nevis-Anguilla	5,291	6,160	5,707	5,422	6,312	5,848
Martinique .....	a) 27,444	30,522	24,134	a) 28,046	31,191	24,663
Netherlands Antilles(b)	a) 20,509	40,742		a) 20,841	41,102	
Puerto Rico .....	295,697	318,458	271,008	297,835	320,760	272,968
St. Pierre and Miquelon..	480	534	499	486	541	506
Surinam .....	a) 25,222	26,648	23,459	a) 26,041	27,512	24,219
Trinidad and Tobago ....	78,369	82,953	65,773	80,593	85,308	67,640
Virgin Islands (USA)....	3,142	3,732	2,913	2,793	3,317	2,589
Windward Islands						
Dominica .....	a) 6,215	7,578	6,892	a) 6,450	7,863	7,152
Grenada (b) .....	9,681	10,265	c) 20,883	9,944	10,543	c) 21,950
St. Lucia .....	9,827	11,086	10,102	10,018	11,302	10,298
St. Vincent .....	8,296	11,160	9,731	8,453	11,371	9,915

\* Percentages by age group in latest census were applied to the estimated total population.

(a) Estimated from age group 0-4 years.

(b) Data based on United Nations 1952 estimate.

(c) Age group 10-19 years.

TABLE A. ESTIMATED\* POPULATION OF CHILDREN 1-4 YEARS, 5-9 YEARS AND 10-14 YEARS OF AGE IN THE AMERICAS, JULY 1, 1953-1956 (Continued)

Area	Age group in years					
	1955			1956		
	1-4	5-9	10-14	1-4	5-9	10-14
Argentina .....	1,671,897	1,905,555	1,842,332	1,704,026	1,942,174	1,877,736
Bolivia .....	401,601	448,459	314,631	406,258	453,659	318,279
Brazil .....	7,280,655	7,912,731	7,115,359	7,453,732	8,100,834	7,284,506
Canada .....	1,507,700	1,727,600	1,365,400	1,543,800	1,803,300	1,432,100
Chile .....	673,000	853,000	712,000	683,000	865,000	722,000
Colombia .....	1,648,544	1,762,269	1,512,520	1,685,283	1,801,542	1,546,227
Costa Rica .....	121,661	133,288	116,808	126,353	138,429	121,314
Cuba .....	629,652	750,079	702,818	642,967	765,941	717,682
Dominican Republic .....	350,967	351,544	326,839	363,050	363,646	338,091
Ecuador.....	478,875	524,497	428,148	492,477	539,395	440,309
El Salvador.....	260,047	295,826	265,071	268,980	305,988	274,177
Guatemala.....	428,079	444,629	384,020	439,949	456,958	394,668
Haiti.....	322,609	428,879	425,870	326,460	433,999	430,955
Honduras.....	200,067	215,618	196,637	206,288	222,323	202,752
Mexico.....	3,638,122	4,236,371	3,585,329	3,743,374	4,358,931	3,689,053
Nicaragua.....	151,094	182,074	157,932	156,259	188,297	163,330
Panama.....	110,226	121,576	97,104	113,375	125,049	99,878
Paraguay.....	201,091	231,121	197,341	205,716	236,437	201,880
Peru.....	993,424	1,236,740	975,441	1,021,801	1,272,067	1,003,304
United States.....	14,693,000	17,151,000	13,342,000	15,032,000	18,053,000	13,715,000
Venezuela.....	744,615	766,752	640,319	762,041	784,696	655,305
Alaska.....	19,652	17,293	12,767	19,370	17,045	12,583
Bahama Islands.....	11,515	11,990	10,976	12,965	13,499	12,358
Barbados.....	21,051	25,690	23,156	20,988	25,613	23,087
Bermuda.....	4,223	4,372	3,664	4,303	4,455	3,733
British Guiana .....	50,733	58,908	51,537	52,178	60,586	53,005
British Honduras.....	8,298	10,563	9,549	8,514	10,838	9,797
Canal Zone.....	3,894	3,664	2,441	3,729	3,508	2,337
Falkland Islands.....	153	172	178	158	178	184
French Guiana.....	a) 2,148	5,186		a) 2,193	5,294	
Guadeloupe.....	30,470	32,352	25,214	31,447	33,390	26,023
Hawaii.....	51,709	52,130	40,611	54,074	54,514	42,468
Jamaica.....	156,309	194,568	174,327	158,539	197,345	176,815
Leeward Islands						
Montserrat.....	a) 1,479	1,913	1,908	a) 1,487	1,923	1,918
St.Kitts-Nevis-Anguilla.	5,538	6,447	5,974	5,627	6,551	6,070
Martinique .....	a)28,945	32,191	25,454	a)29,672	33,100	26,093
Netherlands Antilles(b)	a)20,996	41,711		a)21,306	42,326	
Puerto Rico .....	302,378	325,653	277,132	302,912	326,228	277,621
St.Pierre and Miquelon.	488	544	509	488	544	509
Surinam .....	a)26,858	28,376	24,980	a)27,802	29,373	25,857
Trinidad and Tobago ...	83,280	88,151	69,894	85,787	90,805	71,999
Virgin Islands (USA)...	2,793	3,317	2,589	2,793	3,317	2,589
Windward Islands						
Dominica.....	a) 6,661	8,121	7,386	a) 6,636	8,089	7,357
Grenada (b).....	10,283	10,904	c)22,183	10,492	11,124	c) 22,632
St. Lucia .....	10,214	11,523	10,499	10,427	11,763	10,719
St. Vincent .....	8,737	11,754	10,249	8,934	12,018	10,480

\* Percentages by age group in latest census were applied to the estimated total population.

(a) Estimated from age group 0-4 years.

(b) Data based on United Nations 1952 estimate.

(c) Age group 10-19 years.

TABLE B. NUMBER OF INFANT DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS, 1956

Cause*	Argentina	Brazil	Canada	Chile	Colombia	Costa Rica	Dominican Republic	Ecuador	El Salvador	Guatemala
	(a)	(b)	(c)				(d)	(d,e)	(d)	(d)
Total deaths	29,234	18,131	14,259	27,509	55,912	3,685	7,733	4,192	8,054	16,109
Tuberculosis, all forms . . . . .001-019	129	83	16	99	156	5	8	32	12	19
Syphilis and its sequelae . . . . .020-029	73	285	6	53	97	10	142	24	107	4
Typhoid fever . . . . .040		1	2	2	45	1	24	1	-	22
Paratyphoid fever and other Salmonella infections . . . . .041,042	2	1	3	6	15	3	...	-	-	11
Dysentery, all forms . . . . .045-048	4	167	22	26	113	17	44	3	12	166
Scarlet fever and streptococcal sore throat . . . . .050,051	2	2	2	3	4	-	-	-	1	2
Diphtheria . . . . .055	7	31	-	11	99	11	36	14	3	12
Whooping cough . . . . .056	147	110	92	235	1,803	53	82	76	93	1,167
Meningococcal infections . . . . .057	9	51	38	10	13	2	-	2	-	3
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	-	-	2	-	...	-	-	-
Tetanus . . . . .061	...	379	1	20	54	130	...	...	276	35
Yaws . . . . .073	-	-	-	-	-	-	...	...	-	-
Acute poliomyelitis . . . . .080	37	18	-	21	8	1	-	-	1	4
Smallpox . . . . .084	-	7	-	-	64	-	-	5	-	-
Measles . . . . .085	29	64	66	186	693	20	32	28	112	302
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-
Habies . . . . .094	...	-	-	-	-	-	-	...	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	1	-	-	-	-	-
Typhus, other forms . . . . .101-108	6	-	-	-	169	-	-	-	-	1
Malaria . . . . .110-117	-	1	-	-	194	41	155	10	111	726
Infestation by helminths . . . . .123-130	...	...	...	1	653	80	...	...	44	831
All other infective and parasitic diseases 030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	350	114	96	112	298	18	1,243	138	35	88
Malignant neoplasms, etc. . . . .140-205	49	17	26	14	30	3	-	3	3	3
Benign and unspecified neoplasms . . . . .210-239	9	6	15	10	18	3	1	2	2	1
Diseases of thyroid gland . . . . .250-254	...	-	1	-	3	-	...	...	1	-
Diabetes mellitus . . . . .260	-	-	1	-	1	-	-	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	...	9	7	190	1,298	6	...	...	1	43
Anaemias . . . . .290-293	67	9	20	10	136	22	15	5	-	25
Vascular lesions affecting central nervous system . . . . .330-334	225	10	12	479	56	12	6	6	5	51
Nonmeningococcal meningitis . . . . .340	694	144	140	243	973	20	81	37	9	68
Rheumatic fever . . . . .400-402		3	1	-	-	-	-	-	-	-
Diseases of the heart . . . . .410-443		22	19	62	-	4	23	14	-	10
Arteriosclerosis . . . . .450	265	-	-	-	-	-	...	...	-	-
Other diseases of circulatory system . . . . .444-447,451-468		4	2	3	27	4	-	1	1	3
Influenza and pneumonia . . . . .480-483,490-493	5,175	2,643	1,731	7,760	4,604	278	232	374	300	2,119
Bronchitis . . . . .500-502	521	93	149	118	3,845	147	379	312	356	1,125
Other diseases of respiratory system . . . . .470-475,510-527	...	114	175	141	120	10	...	...	65	125
Ulcer of stomach and duodenum . . . . .540,541	2	1	7	1	-	1	-	1	-	1
Appendicitis . . . . .550-553	4	1	3	1	-	-	-	1	-	-
Intestinal obstruction & hernia . . . . .560,561,570	116	61	134	78	116	17	12	15	5	20
Gastritis, enteritis, etc. . . . .543,571,572	2,261	6,763	488	4,209	7,942	874	1,487	1,315	1,773	1,892
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	...	47	63	52	1,875	34	-	17	194	71
Nephritis and nephrosis . . . . .590-594	58	38	18	25	149	3	27	6	-	3
Other diseases of genito-urinary system . . . . .600-637	...	26	18	5	13	-	-	-	-	4
Complications of pregnancy, childbirth and puerperium . . . . .640-689		-	-	-	-	-	-	-	-	-
Congenital malformations . . . . .750-759		706	2,304	479	962	93	118	76	25	94
Certain diseases of early infancy . . . . .760-776	11,345	5,700	7,503	10,312	15,133	1,001	2,796	1,275	2,668	5,802
Senility, ill-defined and unknown . . . . .780-795	1,578	156	231	2,161	13,570	698	249	296	1,756	1,151
All other diseases . . . . .Residual	5,852	184	349	241	284	42	516	76	70	73
Accidents . . . . .E800-E962		53	490	106	249	20	25	27	12	27
Suicide and self-inflicted injury . . . . .E963,E970-E979	218	-	-	-	-	-	-	-	-	-
Homicide and operations of war . . . . .E964,E965,E980-E999		7	8	24	26	1	-	-	1	5

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(b) Data for Federal District and seven State capitals.

(c) Excluding Yukon and Northwest Territories.

(d) Year 1955.

(e) Capital cities of provinces.



TABLE B. NUMBER OF INFANT DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS 1956 (Continued)

Cause*	Mexico	Nicaragua	Panama	Paraguay	Peru	United States	Uruguay	Venezuela	Alaska	Bar- bados	Bermuda
	(d)				(a)	(d)	(d)		(d,f)		
Total deaths	114,834	3,342	2,007	1,802	28,226	106,903	2,614	18,538	281	685	44
Tuberculosis, all forms . . . . .001-019	158	-	11	2	145	96	13	37	5	1	-
Syphilis and its sequelae . . . . .020-029	490	-	2	45	39	34	16	40	-	18	-
Typhoid fever . . . . .040	370	-	-	-	69	1	-	1	-	-	-
Paratyphoid fever and other											
Salmonella infections . . . . .041,042	206	171	-	3	...	20	-	2	-	-	-
Dysentery, all forms . . . . .045-048	777	8	2	10	128	271	1	29	-	-	-
Scarlet fever and streptococcal											
sore throat . . . . .050,051	45	5	-	-	125	28	-	1	-	-	-
Diphtheria . . . . .055	134	-	-	2	19	6	-	25	-	1	-
Whooping cough . . . . .056	3,052	33	98	11	4,111	334	32	135	3	19	-
Meningococcal infections . . . . .057	27	-	1	5	10	257	1	4	-	1	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	-	-	...	-	-	-	-	-	-
Tetanus . . . . .061	1,323	206	163	137	139	75	22	393	-	15	-
Yaws . . . . .073	-	-	-	-	...	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	61	2	4	3	9	39	6	2	-	-	-
Smallpox . . . . .084	-	-	-	1	62	-	1	-	-	-	-
Measles . . . . .085	1,672	34	11	5	274	81	3	55	-	-	-
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	1	-	-	-	...	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	...	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	11	-	-	-	190	-	-	-	-	-	-
Malaria . . . . .110-117	3,051	319	21	-	184	2	-	1	-	-	-
Infestation by helminths . . . . .123-130	51	-	28	5	...	5	...	...	-	-	-
All other infective and parasitic diseases											
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	766	28	8	14	247	550	29	79	1	2	-
Malignant neoplasms, etc. . . . .140-205	13	2	4	-	14	289	3	12	-	-	-
Benign and unspecified neoplasms . . . . .210-239	34	2	1	-	7	163	1	10	-	-	-
Diseases of thyroid gland . . . . .250-254	h)	-	-	-	...	23	-	-	-	-	-
Diabetes mellitus . . . . .260	9	-	-	2	-	23	-	1	-	-	-
Avitaminoses and other metabolic											
diseases . . . . .280-289	i) 1,154	2	-	-	107	...	1	63	-	16	-
Anaemias . . . . .290-293	111	23	4	6	50	134	3	16	1	2	-
Vascular lesions affecting central											
nervous system . . . . .330-334	58	2	2	1	17	212	2	14	-	2	-
Nonmeningococcal meningitis . . . . .340	456	46	15	27	265	676	37	144	1	1	-
Rheumatic fever . . . . .400-402	2	-	-	-	9	9	1	-	-	-	-
Diseases of the heart . . . . .410-443	170	9	2	-	60	267	-	8	1	2	-
Arteriosclerosis . . . . .450	-	-	-	-	-	-	-	-	-	-	-
Other diseases of circulatory											
system . . . . .444-447,451-468	37	2	-	-	j) -	51	-	3	-	1	-
Influenza and pneumonia . . . . .480-483,490-493	23,830	209	117	116	5,726	8,318	264	1,338	39	115	10
Bronchitis . . . . .500-502	5,205	9	150	61	1,653	672	9	203	3	11	-
Other diseases of respiratory											
system . . . . .470-475,510-527	513	35	23	9	k) 70	2,298	17	57	16	2	-
Ulcer of stomach and duodenum . . . . .540,541	-	-	-	-	-	58	-	2	2	-	-
Appendicitis . . . . .550-553	12	2	-	-	1	19	1	-	-	-	-
Intestinal obstruction & hernia . . . . .560,561,570	274	2	5	5	48	956	11	77	1	1	-
Gastritis, enteritis, etc. . . . .543,571,572	23,261	869	308	125	1,715	3,257	420	3,477	6	61	2
Other diseases of digestive system . . . . .530-539											
542,544,545,573-587	1,527	17	27	5	...	440	11	32	1	6	-
Nephritis and nephrosis . . . . .590-594	57	2	4	2	16	71	2	38	-	4	-
Other diseases of genito-urinary											
system . . . . .600-637	13	1	3	-	...	90	1	8	1	1	-
Complications of pregnancy,											
childbirth and puerperium . . . . .640-689	-	-	-	-	-	-	-	-	-	-	-
Congenital malformations . . . . .750-759	2,203	5	35	25	225	15,356	149	417	25	12	4
Certain diseases of early infancy . . . . .760-776	42,218	973	511	496	7,778	64,016	1,209	4,312	126	360	26
Senility, ill-defined and unknown . . . . .780-795	-	290	409	664	3,692	2,790	249	7,208	21	18	-
All other diseases . . . . .Residual	417	11	23	8	882	1,479	86	171	3	13	2
Accidents . . . . .E800-E962	1,036	23	15	7	136	3,308	9	118	25	-	-
Suicide and self-inflicted											
injury . . . . .E963,E970-E979	-	-	-	-	-	-	-	-	-	-	-
Homicide and operations											
of war . . . . .E964,E965,E980-E999	29	-	-	-	4	129	4	5	-	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(h) Detailed list numbers 250-252.

(d) Year 1955.

(i) Detailed list numbers 280-286.

(f) Data corrected for residence.

(j) Detailed list numbers 444-447.

(k) Detailed list numbers 470-475.

TABLE B. NUMBER OF INFANT DEATHS FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	British Honduras	Canal Zone	Hawaii	Jamaica	Leeward Islands	Martinique	Puerto Rico	Trinidad and Tobago	Virgin Islands	Windward Islands
					Virgin Islands				(U.S.)	St. Vincent (d)
				(g)		(d)				
Total deaths	257	30	383	3,600	32	445	4,368	1,755	66	426
Tuberculosis, all forms .....001-019	2	-	...	5	-	-	20	4	-	1
Syphilis and its sequelae .....020-029	1	-	-	73	-	-	8	4	-	2
Typhoid fever ..... 040	-	-	-	2	-	-	-	3	-	-
Paratyphoid fever and other										
Salmonella infections .....041,042	-	1	1	3	-	-	...	-	-	-
Dysentery, all forms .....045-048	4	-	1	5	-	-	3	7	-	2
Scarlet fever and streptococcal sore throat .....050,051	-	-	1	-	-	-	-	-	-	-
Diphtheria ..... 055	-	-	-	1	-	-	1	1	-	-
Whooping cough ..... 056	-	-	-	8	-	15	10	5	-	25
Meningococcal infections ..... 057	4	-	-	1	-	-	4	2	-	-
Plague ..... 058	-	-	-	-	-	-	-	-	-	-
Leprosy ..... 060	-	-	-	-	-	-	-	-	-	-
Tetanus ..... 061	-	-	-	18	-	7	18	16	-	-
Yaws ..... 073	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis ..... 080	-	1	-	6	-	-	3	-	-	-
Smallpox ..... 084	-	-	-	-	-	-	-	-	-	-
Measles ..... 085	-	-	1	3	-	-	9	1	-	-
Yellow fever ..... 091	-	-	-	-	-	-	-	-	-	-
Rabies ..... 094	-	-	-	-	-	-	-	-	-	-
Louse-borne epidemic typhus ..... 100	-	-	-	-	-	-	-	-	-	-
Typhus, other forms .....101-108	-	-	-	-	-	-	-	-	-	-
Malaria ..... 110-117	1	-	-	95	-	-	-	3	-	-
Infestation by helminths .....123-130	...	-	-	...	-	...	...	...	-	...
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	1	-	-	26	-	44	45	9	-	6
Malignant neoplasms, etc. ....140-205	-	-	2	4	-	-	8	1	-	-
Benign and unspecified neoplasms ..210-239	-	-	3	-	-	1	2	-	-	-
Diseases of thyroid gland .....250-254	-	-	-	1	-	-	-	-	-	-
Diabetes mellitus ..... 260	-	-	-	-	-	-	1	1	-	-
Avitaminoses and other metabolic diseases .....280-289	11	-	-	4	2	-	15	19	-	-
Anaemias .....290-293	1	-	1	5	2	2	9	10	-	-
Vascular lesions affecting central nervous system .....330-334	-	-	...	1	-	1	14	4	-	-
Nonmeningococcal meningitis ..... 340	-	1	4	21	1	11	28	9	-	-
Rheumatic fever .....400-402	-	-	-	-	-	-	1	-	-	-
Diseases of the heart.....410-443	-	-	-	3	-	3	10	5	-	-
Arteriosclerosis ..... 450	-	-	-	-	-	-	-	-	-	-
Other diseases of circulatory system..... 444-447,451-468	-	-	-	2	-	-	6	-	-	-
Influenza and pneumonia .. 480-483,490-493	27	2	36	231	8	48	351	184	4	21
Bronchitis .....500-502	2	-	1	62	-	6	32	57	-	30
Other diseases of respiratory system .....470-475,510-527	-	4	4	13	-	-	17	23	-	-
Ulcer of stomach and duodenum.....540,541	-	-	-	-	-	-	-	-	-	-
Appendicitis .....550-553	-	-	-	-	-	-	-	-	-	-
Intestinal obstruction & hernia 560,561,570	1	-	2	22	-	-	13	9	-	-
Gastritis, enteritis, etc. .... 543,571,572	44	-	5	344	12	59	1,155	289	7	93
Other diseases of digestive system 530-539										
542,544,545,573-587	-	-	1	36	-	-	31	19	-	-
Nephritis and nephrosis ..... 590-594	1	-	-	23	-	-	6	4	-	1
Other diseases of genito-urinary system ..... 600-637	1	-	-	4	-	-	1	3	-	-
Complications of pregnancy, childbirth and puerperium .....640-689	-	-	-	-	-	-	-	-	-	-
Congenital malformations .....750-759	13	3	57	57	-	61	249	60	10	-
Certain diseases of early infancy..760-776	81	18	254	621	4	103	1,433	928	37	237
Senility, ill-defined and unknown..780-795	-	-	-	20	-	22	584	15	2	-
All other diseases .....Residual	61	-	6	1,868	3	52	243	43	5	6
Accidents .....E800-E962	1	-	3	12	-	10	36	17	1	1
Suicide and self-inflicted injury .....E963,E970-E979	-	-	-	-	-	-	-	-	-	-
Homicide and operations of war .....E964,E965,E980-E999	-	-	-	-	-	-	2	-	-	1

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(d) Year 1955.

(g) Year 1954.

TABLE C. NUMBER OF DEATHS OF CHILDREN 1-4 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956

Cause*	Argentina	Brazil	Canada	Chile	Colombia	Costa Rica	Dominican Republic	Ecuador	El Salvador	Guatemala
	(a)	(b)	(c)				(d)	(d,e)	(d)	(d)
Total deaths	7,577	6,140	2,317	7,118	34,277	1,240	4,936	2,108	7,913	18,260
Tuberculosis, all forms . . . . .001-019	162	195	47	214	320	11	17	58	30	85
Syphilis and its sequelae . . . . .020-029	5	16	1	3	13	1	14	1	126	1
Typhoid fever . . . . .040		1	1	10	77	1	39	3	7	48
Paratyphoid fever and other Salmonella infections . . . . .041,042	10	1	-	2	18	1	...	...	-	6
Dysentery, all forms . . . . .045-048	21	89	3	14	211	14	49	7	46	879
Scarlet fever and streptococcal sore throat . . . . .050,051	-	1	2	5	4	1	-	-	-	3
Diphtheria . . . . .055	39	100	3	71	214	13	47	53	7	15
Whooping cough . . . . .056	98	107	22	106	1,852	32	53	47	109	1,430
Meningococcal infections . . . . .057	13	26	27	10	13	-	-	1	-	1
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	-	-	1	-	...	...	-	-
Tetanus . . . . .061	...	19	-	6	69	16	...	...	11	4
Yaws . . . . .073	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	53	44	14	53	38	2	-	5	1	14
Smallpox . . . . .084	-	6	-	-	55	-	-	10	-	-
Measles . . . . .085	41	161	76	243	1,602	40	71	62	454	909
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	...	4	-	1	3	-	-	...	-	1
Louse-borne epidemic typhus . . . . .100	-	-	-	1	2	-	-	1	-	-
Typhus, other forms . . . . .101-108	5	-	-	-	185	-	-	-	-	4
Malaria . . . . .110-117	3	4	-	-	336	17	299	17	215	1,231
Infestation by helminths . . . . .123-130	...	...	...	5	2,257	163	...	...	364	3,427
All other infective and parasitic diseases 030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	109	293	33	69	287	4	335	52	54	290
Malignant neoplasms, etc. . . . .140-205	77	72	196	34	79	9	4	5	3	11
Benign and unspecified neoplasms . . . . .210-239	31	11	25	6	13	1	3	2	4	2
Diseases of thyroid gland . . . . .250-254	...	-	1	-	1	-	...	...	12	-
Diabetes mellitus . . . . .260	5	4	7	2	1	-	1	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	...	263	16	85	2,037	35	...	...	373	335
Anaemias . . . . .290-293	41	16	11	4	447	35	119	17	31	158
Vascular lesions affecting central nervous system . . . . .330-334	103	8	15	111	52	5	9	-	4	49
Nonmeningococcal meningitis . . . . .340	345	72	36	84	682	17	53	42	13	64
Rheumatic fever . . . . .400-402		5	6	2	1	-	-	1	-	-
Diseases of the heart . . . . .410-443		39	10	55	255	12	78	12	5	17
Arteriosclerosis . . . . .450	149	-	-	2	-	-	...	...	-	-
Other diseases of circulatory system . . . . .444-447,451-468		3	3	4	26	1	-	3	4	11
Influenza and pneumonia . . . . .480-483,490-493	1,184	1,184	336	2,725	3,474	128	257	273	207	2,094
Bronchitis . . . . .500-502	152	35	40	41	2,682	45	290	215	199	644
Other diseases of respiratory system . . . . .470-475,510-527	...	64	81	75	160	5	...	...	59	83
Ulcer of stomach and duodenum . . . . .540,541	-	-	3	-	-	-	-	-	-	-
Appendicitis . . . . .550-553	5	3	19	3	18	-	2	2	-	1
Intestinal obstruction & hernia . . . . .560,561,570	31	19	15	24	59	3	12	9	6	18
Gastritis, enteritis, etc. . . . .543,571,572	530	2,320	81	1,140	6,211	239	990	808	2,255	4,092
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	...	40	28	69	1,710	35	-	25	570	235
Nephritis and nephrosis . . . . .590-594	88	135	23	74	578	9	44	37	3	41
Other diseases of genito-urinary system . . . . .600-637	...	32	7	3	23	3	-	1	1	8
Complications of pregnancy, childbirth and puerperium . . . . .640-689	-	-	-	-	-	-	-	-	-	-
Congenital malformations . . . . .750-759		88	247	50	63	15	-	13	-	4
Certain diseases of early infancy . . . . .760-776	981	39	4	467	2	-	19	-	-	-
Senility, ill-defined and unknown . . . . .780-795	966	78	35	664	6,847	258	1,363	213	2,607	1,900
All other diseases . . . . .Residual	1,640	168	133	107	311	21	691	57	70	83
Accidents . . . . .E800-E962		324	702	423	897	47	76	56	61	61
Suicide and self-inflicted injury . . . . .E963, E970-E979	690	-	-	-	-	-	-	-	-	-
Homicide and operations of war . . . . .E964, E965, E980-E999		51	8	51	91	1	1	-	2	1

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(b) Federal District and seven State capitals.

(c) Excluding Yukon and Northwest Territories.

(d) Year 1955.

(e) Capital cities of provinces.

TABLE C. NUMBER OF DEATHS OF CHILDREN 1-4 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Mexico (d)	Nicaragua	Panama	Paraguay	Peru (a)	United States (d)	Uruguay (d)	Venezuela	Alaska (d,f)	Barbados
Total deaths	87,473	1,455	1,161	790	18,834	16,684	353	9,501	46	125
Tuberculosis, all forms .....001-019	567	3	23	7	455	256	16	104	6	1
Syphilis and its sequelae .....020-029	49	-	-	3	11	5	1	2	-	4
Typhoid fever ..... 040	677	9	-	3	143	2	1	8	-	-
Paratyphoid fever and other										
Salmonella infections .....041,042	213	79	-	2	...	2	-	3	-	-
Dysentery, all forms .....045-048	2,148	12	6	34	405	64	-	78	-	-
Scarlet fever and streptococcal										
sore throat .....050,051	151	3	-	-	277	40	2	-	-	-
Diphtheria ..... 055	210	-	1	7	16	60	4	35	-	4
Whooping cough ..... 056	3,847	33	97	5	2,766	124	10	161	-	4
Meningococcal infections ..... 057	24	-	-	4	6	331	1	1	-	1
Plague ..... 058	-	-	-	-	-	-	-	-	-	-
Leprosy ..... 060	-	-	-	-	...	-	-	-	-	-
Tetanus ..... 061	94	19	3	6	3	19	2	25	-	-
Yaws ..... 073	...	-	-	-	...	-	-	-	-	-
Acute poliomyelitis ..... 080	178	-	4	2	13	117	13	18	-	-
Smallpox ..... 084	-	-	-	-	105	-	-	-	-	-
Measles ..... 085	6,394	60	31	5	664	153	7	145	-	-
Yellow fever ..... 091	-	-	-	-	-	-	-	-	-	-
Rabies ..... 094	3	-	-	-	-	-	-	5	-	-
Louse-borne epidemic typhus ..... 100	55	-	-	-	147	1	-	-	-	-
Typhus, other forms .....101-108	-	-	-	-	...	-	-	-	-	-
Malaria .....110-117	4,636	171	43	2	286	-	-	1	-	-
Infestation by helminths .....123-130	343	232	148	21	...	35	...	...	-	-
All other infective and parasitic diseases										
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	1,006	13	7	17	266	300	5	327	-	-
Malignant neoplasms, etc. ....140-205	90	2	6	6	14	1,636	15	50	1	2
Benign and unspecified neoplasms ..210-239	56	-	1	1	3	147	4	7	-	-
Diseases of thyroid gland .....250-254	h) 3	-	-	-	...	2	-	-	-	-
Diabetes mellitus ..... 260	7	-	-	-	-	42	-	4	-	-
Avitaminoses and other metabolic										
diseases .....280-289 i)	4,510	11	14	3	290	...	3	543	-	10
Anaemias .....290-293	643	15	23	11	172	147	4	33	-	2
Vascular lesions affecting central										
nervous system .....330-334	184	-	4	1	9	136	-	5	-	1
Nonmeningococcal meningitis ..... 340	490	13	8	16	294	361	7	82	2	2
Rheumatic fever .....400-402	7	-	-	-	18	42	-	-	-	-
Diseases of the heart.....410-443	583	5	2	5	99	197	2	17	-	1
Arteriosclerosis ..... 450	-	-	-	-	-	-	-	-	-	-
Other diseases of circulatory										
system..... 444-447,451-468	73	1	1	-	j) -	1	-	-	-	-
Influenza and pneumonia .. 480-483,490-493	15,472	101	117	81	4,016	2,196	56	830	10	39
Bronchitis .....500-502	2,095	9	112	25	848	341	4	135	1	3
Other diseases of respiratory										
system .....470-475,510-527	475	15	21	6	k) 45	481	11	55	5	2
Ulcer of stomach and duodenum.....540,541	-	-	-	-	1	12	-	1	-	-
Appendicitis .....550-553	16	2	-	-	1	83	-	7	1	-
Intestinal obstruction & hernia 560,561,570	111	-	2	6	19	109	2	26	1	-
Gastritis, enteritis, etc. ....543,571,572	28,529	281	143	94	1,836	650	55	1,676	-	9
Other diseases of digestive system 530-539										
542,544,545,573-587	2,565	14	20	58	...	204	3	46	-	1
Nephritis and nephrosis ..... 590-594	408	2	6	9	95	188	3	100	-	2
Other diseases of genito-urinary										
system ..... 600-637	16	1	-	-	...	38	-	5	-	1
Complications of pregnancy,										
childbirth and puerperium .....640-689	-	-	-	-	-	-	-	-	-	-
Congenital malformations .....750-759	146	-	4	7	7	1,782	11	40	1	3
Certain diseases of early infancy..760-776	-	-	-	-	56	23	12	18	-	3
Senility, ill-defined and unknown..780-795	7,105	287	268	300	4,356	443	34	4,360	3	20
All other diseases .....Residual	1,180	22	14	14	799	1,029	26	215	-	8
Accidents .....E800-E962	2,056	40	30	29	289	4,791	38	329	15	2
Suicide and self-inflicted										
injury .....E963,E970-E979	-	-	-	-	-	-	-	-	-	-
Homicide and operations										
of war .....E964,E965,E980-E999	58	-	2	-	4	76	1	2	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(i) Detailed list numbers 280-286.

(d) Year 1955.

(j) Detailed list numbers 444-447.

(f) Data corrected for residence.

(k) Detailed list numbers 470-475.

(h) Detailed list numbers 250-252.

TABLE C. NUMBER OF DEATHS OF CHILDREN 1-4 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Bermuda	British Honduras	Canal Zone	Hawaii	Jamaica (g)	Leeward Islands	Martinique	Puerto Rico (d)	Trinidad and Tobago	Virgin Islands (U.S.)	Windward Islands
						Virgin Islands					St. Vincent (d)
Total deaths	3	88	1	52	2,004	9	245	1,365	412	13	232
Tuberculosis, all forms . . . . .001-019	-	1	-	1	15	-	3	31	8	-	1
Syphilis and its sequelae . . . . .020-029	-	-	-	-	29	-	-	-	-	-	-
Typhoid fever . . . . .040	-	-	-	-	5	-	1	-	1	-	-
Paratyphoid fever and other											
Salmonella infections . . . . .041,042	-	-	-	-	-	-	-	-	-	-	-
Dysentery, all forms . . . . .045-048	-	1	-	-	2	1	-	1	6	-	-
Scarlet fever and streptococcal sore throat . . . . .050,051	-	-	-	-	-	-	-	-	-	-	-
Diphtheria . . . . .055	-	1	-	-	10	-	-	8	4	-	-
Whooping cough . . . . .056	-	-	-	-	9	-	2	7	-	-	10
Meningococcal infections . . . . .057	-	3	-	1	-	-	-	5	-	-	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	-	-	-	-	-	-	-	-	-
Tetanus . . . . .061	-	-	-	-	2	-	-	4	4	-	-
Yaws . . . . .073	-	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	-	-	1	-	13	-	-	15	-	-	-
Smallpox . . . . .084	-	-	-	-	-	-	-	-	-	-	-
Measles . . . . .085	-	-	-	2	22	-	-	13	-	2	-
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	-	-	-	-	-	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	-	-	-	-	-	-	-	-	-	-	-
Malaria . . . . .110-117	-	3	-	-	113	-	-	-	2	-	-
Infestation by helminths . . . . .123-130	-	-	-	-	-	-	-	-	-	-	-
All other infective and parasitic diseases											
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	-	1	-	1	84	-	16	103	14	-	14
Malignant neoplasms, etc. . . . .140-205	1	-	-	3	6	-	1	16	4	-	-
Benign and unspecified neoplasms . . . . .210-239	-	-	-	-	1	-	1	1	-	-	-
Diseases of thyroid gland . . . . .250-254	-	-	-	-	-	-	-	1	-	-	-
Diabetes mellitus . . . . .260	-	-	-	-	2	-	-	1	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	-	1	-	1	229	-	-	55	17	-	-
Anaemias . . . . .290-293	-	1	-	1	11	-	1	12	18	-	-
Vascular lesions affecting central nervous system . . . . .330-334	-	-	-	1	7	-	1	9	4	-	-
Nonmeningococcal meningitis . . . . .340	-	-	-	2	14	-	10	30	8	1	-
Rheumatic fever . . . . .400-402	-	-	-	-	-	-	-	-	1	-	-
Diseases of the heart . . . . .410-443	-	-	-	-	8	-	-	9	4	-	-
Arteriosclerosis . . . . .450	-	-	-	-	-	-	-	-	-	-	-
Other diseases of circulatory system . . . . .444-447,451-468	-	-	-	-	3	-	-	-	-	-	-
Influenza and pneumonia . . . . .480-483,490-493	1	2	-	10	231	2	10	201	83	3	4
Bronchitis . . . . .500-502	-	3	-	1	50	-	1	19	19	-	25
Other diseases of respiratory system . . . . .470-475,510-527	-	2	-	1	13	-	-	14	6	-	-
Ulcer of stomach and duodenum . . . . .540,541	-	-	-	-	-	-	-	-	-	-	-
Appendicitis . . . . .550-553	-	-	-	1	2	-	-	1	-	-	-
Intestinal obstruction & hernia . . . . .560,561,570	-	-	-	2	3	-	-	9	2	-	-
Gastritis, enteritis, etc. . . . .543,571,572	-	17	-	3	180	2	27	377	68	4	51
Other diseases of digestive system . . . . .530-539											
542,544,545,573-587	-	-	-	-	28	-	-	12	14	-	-
Nephritis and nephrosis . . . . .590-594	-	1	-	-	54	-	-	26	6	-	2
Other diseases of genito-urinary system . . . . .600-637	-	-	-	-	3	-	-	2	-	-	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	-	-	-	-	-	-	-	-	-	-	-
Congenital malformations . . . . .750-759	1	-	-	7	9	-	-	26	11	-	-
Certain diseases of early infancy . . . . .760-776	-	-	-	-	1	-	30	-	16	-	98
Senility, ill-defined and unknown . . . . .780-795	-	-	-	1	59	-	12	230	10	-	-
All other diseases . . . . .Residual	-	46	-	2	739	4	123	65	43	-	27
Accidents . . . . .E800-E962	-	5	-	11	46	-	6	61	38	3	-
Suicide and self-inflicted injury . . . . .E963,E970-E979	-	-	-	-	-	-	-	-	-	-	-
Homicide and operations of war . . . . .E964,E965,E980-E999	-	-	-	-	1	-	-	1	1	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(d) Year 1955.

(g) Year 1954.

TABLE D. NUMBER OF DEATHS OF CHILDREN 5-9 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956

Cause*	Argentina	Brazil	Canada	Chile	Colombia	Costa Rica	Dominican Republic (d)	Ecuador (d,e)	El Salvador (c)	Guatemala (d)	Mexico (d)	Nicaragua	Panama	Paraguay
	(a)	(b)	(c)											
Total deaths	1,748	968	1,102	1,233	6,395	264	823	382	1,796	4,260	16,355	372	325	228
Tuberculosis, all forms . . . . .001-019	72	67	18	92	132	8	5	34	18	40	253	2	2	5
Syphilis and its sequelae . . . . .020-029	-	2	-	-	5	-	1	1	8	-	8	-	-	-
Typhoid fever . . . . .040	-	6	-	17	72	-	31	15	3	16	330	10	-	1
Paratyphoid fever and other	12	-	-	-	-	-	-	-	-	-	-	-	-	-
Salmonella infections . . . . .041,042	-	-	-	-	4	1	...	...	-	2	58	18	-	1
Dysentery, all forms . . . . .045-048	2	12	1	-	56	6	8	4	24	328	413	4	2	6
Scarlet fever and streptococcal sore throat . . . . .050,051	-	-	1	2	-	-	-	-	-	2	23	-	-	-
Diphtheria . . . . .055	24	15	4	37	42	1	6	19	4	5	110	-	-	2
Whooping cough . . . . .056	7	7	2	13	229	3	8	8	9	227	429	5	12	1
Meningococcal infections . . . . .057	-	15	7	3	2	-	-	-	-	-	7	-	2	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	-	-	-	-	-	...	...	-	-	1	-	-	-
Tetanus . . . . .061	...	24	1	4	49	13	...	...	5	7	114	11	6	4
Yaws . . . . .073	-	-	-	-	-	-	...	...	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	32	4	8	4	12	3	-	-	1	7	48	-	2	1
Smallpox . . . . .084	-	-	-	-	9	-	-	1	-	-	-	-	-	-
Measles . . . . .085	7	16	10	17	297	9	4	8	68	172	1,123	7	6	4
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	...	7	-	2	8	-	-	-	-	3	11	-	-	-
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	-	-	-	20	-	-	-
Typhus, other forms . . . . .101-108	-	-	-	-	92	-	-	-	-	2	-	-	-	-
Malaria . . . . .110-117	4	4	-	-	132	12	80	2	72	458	1,503	57	16	-
Infestation by helminths . . . . .123-130	...	...	...	2	476	30	...	...	76	625	150	32	20	7
All other infective and parasitic diseases														
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	45	77	11	15	57	9	57	41	13	78	217	-	-	5
Malignant neoplasms, etc. . . . .140-205	38	68	137	46	58	5	3	-	3	8	76	2	4	5
Benign and unspecified neoplasms . . . . .210-239	9	11	8	3	21	1	3	-	1	-	54	2	3	-
Diseases of thyroid gland . . . . .250-254	...	-	1	-	1	-	...	...	4	-	h)	-	-	-
Diabetes mellitus . . . . .260	2	2	2	2	3	-	3	-	-	-	14	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	...	10	3	12	236	7	...	...	134	103	i)649	1	7	1
Anaemias . . . . .290-293	24	10	2	4	266	20	29	8	18	106	279	9	22	6
Vascular lesions affecting central nervous system . . . . .330-334	20	4	10	18	28	1	4	-	1	20	90	2	2	-
Nonmeningococcal meningitis . . . . .340	88	24	15	23	137	1	5	10	6	20	150	4	6	2
Rheumatic fever . . . . .400-402	24	15	22	7	1	-	-	1	-	9	9	-	-	1
Diseases of the heart . . . . .410-443	27	11	30	109	2	21	15	2	8	334	5	1	1	1
Arteriosclerosis . . . . .450	106	-	-	1	-	-	...	...	-	-	72	-	-	-
Other diseases of circulatory system . . . . .444-447,451-468	-	2	1	5	1	1	-	-	-	4	-	-	-	-
Influenza and pneumonia . . . . .480-483,490-493	147	102	41	309	462	9	37	34	61	380	2,037	20	26	20
Bronchitis . . . . .500-502	9	2	7	5	198	1	31	12	31	85	232	-	14	-
Other diseases of respiratory system . . . . .470-475,510-527	...	10	17	20	46	4	...	...	8	20	136	1	5	1
Ulcer of stomach and duodenum . . . . .540,541	-	-	-	-	2	-	-	1	-	-	1	-	-	-
Appendicitis . . . . .550-553	9	6	14	12	8	1	1	-	-	1	22	1	1	4
Intestinal obstruction & hernia . . . . .560,561,570	11	3	3	5	16	-	1	1	-	4	46	1	-	3
Gastritis, enteritis, etc. . . . .543,571,572	26	90	5	28	518	31	59	44	290	705	3,283	6	9	16
Other diseases of digestive system . . . . .530-539	...	16	16	16	270	2	2	9	181	72	536	12	11	6
542,544,545,573-587	26	42	33	24	143	1	8	11	3	20	129	1	5	6
Nephritis and nephrosis . . . . .590-594	...	6	3	2	6	-	-	-	1	4	8	-	-	-
Other diseases of genito-urinary system . . . . .600-637	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Congenital malformations . . . . .750-759	42	25	48	12	8	2	-	1	1	-	32	-	3	-
Certain diseases of early infancy . . . . .760-776	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Senility, ill-defined and unknown . . . . .780-795	230	24	4	108	1,498	42	253	25	676	618	1,722	115	100	88
All other diseases . . . . .Residual	415	31	68	57	84	9	133	19	20	37	298	5	8	9
Accidents . . . . .E800-E962	167	555	245	514	28	27	49	51	73	1,218	37	30	22	-
Suicide and self-inflicted injury . . . . .E963,E970-E979	341	-	-	-	-	-	1	10	-	-	-	-	-	-
Homicide and operations of war . . . . .E964,E965,E980-E999	6	17	20	77	-	1	-	2	-	-	110	2	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(b) Data for Federal District and seven State capitals.

(c) Excluding Yukon and Northwest Territories.

(d) Year 1955.

(e) Capital cities of provinces.

(h) Detailed list numbers 250-252.

(i) Detailed list numbers 280-286.

TABLE D. NUMBER OF DEATHS OF CHILDREN 5-9 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Peru	United States	Uruguay	Venezuela	Alaska	Barbados	Bermuda	British Honduras	Canal Zone	Hawaii	Jamaica	Puerto Rico	Trinidad and Tobago	Virgin Is. (U.S.)	Wind. Is. St. Vin. (d)
	(a)	(d)	(d)		(d,f)						(g)	(d)			
Total deaths	3,346	8,440	126	1,975	18	15	2	28	2	30	344	362	89	2	15
Tuberculosis, all forms . . . . .001-019	202	62	3	59	1	-	-	-	-	-	4	17	3	-	-
Syphilis and its sequelae . . . . .020-029	1	1	-	3	-	-	-	-	-	-	-	1	-	-	-
Typhoid fever . . . . .040	60	2	-	11	-	-	-	-	-	-	7	-	2	-	-
Paratyphoid fever and other															
Salmonella infections . . . . .041,042	...	3	-	1	-	-	-	-	-	-	-	-	-	-	-
Dysentery, all forms . . . . .045-048	68	19	-	18	-	-	-	2	-	-	-	-	3	-	-
Scarlet fever and streptococcal sore throat . . . . .050,051	45	68	1	3	-	-	-	-	-	-	-	-	-	-	-
Diphtheria . . . . .055	4	47	3	6	-	-	-	-	-	-	1	1	1	-	-
Whooping cough . . . . .056	387	4	-	12	-	-	-	-	-	-	-	1	-	-	-
Meningococcal infections . . . . .057	4	73	-	-	-	-	-	057	-	-	1	2	-	-	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus . . . . .061	4	32	3	26	-	-	-	1	-	-	6	9	1	-	-
Yaws . . . . .073	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	9	148	7	3	1	-	-	-	-	1	5	2	-	-	-
Smallpox . . . . .084	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Measles . . . . .085	102	65	-	16	-	-	-	-	-	-	7	7	1	-	-
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Habies . . . . .094	...	-	-	5	-	-	-	-	-	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	46	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Malaria . . . . .110-117	69	-	-	2	-	-	-	-	-	-	22	-	3	-	-
Infestation by helminths . . . . .123-130	...	7	...	...	-	-	-	-	-	-	...	...	-	-	...
All other infective and parasitic diseases															
030-039,044,049,052-054,059,062-072,074,081-083,086-090,092,093,095,096,120-122,131-138	62	157	5	116	-	-	-	-	-	-	43	26	3	-	1
Malignant neoplasms, etc. . . . .140-205	15	1,335	16	36	1	1	-	-	-	3	5	12	4	1	-
Benign and unspecified neoplasms . . . . .210-239	4	124	3	7	-	-	-	-	-	-	1	1	-	-	-
Diseases of thyroid gland . . . . .250-254	...	3	-	1	-	-	-	-	-	-	2	-	-	-	-
Diabetes mellitus . . . . .260	1	51	-	2	-	-	-	-	-	-	-	1	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	24	...	-	79	-	-	-	1	1	-	7	17	1	-	-
Anaemias . . . . .290-293	66	66	-	14	-	-	-	-	-	-	1	3	8	-	-
Vascular lesions affecting central nervous system . . . . .330-334	9	100	2	2	-	-	-	-	-	2	1	7	2	-	-
Nonmeningococcal meningitis . . . . .340	86	80	2	32	2	-	-	-	-	1	3	5	1	1	-
Rheumatic fever . . . . .400-402	9	115	3	8	-	1	-	-	-	-	2	2	2	-	-
Diseases of the heart . . . . .410-443	33	103	1	12	1	-	-	-	-	-	12	8	-	-	-
Arteriosclerosis . . . . .450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other diseases of circulatory system . . . . .444-447,451-468	j) -	16	-	3	-	-	-	-	-	-	1	2	-	-	-
Influenza and pneumonia . . . . .480-483,490-493	640	479	7	100	1	4	1	3	-	-	32	26	9	-	4
Bronchitis . . . . .500-502	94	64	1	16	-	-	-	-	-	-	2	-	-	-	-
Other diseases of respiratory system . . . . .470-475,510-527	k) 14	213	3	9	1	-	-	-	-	-	2	3	1	-	-
Ulcer of stomach and duodenum . . . . .540,541	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Appendicitis . . . . .550-553	1	75	2	6	-	-	-	-	-	-	1	2	1	-	-
Intestinal obstruction & hernia . . . . .560,561,570	7	28	2	8	-	-	-	-	-	-	3	3	-	-	-
Gastritis, enteritis, etc. . . . .543,571,572	75	59	1	124	-	1	-	8	-	-	15	43	4	-	-
Other diseases of digestive system . . . . .530-539	...	114	2	16	-	-	-	-	-	1	9	5	4	-	-
542,544,545,573-587	...	114	2	16	-	-	-	-	-	1	9	5	4	-	-
Nephritis and nephrosis . . . . .590-594	25	181	6	48	-	2	-	1	-	3	7	23	1	-	1
Other diseases of genito-urinary system . . . . .600-637	...	28	1	2	-	-	-	-	-	-	1	2	-	-	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Congenital malformations . . . . .750-759	2	541	5	8	-	1	-	-	-	4	3	6	6	-	-
Certain diseases of early infancy . . . . .760-776	...	4	-	-	-	-	-	-	-	-	-	-	1	-	2
Senility, ill-defined and unknown . . . . .780-795	761	112	11	899	-	3	-	-	-	-	13	46	2	-	-
All other diseases . . . . .Residual	177	509	12	60	-	1	-	5	1	3	86	23	6	-	6
Accidents . . . . .E800-E962	184	3,285	24	199	9	1	1	7	-	12	37	56	19	-	1
Suicide and self-inflicted injury . . . . .E963,E970-E979	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Homicide and operations of war . . . . .E964,E965,E980-E999	6	57	-	2	1	-	-	-	-	-	2	-	-	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organisation, Geneva, 1948.

(a) Year 1953.

(g) Year 1954.

(d) Year 1955.

(j) Detailed list numbers 444-447.

(f) Data corrected for residence.

(k) Detailed list numbers 470-475.

TABLE E. NUMBER OF DEATHS OF CHILDREN 10-14 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956

Cause*	Argentina (a)	Brazil (b)	Canada (c)	Chile	Colombia	Costa Rica	Domi- can Republic (d)	Ecu- dor (d,e)	El Salvador (d)	Guatemala (d)	Mexico (d)	Nicar- agua	Pan- ama	Para- guay
Total deaths	1,407	598	706	906	2,649	123	344	212	529	1,749	6,670	166	149	114
Tuberculosis, all forms . . . . .001-019	84	26	7	90	68	5	17	19	12	41	172	1	3	2
Syphilis and its sequelae . . . . .020-029	-	1	-	-	1	-	2	-	2	-	7	-	1	-
Typhoid fever . . . . .040	-	2	-	9	49	-	14	10	2	15	241	3	-	-
Paratyphoid fever and other Salmonella infections . . . . .041,042	16	-	-	1	1	1	...	...	-	-	27	10	-	-
Dysentery, all forms . . . . .045-048	-	4	-	-	19	-	3	-	5	121	99	-	-	4
Scarlet fever and streptococcal sore throat . . . . .050,051	-	-	1	2	-	1	-	-	-	-	12	-	-	-
Diphtheria . . . . .055	4	2	-	18	8	-	1	4	-	2	36	-	-	1
Whooping cough . . . . .056	-	-	-	-	24	-	-	2	3	39	81	-	4	-
Meningococcal infections . . . . .057	2	1	4	6	1	-	-	-	-	1	2	-	-	-
Plague . . . . .058	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	-	1	-	-	-	-	...	...	-	-	-	-	-	-
Tetanus . . . . .061	...	15	-	6	33	2	...	...	8	3	60	8	3	3
Yaws . . . . .073	-	-	-	-	-	-	...	...	-	-	...	-	-	-
Acute poliomyelitis . . . . .080	34	2	5	5	5	-	-	-	1	2	14	-	-	-
Smallpox . . . . .084	-	1	-	-	4	-	-	-	-	-	-	-	-	-
Measles . . . . .085	-	2	3	5	51	-	2	1	16	44	229	3	7	2
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	...	4	-	-	5	-	-	-	-	1	5	-	-	1
Louse-borne epidemic typhus . . . . .100	-	-	-	-	-	-	-	1	-	...	30	-	-	-
Typhus, other forms . . . . .101-108	-	4	-	-	49	-	-	1	-	1	...	-	-	-
Malaria . . . . .110-117	-	-	-	-	56	2	35	5	34	289	651	25	5	1
Infestation by helminths . . . . .123-130	-	...	...	5	98	-	...	...	10	99	30	3	5	4
All other infective and parasitic diseases 030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	22	17	9	14	29	2	25	27	2	18	81	-	1	2
Malignant neoplasms, etc. . . . .140-205	50	54	88	39	34	7	2	1	2	6	75	1	5	5
Benign and unspecified neoplasms . . . . .210-239	15	7	8	6	12	1	1	1	-	-	26	1	1	1
Diseases of thyroid gland . . . . .250-254	...	-	-	-	1	-	...	...	2	-	h)	-	-	-
Diabetes mellitus . . . . .260	4	1	10	5	-	-	2	-	-	-	6	-	-	-
Avitaminoses and other metabolic diseases . . . . .280-289	-	5	3	1	47	2	...	...	12	24	i) 151	-	4	1
Anaemias . . . . .290-293	13	10	3	6	102	8	17	6	16	61	142	8	7	2
Vascular lesions affecting central nervous system . . . . .330-334	34	8	4	20	29	1	2	2	2	12	71	2	1	-
Nonmeningococcal meningitis . . . . .340	39	9	5	15	42	2	4	7	2	12	55	1	2	3
Rheumatic fever . . . . .400-402	-	47	14	35	9	7	-	1	-	2	13	-	3	2
Diseases of the heart . . . . .410-443	-	37	8	40	102	1	19	19	3	14	381	2	4	-
Arteriosclerosis . . . . .450	127	-	-	3	1	-	...	...	-	-	-	-	-	-
Other diseases of circulatory system . . . . .444-447,451-468	-	4	4	2	9	-	-	-	-	-	41	-	1	2
Influenza and pneumonia . . . . .480-483,490-493	79	66	34	158	159	8	21	16	19	214	710	9	10	7
Bronchitis . . . . .500-502	4	1	1	1	37	2	5	2	5	41	39	-	3	2
Other diseases of respiratory system . . . . .470-475,510-527	...	9	6	13	29	-	...	...	4	10	85	-	3	1
Ulcer of stomach and duodenum . . . . .540,541	-	2	-	2	3	-	-	1	-	1	6	-	-	-
Appendicitis . . . . .550-553	9	3	4	8	14	2	2	-	2	1	23	2	-	3
Intestinal obstruction & hernia . . . . .560,561,570	2	2	1	8	4	1	-	-	1	5	29	-	-	1
Gastritis, enteritis, etc. . . . .543,571,572	11	19	4	11	101	4	6	6	35	197	787	3	1	4
Other diseases of digestive system . . . . .530-539 542,544,545,573-587	...	20	7	24	93	2	2	7	48	39	217	15	12	2
Nephritis and nephrosis . . . . .590-594	37	15	17	15	48	3	5	11	-	11	64	1	3	2
Other diseases of genito-urinary system . . . . .600-637	...	3	4	1	2	1	-	-	-	2	5	-	1	-
Complications of pregnancy, childbirth and puerperium . . . . .640-689	6	-	-	6	3	7	1	-	1	-	9	-	-	-
Congenital malformations . . . . .750-759	6	11	33	11	11	1	-	-	-	-	6	-	1	1
Certain diseases of early infancy . . . . .760-776	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Senility, ill-defined and unknown . . . . .780-795	186	10	1	80	608	25	83	15	219	310	732	32	30	34
All other diseases . . . . .Residual	294	17	65	32	77	6	40	6	5	29	181	11	4	5
Accidents . . . . .E800-E962	-	142	340	171	390	19	29	40	42	72	873	22	22	15
Suicide and self-inflicted injury . . . . .E963, E970-E979	329	7	5	7	-	-	-	-	3	4	9	-	1	-
Homicide and operations of war . . . . .E964, E965, E980-E999	-	7	8	25	181	-	4	1	7	6	157	3	1	1

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.

(a) Year 1953.

(b) Data for Federal District and seven State capitals.

(c) Excluding Yukon and Northwest Territories.

(d) Year 1955.

(e) Capital cities of provinces.

(h) Detailed list numbers 250-252.

(i) Detailed list numbers 280-286.



TABLE E. NUMBER OF DEATHS OF CHILDREN 10-14 YEARS OF AGE FROM SPECIFIC CAUSES IN THE AMERICAS, 1956 (Continued)

Cause*	Peru (a)	United States (d)	Uruguay (d)	Venezuela (d,f)	Alaska (d,f)	Barbados	Bermuda	British Honduras	Canal Zone	Hawaii	Jamaica (g)	Puerto Rico (d)	Trinidad and Tobago	Virgin Is. (U.S.)	Wind. Is. St. Vin. (d)
Total deaths	1,785	6,320	120	835	14	16	2	10	2	21	189	178	72	4	12
Tuberculosis, all forms . . . . .001-019	159	36	4	25	-	-	-	-	-	-	9	10	2	-	-
Syphilis and its sequelae . . . . .020-029	1	1	1	1	-	-	-	-	-	-	2	-	-	-	-
Typhoid fever . . . . .040	61	2	-	5	-	-	-	-	-	-	1	-	-	-	1
Paratyphoid fever and other															
Salmonella infections . . . . .041,042	...	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Dysentery, all forms . . . . .045-048	31	8	1	12	-	-	-	-	-	-	-	-	-	-	-
Scarlet fever and streptococcal															
sore throat . . . . .050,051	10	22	1	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria . . . . .055	3	6	1	4	-	-	-	-	-	-	-	-	-	-	-
Whooping cough . . . . .056	63	1	-	-	-	-	-	-	-	-	1	-	-	-	-
Meningococcal infections . . . . .057	3	31	-	-	-	-	-	-	-	-	-	-	-	-	-
Plague . . . . .058	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leprosy . . . . .060	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus . . . . .061	10	13	2	19	-	-	-	1	-	-	3	5	2	-	-
Yaws . . . . .073	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis . . . . .080	5	134	-	2	-	-	-	-	-	-	4	1	-	-	-
Smallpox . . . . .084	18	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Measles . . . . .085	21	17	-	4	-	-	-	-	-	-	3	-	-	-	-
Yellow fever . . . . .091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rabies . . . . .094	...	1	-	2	-	-	-	-	-	-	-	-	-	-	-
Louse-borne epidemic typhus . . . . .100	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus, other forms . . . . .101-108	26	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Malaria . . . . .110-117	58	-	-	1	-	-	-	-	-	-	15	-	1	-	-
Infestation by helminths . . . . .123-130	...	2	-	-	-	-	-	-	-	-	-	-	-	-	-
All other infective and parasitic diseases															
030-039,044,049,052-054,059,062-072,074,081-083, 086-090,092,093,095,096,120-122,131-138	41	101	-	19	-	-	-	-	-	-	11	9	2	-	1
Malignant neoplasms, etc. . . . .140-205	6	790	11	26	1	-	-	-	-	4	3	7	4	-	-
Benign and unspecified neoplasms . . . . .210-239	4	86	4	5	-	1	-	-	-	-	-	-	-	-	-
Diseases of thyroid gland . . . . .250-254	...	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Diabetes mellitus . . . . .260	-	64	-	5	-	-	-	-	-	-	2	1	-	-	-
Avitaminoses and other metabolic															
diseases . . . . .280-289	3	...	-	14	-	-	-	-	-	-	1	3	1	-	-
Anaemias . . . . .290-293	33	48	-	7	-	-	-	-	-	1	1	2	2	-	-
Vascular lesions affecting central															
nervous system . . . . .330-334	13	109	1	3	-	-	-	-	-	-	-	1	-	-	1
Nonmeningococcal meningitis . . . . .340	46	50	2	11	-	-	-	-	-	-	2	3	1	-	-
Rheumatic fever . . . . .400-402	12	189	6	5	1	2	1	2	-	-	3	9	10	-	-
Diseases of the heart . . . . .410-443	43	143	1	16	-	4	-	1	-	3	16	5	7	-	-
Arteriosclerosis . . . . .450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other diseases of circulatory															
system . . . . .444-447,451-468	j) 2	39	-	4	-	-	-	-	-	-	-	1	-	-	-
Influenza and pneumonia . . . . .480-483,490-493	411	282	4	29	1	1	1	1	-	-	10	10	5	-	-
Bronchitis . . . . .500-502	15	12	-	1	-	1	-	-	-	-	-	2	1	-	-
Other diseases of respiratory															
system . . . . .470-475,510-527	k) 9	73	2	5	1	-	-	-	-	-	1	1	1	-	-
Ulcer of stomach and duodenum . . . . .540,541	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Appendicitis . . . . .550-553	2	59	2	3	-	-	-	-	-	-	2	3	1	-	-
Intestinal obstruction & hernia . . . . .560,561,570	8	11	1	4	-	1	-	1	-	-	1	2	1	-	-
Gastritis, enteritis, etc. . . . .543,571,572	14	23	-	18	-	-	-	2	-	-	6	10	1	-	-
Other diseases of digestive system . . . . .530-539	...	63	1	12	-	-	-	-	-	-	5	2	2	-	-
542,544,545,573-587	...	63	1	12	-	-	-	-	-	-	5	2	2	-	-
Nephritis and nephrosis . . . . .590-594	16	160	2	15	1	1	-	-	-	1	4	9	-	-	-
Other diseases of genito-urinary															
system . . . . .600-637	...	31	-	2	-	-	-	-	-	-	-	2	2	-	-
Complications of pregnancy,															
childbirth and puerperium . . . . .640-689	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Congenital malformations . . . . .750-759	-	278	3	4	-	-	-	-	-	2	1	6	1	-	1
Certain diseases of early infancy . . . . .760-776	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Senility, ill-defined and unknown . . . . .780-795	360	62	8	310	-	2	-	-	-	-	7	14	1	-	-
All other diseases . . . . .Residual	144	441	8	53	-	2	-	2	1	4	43	11	8	4	4
Accidents . . . . .E800-E962	126	2,814	40	170	8	1	-	-	1	6	30	46	15	-	2
Suicide and self-inflicted															
injury . . . . .E963, E970-E979	-	37	13	12	-	-	-	-	-	-	-	2	-	-	-
Homicide and operations															
of war . . . . .E964, E965, E980-E999	5	74	-	3	1	-	-	-	-	-	1	1	1	-	-

\*International Statistical Classification of Diseases, Injuries, and Causes of Death, World Health Organization, Geneva, 1948.  
 (a) Year 1953. (g) Year 1954.  
 (d) Year 1955. (j) Detailed list numbers 444-447.  
 (f) Data corrected for residence. (k) Detailed list numbers 470-475.



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