SUMMARY OF REPORTS ON THE HEALTH CONDITIONS IN THE AMERICAS

1950-1953

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PAN AMERICAN SANITARY BUREAU
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SUMMARY OF REPORTS ON HEALTH CONDITIONS IN THE AMERICAS
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EXPLANATION OF SYMBOLS

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

PREFACE

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

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

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

In addition to the material released in the document Summary of Reports of the Member States, 1950-1953 of the XIV Pan American Sanitary Conference, data were subsequently received from Puerto Rico, from nearly all of the territories and from Canada for incorporation into this final publication. Also minor corrections and additions were submitted by some of the governments in order that this publication would be complete. Thus this report contains all available information for the American Hemisphere.

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

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

The data in this report include information from the census and from vital statistics and case reporting systems, brief descriptions of communicable disease control programs, the number of personnel employed in health services, the organization of national health services and various aspects of sanitation programs. In view of the great interest shown by each one of the governments in completing the Four-Year Reports, the statistical data and the programs as described have been reproduced in this Summary. In a few instances editing and revision of rates were necessary for consistency. Also for a few areas the excellent descriptions of programs were too long for complete reproduction here and the reader is referred to the individual reports for complete descriptions of specific programs. The scope of the information requested was of necessity limited to selected basic data and many aspects of health programs were not covered. For example, additional

information regarding medical facilities, personnel, training facilities and other services being rendered would be useful for the consideration of these important phases of health programs.

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

CHAPTER I

POPULATION

Censuses were conducted in nearly all of the areas in or about 1950. Information from these censuses has been used to show the populations in the Americas, and the distribution of the population by age groups and in urban and rural areas. The distribution of population is important in considering health conditions and programs in the Americas.

Population at Latest Census and Estimated 1950 Population

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

The estimated midyear population in 1950 taken from the Four-Year Reports or from the publications of United Nations is presented in order to give a total population figure on a specific date. The estimated figure for the Western Hemisphere for 1950 was 326,415,000. Of this population, 216,443,000 lived in North America and 109,972,000 in South America. North America has been further subdivided into Northern America (Alaska, Canada, Greenland, St. Pierre and Miquelon, and United States) which had 165,110,000 and Middle America (the remainder of North America including the Caribbean) which had 51,333,000.

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

Population by Age Group

The populations by age group of the areas submitting these data from the recent census are given in Table 2 and the percentage distributions in Table 3. From this information it is evident that there are wide variations in age composition of the populations of the countries. In 13 countries, out of 19 countries submitting data, between 3.2 and 3.9 per cent of the population was under 1 year of age, with an additional 11.8 to 13.9 per cent 1-4 years of age. In fact, in 13 countries 15.3 per cent or more of the population was under 5 years of age. In the other 6 countries this percentage varied from 10.7 to 14.6. Likewise, in many countries high proportions of the population were children 5-9 and 10-14 years of age and the proportions of the population in the older age groups were small. In the 17 other areas providing detailed data by age the percentages of the population under 5 years of age were lower. In only 2 of the 17 did the percentages exceed 15.0 per cent.

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

(b) Although Greenland is here included in the Americas, the World Health Organization has assigned it to the European area pursuant to Resolution WHA6.46 of May, 1953.

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

In order to consider the variations in the age composition, the data are combined into four age groups and are presented in Table 4. In 13 of the 19 countries and in 4 of the 18 other areas with data available by age, over 40 per cent of the population was under 15 years of age. Health programs for this large child population are essential. The population of the age group 15-34 years includes an active segment of the population, and approximately one-third of the population was in this age group. In 9 of these countries and in 2 of the 4 other areas three-fourths or more of the population were under 35 years of age, and one-fourth or less of the population were 35 years of age and over. In an additional 7 countries and 6 other areas between 70.0 and 75.0 per cent of the population was under 35 years of age. In fact, in only two countries and 6 other areas were the percentages lower than 70.0. Thus nearly all the countries and several of the other areas of the Americas have a very young population and the health programs would be directed principally to the problems of infancy, childhood and young adult life.

Population of Urban and Rural Areas

The urban and rural compositions of the populations of the Americas vary widely. In Table 5 are quoted the definitions given of an urban area. In most countries the area consists principally of administrative centers and in many of the territories of specific cities. To recognize an area as urban, in 7 countries the lower limit of the population in these centers is specified, namely: in 3 it is 1,000; in one 1,500; in one 2,000; and in two countries, 3 territories and Puerto Rico, 2,500. The number and percentage of the population in urban and rural areas are also given in Table 5. The Americas are essentially rural, for in all but 5 countries and 3 territories more than half of the population lived in rural areas. Health programs have to be planned for large rural populations as well as for urban centers.

TABLE I
DATE AND POPULATION AT LATEST CENSUS, RATE OF INCREASE, AND ESTIMATED POPULATION FOR JULY 1, 1950, OF EACH AREA OF THE AMERICAS

Area	Day, month, and year of census	Population	Rate of increase (a, b)	Estimated 1950 midyear population
Grand Total	.	.	.	326 415 483
COUNTRY				
Total	.	.	.	319 254 457
Argentina	10. 5.1947	15 893 827	2.15	17 196 809
Bolivia	5. 9.1950	c) 3 019 031	1.16	3 019 031
Brazil	1. 7.1950	51 944 397	2.38	51 944 397
Canada	1. 6.1951	14 009 429	1.97	13 712 000
Chile	24. 4.1952	5 930 809	1.46	5 786 283
Colombia	9. 5.1951	11 545 372	2.03	11 333 380
Costa Rica	22. 5.1950	800 875	2.32	803 000
Cuba	28. 1.1953	b) 5 807 057	2.07	5 256 437
Dominican Republic	6. 8.1950	2 135 872	2.45	2 130 943
Ecuador	29.11.1950	3 202 757	...	b) 3 157 000
El Salvador	13. 6.1950	1 855 917	1.30	1 857 023
Guatemala	18. 4.1950	c) 2 788 122	1.15	2 802 729
Haiti	7. 8.1950	3 097 252	...	d) 3 080 000
Honduras	18. 6.1950	1 368 605	2.66	1 428 089
Mexico	6. 6.1950	25 791 017	2.68	25 825 836
Nicaragua	31. 5.1950	1 057 023	2.38	1 059 533
Panama (e)	10.12.1950	756 631	2.86	748 269
Paraguay	28.10.1950	1 405 627	...	1 396 842
Peru	9. 6.1940	6 207 967	1.31	8 103 519
United States	1. 4.1950	150 697 361	1.36	151 234 000
Uruguay	12.10.1908	1 042 668	1.53	2 397 844
Venezuela	26.11.1950	5 034 838	3.03	4 981 493
OTHER AREA				
Total	.	.	.	7 161 026
Alaska (U.S.)	1. 4.1950	128 643	5.61	137 000
Bahama Islands (Br.)	25. 4.1943	68 846	1.18	79 000
Barbados (Br.)	9. 4.1946	192 800	0.83	209 000
Bermuda (Br.)	10.1950	37 403	0.79	38 005
British Guiana (f)	9. 4.1946	359 379	1.17	406 000
British Honduras	9. 4.1946	59 220	0.96	67 430
Falkland Islands (Br.)	31. 3.1946	2 439	- 0.44	d) - 2 000
French Guiana	25. 5.1946	28 547	- 0.80	g) 28 595
Greenland (Dan.) (h)	31.12.1951	24 015	1.93	d) 23 000
Guadeloupe (Fr.)	25. 4.1946	278 864	- 0.90	g) 302 000
Hawaii (U.S.)	1. 4.1950	499 794	1.69	491 000
Jamaica (Br.)	4. 1.1943	1 237 063	1.70	1 402 900
Leeward Islands (Br.)	.	.	0.99	.
Antigua	9. 4.1946	40 778	...	45 072
Montserrat	9. 4.1946	14 333	...	13 535
St. Kitts - Nevis	9. 4.1946	46 243	...	47 615
Virgin Islands	9. 4.1946	6 505	...	g) 6 925
Martinique (Fr.)	16. 5.1946	261 595	0.61	g) 279 960
Netherlands Antilles	31.12.1930	71 769	...	161 000
Panama C.Z. (U.S.)	1. 4.1950	52 822	0.19	53 000
Puerto Rico (U.S.)	1. 4.1950	2 210 703	1.69	2 208 000
St. Pierre and Miq. (Fr.)	14. 5.1951	4 606	0.94	d) 4 000
Surinam (Nether.)	31.12.1921	107 723	...	219 000
Trinidad and Tobago (Br.)	9. 4.1946	557 970	2.04	632 450
Virgin Islands (U.S.)	1. 4.1950	26 665	0.69	27 000
Windward Islands (Br.)	.	.	.	.
Dominica	9. 4.1946	47 624	1.01	b) 54 000
Grenada	9. 4.1946	72 387	0.89	b) 77 000
St. Lucia	9. 4.1946	70 113	1.24	79 495
St. Vincent	9. 4.1946	61 647	1.69	67 044

(a) Rate is annual percentage increase from date of previous census.
(b) Data from United Nations Demographic Yearbook, 1953 and United Nations Monthly Bulletin of Statistics, June 1954.
(c) Provisional.
(d) PASB estimate.
(e) Excluding 48,654 tribal Indians.
(f) Amerindians excluded; in 1946 census estimated at 16,322.
(g) Given end of year population linearly interpolated by PASB.
(h) Pursuant to Resolution WHA6.46, Greenland is assigned to the European Area.

TABLE 2

POPULATION BY AGE GROUP ACCORDING TO RECENT CENSUS OF THE AMERICAS

Area	Day, month, year of census	Age group in years											
		Total	Under 1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Argentina	10. 5.1947	15 893 827	397 184	1 384 225	1 577 679	1 525 334	3 059 781	2 513 491	2 185 444	1 568 969	996 498	446 866	173 410	64 946
Brazil	1. 7.1950	51 944 397	1 915 760	6 455 120	7 015 527	6 308 567	10 493 454	7 377 317	5 429 572	3 561 367	2 001 812	875 686	393 483	116 732
Canada (a)	1. 6.1951	14 009 429	b) 353 875	b) 1 368 234	1 397 825	1 130 783	2 146 613	2 173 949	1 867 700	1 407 335	1 076 842	748 569	337 704	-
Colombia (c)	9. 5.1951	11 545 372	380 997	1 385 445	1 650 988	1 420 081	2 274 438	1 627 897	1 235 355	773 540	450 270	207 817	126 999	11 545
Costa Rica	22. 5.1950	800 875	30 263	102 372	112 156	98 289	161 301	106 694	83 222	52 272	30 631	15 694	7 407	574
Dominican Rep.	6. 8.1950	2 135 872	78 564	297 277	297 765	276 840	440 139	276 445	206 422	126 792	74 419	35 994	25 126	89
Ecuador	29.11.1950	3 202 757	117 798	415 440	455 019	371 433	606 206	434 260	326 809	223 914	137 495	69 848	43 688	847
El Salvador	13. 6.1950	1 855 917	69 134	219 920	250 178	224 169	375 981	252 752	201 459	132 429	73 820	34 905	19 964	1 206
Guatemala	7. 4.1940	3 283 209	105 076	408 852	486 179	430 907	619 392	452 046	345 986	212 414	133 764	55 097	30 306	3 190
Haiti	7. 8.1950	3 097 252	73 597	301 275	400 518	397 709	575 440	466 318	387 350	232 849	127 786	79 954	43 275	11 181
Honduras	18. 6.1950	1 368 605	50 698	164 964	177 786	162 136	262 991	184 425	142 122	101 304	67 799	33 484	20 896	-
Mexico	6. 6.1950	25 791 017	814 314	3 155 677	3 674 593	3 109 884	4 931 525	3 451 773	2 756 438	1 901 675	1 082 184	574 985	290 629	47 340
Nicaragua	31. 5.1950	1 057 023	40 674	128 236	154 529	134 039	209 866	143 595	106 868	69 860	39 156	18 471	11 729	-
Panama	10.12.1950	756 631	25 742	96 732	106 692	85 216	139 172	111 695	80 683	51 454	33 747	16 657	7 891	950
Paraguay (b)	28.10.1950	1 405 627	46 386	186 527	222 792	185 824	257 230	180 904	119 338	85 040	69 156	37 109	15 321	-
Peru	9. 6.1940	6 207 967	219 483	741 498	923 111	728 075	1 120 065	866 523	650 435	421 500	269 466	151 254	114 587	1 970
United States	1. 4.1950	150 697 361	3 146 948	13 016 623	13 199 685	11 119 268	22 098 426	23 759 267	21 450 359	17 342 653	13 294 595	8 414 885	3 854 652	-
Venezuela	26.11.1950	5 034 838	180 751	636 907	634 390	524 127	990 856	785 938	579 510	354 452	199 883	88 613	47 327	12 084
Alaska	1. 4.1950	128 643	15 579		10 644	7 858	27 986	26 447	18 517	10 656	6 214	3 414	1 328	-
Barbados	9. 4.1946	192 800	22 877		21 638	19 504	33 608	28 675	26 670	17 315	10 417	12 089		7
Bermuda	10.1950	37 403	950	3 913	3 988	3 342	6 338	5 771	4 924	3 632	2 267	1 383	795	100
British Guiana	9. 4.1946	359 379	11 468	38 868	45 064	39 478	66 704	51 267	42 241	29 829	19 616	10 847	3 680	317
British Honduras	9. 4.1946	59 220	22 730				26 383			10 000				107
French Guiana	25. 5.1946	28 547	2 130		3 984		d) 1 726	e) 12 782				1 428		6 497
Guadeloupe	25. 4.1946	278 864	32 980		62 627		d)29 103	e)142 072				12 082		-
Hawaii	1. 4.1950	499 794	12 611	51 380	51 794	40 352	94 264	92 574	66 273	44 049	26 078	14 399	6 020	-
Jamaica	4. 1.1943	1 237 063	30 977	125 388	156 079	139 842	231 564	200 850	149 614	92 037	58 610	32 637	19 124	341
Leeward Islands:														
Montserrat	9. 4.1946	14 333	1 913		1 917	1 912	2 741	1 690	1 557	991	758	498	355	1
St. Kitts-Nevis	9. 4.1946	46 243	1 434	4 746	5 525	5 119	8 282	7 019	5 797	3 510	2 407	1 495	909	-
Martinique	16. 5.1946	261 595	34 289		52 925		d)33 252		e)131 205			9 924		-
Puerto Rico	1. 4.1950	2 210 703	71 032	295 390	318 127	270 727	413 161	289 727	224 346	146 982	95 631	54 587	30 991	2
Trinidad & Tobago	9. 4.1946	557 970	18 541	64 351	68 115	54 008	100 405	88 004	68 421	43 807	26 763	18 174	7 381	-
Virgin Islands	1. 4.1950	26 665	763	3 103	3 685	2 877	3 941	3 507	2 746	2 202	1 830	1 378	633	-
Windward Islands:														
Dominica	9. 4.1946	47 624	6 575		6 212	5 650	8 781	6 467	5 057	3 911	2 707	1 490	762	12
St. Lucia	9. 4.1946	70 113	2 162	8 194	9 244	8 423	13 460	9 971	6 968	5 330	3 054	1 822	1 316	169
St. Vincent	9. 4.1946	61 647	2 328	7 090	9 538	8 317	11 421	7 504	5 870	3 963	2 733	1 751	1 125	7

(a) Including Yukon and Northwest Territories.
(b) Estimated.
(c) Percentages by age group in the 1938 census were applied to the total population of the 1951 census.
(d) Age group of 15-19 years.
(e) Age group of 20-64 years.

TABLE 3

PERCENTAGE OF POPULATION BY AGE GROUPS ACCORDING TO RECENT CENSUS OF THE AMERICAS

Area	Age group in years												
	Total	Under 1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	Unknown
Argentina	100.0	2.5	8.7	9.9	9.6	19.2	15.8	13.7	9.9	6.4	2.8	1.1	0.4
Brazil	100.0	3.7	12.4	13.5	12.1	20.2	14.2	10.4	6.9	3.9	1.7	0.8	0.2
Canada	100.0	2.5	9.8	10.0	8.1	15.3	15.5	13.3	10.0	7.7	5.3	2.4	-
Chile (a)	100.0	2.8	10.4	13.2	10.9	19.3	13.7	11.8	8.4	5.1	2.8	1.3	0.3
Colombia	100.0	3.3	12.0	14.3	12.3	19.7	14.1	10.7	6.7	3.9	1.8	1.1	0.1
Costa Rica	100.0	3.8	12.8	14.0	12.3	20.1	13.3	10.4	6.5	3.8	2.0	0.9	0.1
Dominican Rep.	100.0	3.7	13.9	13.9	13.0	20.6	12.9	9.7	5.9	3.5	1.7	1.2	0.0
Ecuador	100.0	3.7	13.0	14.2	11.6	18.9	13.5	10.2	7.0	4.3	2.2	1.4	0.0
El Salvador	100.0	3.7	11.8	13.5	12.1	20.3	13.6	10.8	7.1	4.0	1.9	1.1	0.1
Guatemala	100.0	3.2	12.4	14.8	13.1	18.9	13.8	10.5	6.5	4.1	1.7	0.9	0.1
Haiti	100.0	2.4	9.7	12.9	12.8	18.6	15.1	12.5	7.5	4.1	2.6	1.4	0.4
Honduras	100.0	3.7	12.1	13.0	11.8	19.2	13.5	10.4	7.4	5.0	2.4	1.5	-
Mexico	100.0	3.2	12.2	14.2	12.1	19.1	13.4	10.7	7.4	4.2	2.2	1.1	0.2
Nicaragua	100.0	3.9	12.1	14.6	12.7	19.8	13.6	10.1	6.6	3.7	1.8	1.1	-
Panama	100.0	3.4	12.8	14.1	11.3	18.4	14.7	10.7	6.8	4.5	2.2	1.0	0.1
Paraguay (b)	100.0	3.3	13.3	15.9	13.2	18.3	12.9	8.5	6.0	4.9	2.6	1.1	-
Peru	100.0	3.5	11.9	14.9	11.7	18.0	14.0	10.5	6.8	4.3	2.4	1.9	0.0
United States	100.0	2.1	8.6	8.8	7.4	14.7	15.8	14.2	11.5	8.8	5.6	2.5	-
Venezuela	100.0	3.6	12.7	12.6	10.4	19.7	15.6	11.5	7.0	4.0	1.8	0.9	0.2
Alaska	100.0	12.1		8.3	6.1	21.8	20.6	14.4	8.3	4.8	2.6	1.0	-
Barbados	100.0	11.9		11.2	10.1	17.4	14.9	13.8	9.0	5.4	6.3		-
Bermuda	100.0	2.5	10.5	10.7	8.9	16.9	15.4	13.2	9.7	6.1	3.7	2.1	0.3
British Guiana	100.0	3.2	10.8	12.5	11.0	18.6	14.3	11.7	8.3	5.5	3.0	1.0	0.1
British Honduras	100.0	38.4				44.5					16.9		0.2
French Guiana	100.0	7.5		13.9		c) 6.0		d) 44.8			5.0		22.8
Guadeloupe	100.0	11.8		22.5		c) 10.4		d) 51.0			4.3		-
Hawaii	100.0	2.5	10.3	10.4	8.1	18.9	18.5	13.2	8.8	5.2	2.9	1.2	-
Jamaica	100.0	2.5	10.1	12.6	11.3	18.7	16.2	12.1	7.5	4.8	2.6	1.6	0.0
Leeward Islands													
Montserrat	100.0	13.3		13.4	13.3	19.1	11.8	10.9	6.9	5.3	3.5	2.5	0.0
St. Kitts - Nevis	100.0	3.1	10.3	11.9	11.1	17.9	15.2	12.5	7.6	5.2	3.2	2.0	-
Martinique	100.0	13.1		20.2		c) 12.7		d) 50.2			3.8		-
Puerto Rico	100.0	3.2	13.4	14.4	12.2	18.7	13.1	10.1	6.7	4.3	2.5	1.4	0.0
Trinidad and Tobago	100.0	3.3	11.5	12.2	9.7	18.0	15.8	12.3	7.8	4.8	3.3	1.3	-
Virgin Islands	100.0	2.9	11.6	13.8	10.8	14.8	13.1	10.3	8.2	6.9	5.2	2.4	-
Windward Islands													
Dominica	100.0	13.8		13.1	11.9	18.4	13.6	10.6	8.2	5.7	3.1	1.6	0.0
St. Lucia	100.0	3.1	11.7	13.2	12.0	19.2	14.2	9.9	7.6	4.4	2.6	1.9	0.2
St. Vincent	100.0	3.8	11.5	15.5	13.5	18.5	12.2	9.5	6.4	4.4	2.9	1.8	0.0

(a) Distribution in a 2 per cent sample.

(b) Estimated.

(c) Age group of 15-19 years.

(d) Age group of 20-64 years.

TABLE 4

PERCENTAGE OF POPULATIONS BY SELECTED AGE GROUPS, ACCORDING TO RECENT CENSUS OF THE AMERICAS

Area	Total (a)	Under 15	15-34	35-54	55 or more	Under 35	35 or more
Argentina	100.0	30.9	35.2	23.7	10.2	66.1	33.9
Brazil	100.0	41.9	34.5	17.3	6.3	76.4	23.6
Canada	100.0	30.4	30.8	23.3	15.4	61.2	38.7
Chile (b)	100.0	37.3	33.0	20.2	9.5	70.3	29.7
Colombia	100.0	42.0	33.8	17.4	6.8	75.8	24.2
Costa Rica	100.0	42.9	33.5	16.9	6.7	76.4	23.6
Dominican Republic	100.0	44.5	33.6	15.6	6.3	78.1	21.9
Ecuador	100.0	42.5	32.5	17.2	7.8	75.0	25.0
El Salvador	100.0	41.2	33.9	18.0	6.9	75.1	24.9
Guatemala	100.0	43.6	32.7	17.0	6.7	76.3	23.7
Haiti	100.0	38.0	33.8	20.1	8.1	71.8	28.2
Honduras	100.0	40.6	32.7	17.8	8.9	73.3	26.7
Mexico	100.0	41.8	32.5	18.1	7.6	74.3	25.7
Nicaragua	100.0	43.3	33.4	16.7	6.6	76.7	23.3
Panama	100.0	41.6	33.2	17.5	7.7	74.8	25.2
Paraguay	100.0	45.6	31.2	14.5	8.7	76.8	23.2
Peru	100.0	42.1	32.0	17.3	8.6	74.1	25.9
United States	100.0	26.9	30.4	25.7	17.0	57.3	42.7
Venezuela	100.0	39.3	35.4	18.6	6.7	74.7	25.3
Alaska	100.0	26.5	42.4	22.7	8.4	68.9	31.1
Barbados	100.0	33.2	32.3	22.8	11.7	65.5	34.5
Bermuda	100.0	32.7	32.5	22.9	11.9	65.2	34.8
British Guiana	100.0	37.6	32.8	20.1	9.5	70.4	29.6
British Honduras	100.0	38.5	—— c) 44.6	d)—16.9 ——		...	...
French Guiana (e)	100.0	27.7	———— 72.3 ————			...	...
Guadeloupe	100.0	34.3	———— 65.7 ————			...	...
Hawaii	100.0	31.3	37.4	22.0	9.3	68.7	31.3
Jamaica	100.0	36.6	35.0	19.5	8.9	71.6	28.4
Leeward Islands							
Montserrat	100.0	40.0	30.9	17.8	11.3	70.9	29.1
St. Kitts - Nevis	100.0	36.4	33.1	20.1	10.4	69.5	30.5
Martinique	100.0	33.3	———— 66.7 ————			...	...
Puerto Rico	100.0	43.2	31.8	16.8	8.2	75.0	25.0
Trinidad and Tobago	100.0	36.7	33.8	20.1	9.4	70.5	29.5
Virgin Islands	100.0	39.1	27.9	18.5	14.5	67.0	33.0
Windward Islands							
Dominica	100.0	38.8	32.0	18.8	10.4	70.8	29.2
St. Lucia	100.0	40.1	33.5	17.6	8.8	73.6	26.4
St. Vincent	100.0	44.3	30.7	15.9	9.1	75.0	25.0

(a) Population of known age.

(b) Distribution in a 2 per cent sample.

(c) Age group 15-44 years.

(d) Age group 45-64 years.

(e) Population of unknown age accounted for 22.8 per cent of the total.

TABLE 5

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

Area	Year of census	Population		Per cent		Definition of Urban Area
		Urban	Rural	Urban	Rural	
Argentina	1947	9 932 133	5 961 694	62.5	37.5	Cities, towns and villages of 2 000 or more inhabitants.
Bolivia	1950	1 013 350	2 005 681	33.6	66.4	Administrative centers of departments, provinces and cantons (a).
Brazil	1950	18 782 891	33 161 506	36.2	63.8	An urban zone is an area containing certain number of dwellings, minimum of 30 for a village and 200 for a city.
Canada	1951	8 628 253	5 381 176	61.6	38.4	City, town or village of 1 000 population or over, whether incorporated or unincorporated, as well as any part of a census metropolitan area.
Chile	1952	3 536 878	2 393 931	59.6	40.4	Regular agglomeration with 1 000 or more inhabitants.
Colombia	1951	4 186 885	7 358 487	36.3	63.7	...
Costa Rica	1950	268 286	532 589	33.5	66.5	Demarcation based on first districts of cantons.
Cuba	1943	2 607 490	2 171 093	54.6	45.4	Population of cities and villages.
Dominican Republic	1950	508 408	1 627 464	23.8	76.2	Administrative centers of communes and municipal districts.
Ecuador	1950	913 932	2 288 825	28.5	71.5	Urban Parroquias.
El Salvador	1950	675 619	1 180 298	36.4	63.6	Administrative centers of municipios.
Guatemala	1950	861 283	1 926 839	30.9	69.1	Administrative centers of municipios.
Haiti	1950	393 123	2 704 129	12.7	87.3	Administrative centers of communes (a).
Honduras	1950	424 453	944 152	31.0	69.0	Centers with seat of administration of district or municipalidad.
Mexico	1950	10 983 483	14 807 534	42.6	57.4	Populated centers of more than 2 500 inhabitants (definition, census 1940) (a).
Nicaragua	1950	369 249	687 774	34.9	65.1	Seat of municipios and civil registers.
Panama	1950	289 680	466 951	38.3	61.7	Populated centers of 1 500 or more inhabitants having essentially urban characteristics (a).
Paraguay	1950	487 830	917 797	34.7	65.3	...
Peru	1940	2 240 348	3 967 619	36.1	63.9	Capitals of territorial units and agglomeration of urban character with population above average population of capitals.
United States	1950	88 927 464	61 769 897	59.0	41.0	Incorporated places of 2 500 population or more and specially defined places.
Venezuela	1950	2 484 891	2 549 947	49.4	50.6	Administrative centers or capitals of municipios with not less than 1 000 population.

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

(Continued)

TABLE 5

NUMBER AND PERCENTAGE OF POPULATION IN URBAN AND RURAL AREAS AND DEFINITION OF URBAN AREAS ACCORDING TO RECENT CENSUS IN THE AMERICAS
(Continued)

Area	Year of census	Population		Per cent		Definition of Urban Area
		Urban	Rural	Urban	Rural	
Alaska	1950	34 262	94 381	26.6	73.4	Places of 2 500 or more inhabitants.
Barbados	1946	76 437	116 363	39.6	60.4	Cities of Bridgetown and St. Michael.
British Guiana	1946	103 397	255 982	28.8	71.2	Cities of Georgetown and New Amsterdam. Excluded were 205 Indians in urban areas and 16 117 in rural areas.
British Honduras	1946	33 072	26 148	55.8	44.2	Places legally established as towns (a).
French Guiana	1946	10 961	17 586	38.4	61.6	...
Guadeloupe	1946	67 829	211 035	24.3	75.7	...
Hawaii	1950	344 869	154 925	69.0	31.0	Places of 2 500 or more inhabitants.
Jamaica	1943	225 467	1 011 596	18.2	81.8	Cities of Kingston, Suburban St. Andrew, Montego Bay and Spanish Town.
Leeward Islands:						
Antigua	1946	10 965	29 813	26.9	73.1	St. John's City.
Montserrat	1946	2 103	12 230	14.7	85.3	City of Plymouth.
Martinique	1946	88 607	172 988	33.9	66.1	Administrative centers of communes (a).
Puerto Rico	1950	894 813	1 315 890	40.5	59.5	Cities, towns and villages of 2 500 or more inhabitants.
Trinidad & Tobago	1946	129 704	428 266	23.2	76.8	Municipality of Port of Spain and Boroughs of San Fernando and Arima.
Virgin Islands (U.S.)	1950	15 581	11 084	58.4	41.6	Places of 2 500 or more inhabitants.
Windward Islands:						
St. Lucia	1946	12 852	57 261	18.3	81.7	Cities of Castries, Soufriere and Vieux-Fort.
St. Vincent	1946	14 766	46 881	24.0	76.0	City of Kingstown with suburbs.

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

CHAPTER II

VITAL STATISTICS

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

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

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

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

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

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

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

Birth Statistics

The numbers of live births with rates per 1,000 population are given in Table 6 for 21 countries, Puerto Rico and 22 territories for 1950-1953. The completeness of registration is known to vary; in some of the areas the rate would be higher if registration was complete. Also the exclusion of records of births for infants dying within 24 hours and variations in definitions and procedures affect the comparability of data. However, the data indicate that many of the American countries and other areas have high birth rates. In 1952, 10 countries and 5 territories had birth rates exceeding 40.0 per 1,000 population.

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

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

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

Fetal Death Statistics

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

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

At present, fetal deaths of 20 weeks or 28 weeks or more of gestation are registered. There is considerable variation in the Americas; however, in 12 countries and 4 other areas the minimum period of gestation[b] is 28 weeks.

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

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

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

TABLE 6

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	438 395	25.5	437 985	24.8	443 636	24.6	453 621	24.7
Bolivia	118 610	39.3	121 540	39.8	130 100	42.1	119 200	38.1
Brazil (a)	158 225	27.6	166 050	28.2	164 315	27.1	...	...
Canada (b)	371 071	27.1	380 101	27.1	402 527	27.9	416 825	28.2
Chile (c)	208 092	36.0	209 509	35.7	d)217 069	36.5	d)209 955	34.8
Colombia	413 721	36.5	419 384	36.2	436 406	36.8	471 019	38.9
Costa Rica	37 248	46.5	39 239	47.6	46 605	54.6	47 487	53.9
Dominican Republic	109 655	51.5	89 993	41.2	94 322	42.2	...	...
Ecuador	149 153	47.2	152 999	47.0	155 641	46.5	...	...
El Salvador	90 557	48.8	93 634	49.8	96 802	50.8	d) 98 184	50.9
Guatemala	141 673	50.5	151 416	52.5	151 865	51.0	...	...
Haiti	9 552	3.1	10 095	3.2	10 514	3.3	...	...
Honduras	57 636	40.4	60 691	41.3	60 646	40.1	...	...
Mexico	1 174 947	45.5	1 183 788	44.6	d)1 181 834	43.3	...	...
Nicaragua	43 618	41.2	44 989	41.2	48 337	42.8	49 367	42.4
Panama	24 858	33.2	24 818	32.4	29 013	36.9	30 098	37.4
Paraguay (e)	21 007	18.2	24 627	20.8	...	...	...	...
Peru	250 823	31.0	258 556	31.3	264 788	31.4	f)279 471	32.5
United States	3 554 149	23.5	g)3 750 850	24.5	f,g)3 846 986	24.7	h)3 909 000	24.7
Uruguay	44 748	18.7	45 281	18.6	...	...	...	...
Venezuela	212 096	42.6	224 553	43.9	230 688	44.0	246 396	45.8
Alaska	3 725	27.2	4 495	27.9	5 755	30.1	...	...
Bahama Islands	2 676	33.9	2 867	35.4	2 845	34.3	3 188	37.5
Barbados	6 432	30.8	6 793	31.9	7 291	33.6	7 304	33.0
Bermuda	1 138	29.9	1 043	27.2	1 095	28.3	983	25.0
British Guiana (i)	16 404	40.4	17 700	42.5	18 971	44.3	d)19 424	44.0
British Honduras	2 657	39.4	2 905	41.7	3 028	41.4	2 986	39.4
French Guiana	687	24.0	766	26.5	798	27.3	835	28.3
Guadeloupe	8 100	26.8	8 320	27.1	8 357	26.8	8 732	27.8
Hawaii	14 054	28.6	14 446	28.1	15 576	29.8	...	...
Jamaica	46 371	33.1	48 447	33.9	48 498	33.3	51 171	34.4
Leeward Islands:								
Antigua	1 654	36.7	1 733	37.4	1 612	33.9	1 687	34.5
Montserrat	406	30.0	436	32.1	423	31.1	424	31.0
St. Kitts - Nevis	1 682	35.3	1 741	35.3	1 832	36.3	1 964	37.8
Virgin Islands	227	32.8	282	39.9	310	42.9	317	43.0
Martinique	8 420	30.1	8 634	30.3	8 474	29.3	8 730	29.9
Puerto Rico	85 455	38.7	84 007	37.7	80 200	35.9	d)77 502	34.9
Surinam (h)	...	...	...	37.8	...	...	...	...
Trinidad & Tobago	23 722	37.5	23 804	36.7	22 924	34.5	...	...
Virgin Islands (U.S.)	894	33.1	953	38.1	862	35.9	...	...
Windward Islands:								
Dominica	1 848	34.2	1 965	35.7	2 091	37.3	...	...
Grenada	2 962	38.5	3 037	38.4	3 119	40.0	3 283	39.7
St. Lucia	2 820	35.5	2 892	35.7	2 906	35.3	3 069	36.6
St. Vincent	2 662	39.7	2 930	42.1	2 906	41.1	3 072	42.2

(a) Federal District and State Capitals, excluding City of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Adjusted for under-registration.
(d) Provisional.
(e) For reporting area, 83 per cent of population.
(f) Revised report.
(g) Based on a 50 per cent sample.
(h) Estimated.
(i) Excluding Amerindians and bush population.

TABLE 7

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	12 638	28.8	a) 12 527	28.6	12 511	28.2	12 747	28.1
Brazil (b)	11 710	74.0	12 368	74.5	12 351	75.2	...	...
Canada (c)	7 179	19.3	7 010	18.4	7 260	18.0	6 971	16.7
Chile (d)	7 426	35.7	7 011	33.5	7 038	32.4	7 011	33.4
Colombia (e)	6 155	14.9	6 588	15.7	6 501	14.9	7 669	16.3
Costa Rica	1 103	29.6	1 062	27.1	1 012	21.7	1 021	21.5
Dominican Republic	1 801	16.4	1 977	22.0	1 861	19.7	...	...
Ecuador	3 736	25.0	3 931	25.7	3 604	23.2	...	...
El Salvador	924	10.2	858	9.2	856	8.8	d) 850	8.7
Guatemala	4 225	29.8	4 472	29.5	4 651	30.6	...	...
Haiti	568	59.5	590	58.4	698	66.4	...	...
Honduras	300	5.2	241	4.0	178	2.9	...	...
Mexico	23 510	20.0	25 548	21.6	25 365	21.5	...	...
Nicaragua	95	2.2	84	1.9	76	1.6	40	0.8
Panama	353	14.2	441	17.8	379	13.1	459	15.3
Paraguay (f)	350	16.7	426	17.3	...	...	...	...
Peru	2 146	8.6	1 848	7.1	...	...	...	...
United States	68 262	19.2	70 569	18.8	70 447	18.3	...	...
Uruguay	1 291	28.9	1 192	26.3	...	...	...	...
Venezuela	4 373	20.6	4 861	21.6	4 994	21.6	5 064	20.6
Alaska	57	15.3	56	12.5	102	17.7	...	...
Barbados	196	30.5	198	29.1	177	24.3	152	20.8
Bermuda	34	29.9	30	28.8	30	27.4	29	29.5
British Guiana (g)	668	40.7	641	36.2	701	37.0	706	36.3
British Honduras	107	40.3	91	31.3	98	32.4	105	35.2
French Guiana	54	78.6	34	44.4	48	60.2	45	53.9
Guadeloupe	557	68.8	509	61.2	499	59.7	517	59.2
Hawaii	175	12.5	213	14.7	226	14.5	...	...
Leeward Islands:								
Antigua	71	42.9	41	23.7	55	34.1	61	36.2
Montserrat	16	39.4	18	41.3	13	30.7	9	21.2
St. Kitts - Nevis	55	32.7	59	33.9	66	36.0	78	39.7
Virgin Islands	4	17.6	4	14.2	8	25.8	9	28.4
Martinique	...	...	608	70.4	521	61.5	518	59.3
Puerto Rico	3 997	46.8	3 896	46.4	3 490	43.5	d) 3 270	42.2
Trinidad and Tobago	979	41.3	635	26.7	627	27.4	...	...
Virgin Islands (U.S.)	41	45.9	37	38.8	25	29.0	...	...
Windward Islands:								
Dominica	47	25.4	59	30.0	66	31.6	...	...
Grenada	131	44.2	98	32.3	98	31.4	74	22.5
St. Lucia	133	47.2	120	41.5	115	39.6	134	43.7
St. Vincent	75	28.2	107	36.5	105	36.1	97	31.6

(a) Estimated.
(b) Federal District and State Capitals, excluding the City of São Paulo.
(c) Excluding Yukon and Northwest Territories.
(d) Provisional.
(e) Still-births.
(f) For reporting area, 83 per cent of population.
(g) Excluding Amerindians and bush population.

Death Statistics

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

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

Infant Death Statistics

The completeness of registration of live births and infant deaths affects the size of infant death rates. The variations in definitions of these vital events mean that these rates lack comparability. However, infant death rates are essential for understanding the health problems in an area. The numbers of infant deaths with rates per 1,000 live births are given in Table 9 for 21 countries, Puerto Rico and 21 territories of the Americas.

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

Maternal Death Statistics

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

Table 10 gives the number of maternal deaths with rates per 1,000 live births in 20 countries, Puerto Rico and 16 territories of the Americas. The variation in these rates was great; in a few countries the rates were obviously high and in a few, low. These rates may fail to reflect the true situation in several areas.

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

TABLE 8

NUMBER OF DEATHS WITH RATES PER 1,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	154 826	9.0	155 043	8.8	156 593	8.7	160 015	8.7
Bolivia	42 925	14.2	40 875	13.4	48 326	15.6	45 382	14.5
Brazil (a)	93 761	16.4	98 249	16.7	95 317	15.7	...	...
Canada (b)	123 789	9.0	125 454	9.0	125 950	8.7	127 381	8.6
Chile	90 081	15.6	90 819	15.5	c) 81 642	13.7	c) 79 623	13.2
Colombia	160 378	14.2	165 169	14.3	153 738	13.0	163 653	13.5
Costa Rica	9 769	12.2	9 631	11.7	9 902	11.6	10 312	11.7
Dominican Republic	21 303	10.0	21 731	10.0	22 515	10.1	...	...
Ecuador	55 986	17.7	55 931	17.2	56 858	17.0	...	...
El Salvador	27 454	14.8	29 030	15.4	32 423	17.0	c) 29 987	15.5
Guatemala	61 234	21.8	56 550	19.6	71 994	24.2	...	...
Haiti	974	0.3	1 059	0.3	1 216	0.4	...	...
Honduras	17 073	12.0	16 529	11.2	19 148	12.7	...	...
Mexico	418 430	16.2	458 238	17.3	402 542	14.8	...	...
Nicaragua	11 466	10.8	10 085	9.2	11 956	10.6	11 317	9.7
Panama	7 169	9.6	6 824	8.9	6 776	8.6	7 320	9.1
Paraguay (d)	7 545	6.5	8 279	7.0	...	...	...	...
Peru	97 111	12.0	104 348	12.6	94 672	11.2	e) 94 435	11.0
United States	1 452 454	9.6	1 482 099	9.7	1 496 838	9.6	1 519 000	9.6
Uruguay	19 199	8.0	19 190	7.9	...	...	...	...
Venezuela	54 475	10.9	56 767	11.1	56 548	10.8	55 476	10.3
Alaska	1 253	9.1	1 365	8.5	1 264	6.6	...	...
Bahama Islands	1 287	16.3	1 091	13.5	...	...	1 035	12.2
Barbados	2 688	12.9	3 000	14.1	3 186	14.7	2 996	13.6
Bermuda	340	8.9	412	10.7	316	8.2	333	8.5
British Guiana (f)	5 938	14.6	5 637	13.5	5 772	13.5	5 876	13.3
British Honduras	845	12.5	801	11.5	794	10.9	816	10.8
French Guiana	465	16.3	422	14.6	463	15.8	413	14.0
Guadeloupe	3 388	11.2	3 406	11.1	3 348	10.7	2 960	9.4
Hawaii	2 919	5.9	2 877	5.6	2 887	5.5	...	...
Jamaica	16 556	11.8	17 233	12.1	16 717	11.5	15 465	10.4
Leeward Islands:								
Antigua	539	12.0	605	13.1	526	11.1	599	12.2
Montserrat	197	14.6	177	13.0	148	10.9	203	14.8
St. Kitts - Nevis	787	16.5	711	14.4	647	12.8	683	13.1
Virgin Islands	68	9.8	84	11.9	70	9.7	83	11.3
Martinique	3 205	11.4	3 358	11.8	3 147	10.9	2 340	8.0
Puerto Rico	21 917	9.9	22 371	10.0	20 504	9.2	c) 17 975	8.1
Surinam (f)	...	...	...	9.7	...	...	...	...
Trinidad and Tobago	7 665	12.1	7 815	12.0	8 000	12.1	...	...
Virgin Islands (U.S.)	374	13.9	375	15.0	346	14.4	...	...
Windward Islands:								
Dominica	948	17.6	874	15.9	1 108	19.8	...	...
Grenada	1 056	13.7	1 276	16.2	1 255	16.1	1 084	13.1
St. Lucia	1 184	14.9	1 389	17.2	1 246	15.1	1 156	13.8
St. Vincent	1 023	15.3	983	14.1	1 112	15.7	1 127	15.5

(a) Federal District and State Capitals, excluding the City of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) For reporting area, 83 per cent of population.
(e) Revised report.
(f) Excluding Amerindians and bush population.

TABLE 9

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	30 936	70.6	30 136	68.8	29 945	67.5	30 166	66.5
Bolivia	12 895	108.7	16 783	138.1	24 010	184.6	21 784	182.8
Brazil (a)	25 692	162.4	28 868	173.9	28 414	172.9	...	...
Canada (b)	15 324	41.3	14 584	38.4	15 303	38.0	14 764	35.4
Chile	28 345	136.2	27 551	131.5	c) 26 449	121.8	c) 24 819	118.2
Colombia	51 258	123.9	50 284	119.9	48 309	110.7	52 300	111.0
Costa Rica	3 358	90.2	3 420	87.2	3 739	80.2	3 956	83.3
Dominican Republic	6 952	63.4	7 112	79.0	7 425	78.7	...	...
Ecuador	16 367	109.7	16 756	109.5	...	...	...	...
El Salvador	7 353	81.2	7 172	76.6	8 276	85.5	c) 8 020	81.7
Guatemala	15 243	107.6	13 936	92.0	17 036	112.2	...	...
Haiti	406	42.5	469	46.5	518	49.3	...	...
Honduras	4 932	85.6	3 330	54.9	3 900	64.3	...	...
Mexico	113 032	96.2	116 957	98.8	106 047	89.7	...	...
Nicaragua	3 578	82.0	3 166	70.4	3 747	77.5	3 704	75.0
Panama	1 704	68.5	1 536	61.9	1 462	50.4	1 585	52.7
Paraguay (d)	2 144	102.1	2 161	87.7	...	...	...	...
Peru	26 007	103.7	27 044	104.6	26 496	100.0	...	...
United States	103 825	29.2	106 702	28.4	109 413	28.4	109 100	27.9
Uruguay	2 875	64.2	2 478	54.7	...	...	...	...
Venezuela	16 911	79.7	17 675	78.7	17 231	74.7	17 340	70.4
Alaska	193	51.8	238	52.9	229	39.8	...	...
Bahama Islands	288	107.6	244	85.1	245	86.1	204	64.0
Barbados	805	125.2	927	136.5	1 061	145.5	1 012	138.6
Bermuda	49	43.1	e) 73	70.0	42	38.4	30	30.5
British Guiana (f)	1 395	85.0	1 360	76.8	1 551	81.8	1 207	62.1
British Honduras	284	106.9	275	94.7	237	78.3	260	87.1
Guadeloupe	700	86.4	537	64.5	613	73.4	490	56.1
Hawaii	337	24.0	343	23.7	331	21.3	...	...
Jamaica	3 630	78.3	3 931	81.1	3 638	75.0	3 241	63.3
Leeward Islands:								
Antigua	133	80.4	133	76.7	113	70.1	158	93.7
Montserrat	49	120.7	55	126.1	38	89.8	48	113.2
St. Kitts - Nevis	183	108.8	158	90.8	150	81.9	166	84.5
Virgin Islands	31	136.6	14	49.6	41	132.3	27	85.2
Martinique	...	...	599	69.4	501	59.1	467	53.5
Puerto Rico	5 835	68.3	5 635	67.1	5 339	66.6	c) 4 893	63.1
Surinam (f)	...	...	...	45.4	...	...	...	...
Trinidad and Tobago	1 905	80.3	1 860	78.1	2 042	89.1	...	...
Virgin Islands (U.S.)	51	57.0	55	57.7	46	53.4	...	...
Windward Islands:								
Dominica	265	143.4	249	126.7	320	153.0	...	...
Grenada	267	90.1	321	105.7	302	96.8	222	67.6
St. Lucia	325	115.2	388	134.2	343	118.0	347	113.1
St. Vincent	291	109.3	292	99.7	364	125.3	378	123.0

(a) Federal District and State Capitals, excluding the City of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) For reporting area, 83 per cent of population.
(e) Epidemics of whooping cough.
(f) Excluding Amerindians and bush population.

TABLE 10

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	651	1.5	a) 632	1.4	621	1.4	635	1.4
Bolivia	989	8.3	1 230	10.1	2 020	15.5	1 896	15.9
Brazil (b)	636	4.0	634	3.8	707	4.3	...	...
Canada (c)	420	1.1	405	1.1	374	0.9	324	0.8
Chile	694	3.3	681	3.3	d) 721	3.3	d) 723	3.4
Colombia	1 603	3.9	1 508	3.6	1 524	3.5	1 725	3.7
Costa Rica	101	2.7	100	2.5	80	1.7	100	2.1
Dominican Republic	193	1.8	163	1.8	124	1.3	...	...
El Salvador	213	2.4	227	2.4	183	1.9	d) 227	2.3
Guatemala	538	3.8	536	3.5	551	3.6	...	...
Haiti	191	20.0	229	22.7	125	11.9	...	...
Honduras	220	3.8	254	4.2	247	4.1	...	...
Mexico	3 235	2.8	3 089	2.6	d) 2 956	2.5	...	...
Nicaragua	53	1.2	86	1.9	80	1.7	94	1.9
Panama	80	3.2	57	2.3	80	2.8	88	2.9
Paraguay (e)	74	3.5	117	4.8	...	...	...	...
Peru	1 047	4.2	951	3.7	1 100	4.2	...	...
United States	2 960	0.8	2 812	0.7	2 610	0.7	f) 2 170	0.6
Uruguay	73	1.6	77	1.7	...	...	...	...
Venezuela (g)	684	3.2	848	3.8	649	2.8	560	2.3
Alaska	10	2.7	3	0.7	5	0.9	...	...
Barbados	21	3.3	35	5.2	23	3.2	26	3.6
Bermuda	2	1.8	2	1.9	2	1.8	4	4.1
British Guiana (h)	82	5.0	82	4.6	87	4.6	101	5.2
British Honduras (i)	5	1.9	4	1.4	-	-	7	2.3
Hawaii	8	0.6	10	0.7	9	0.6	...	...
Jamaica (g)	163	3.5	157	3.2	158	3.3	...	...
Leeward Islands:								
Antigua	7	4.2	...	...	6	3.7	5	3.0
Montserrat	3	7.4	1	2.3	-	-	-	-
St. Kitts - Nevis	4	2.4	7	4.0	5	2.7	9	4.6
Virgin Islands	1	4.4	2	7.1	-	-	-	-
Martinique	...	...	14	1.6	20	2.4	15	1.7
Puerto Rico	208	2.4	183	2.2	149	1.9	d) 133	1.7
Trinidad and Tobago	93	3.9	118	5.0	82	3.6	...	...
Virgin Islands (U.S.)	4	4.5	1	1.0	-	-	...	...
Windward Islands:								
Grenada	-	-	-	-	-	-	5	1.5
St. Lucia	7	2.5	18	6.2	13	4.5	4	1.3

(a) Estimated.
(b) Federal District and State Capitals, excluding the City of São Paulo.
(c) Excluding Yukon and Northwest Territories.
(d) Provisional.
(e) For reporting area, 83 per cent of population.
(f) Based on a 10 per cent sample of death certificates.
(g) Ill-defined causes of death distributed to defined causes.
(h) Excluding Amerindians.
(i) District of Belize.

Principal Causes of Death

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

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

A summary of the principal causes given in these areas of the Americas is presented in Table 12. The leading cause of death in 8 of the 17 countries was specified as gastro-enteritis or diarrhea or the group of intestinal diseases. The fact that gastro-intestinal diseases lead as a principal cause of death shows the need of emphasis on environmental sanitation. The group, influenza and pneumonia was leading in five countries and heart disease or diseases of the circulatory system in three countries. Malaria and cancer were leading causes in the other two countries. Heart disease or diseases of the circulatory system appeared as one of the five principal causes of death in 13 countries and gastro-enteritis or diarrhea in 12 countries. Tuberculosis was one of the principal causes in 10 countries and malaria in 6 countries.

In the 16 other areas providing data on the principal causes of death gastro-enteritis or diarrhea was the leading cause in two and appeared in the first five in 10 countries. Heart disease or diseases of the circulatory system and certain diseases of early infancy were the principal causes in 6 of these areas. The data on principal causes show that communicable diseases appeared frequently among the leading causes of death and that the prevention of such deaths would result in a reduction of mortality.

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

TABLE II

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

Area and Causes of Death	Number	Rate
ARGENTINA - All causes	156 593	867.4
Diseases of circulatory system	36 288	201.0
Cancer and tumors	21 665	120.0
Vascular lesions	12 457	69.0
Violent deaths and accidents	8 485	47.0
Tuberculosis	7 944	44.0
BOLIVIA - All causes	48 326	1 564.2
Influenza and pneumonia	3 947	127.8
Malaria	1 980	64.1
Diarrhea and enteritis	1 799	58.2
Tuberculosis	1 651	53.4
Dysentery	624	20.2
BRAZIL (a) - All causes	95 317	1 572.2
Diseases of digestive system	18 522	305.5
Diseases of circulatory system	11 907	196.4
Tuberculosis	9 402	155.1
Diseases of respiratory system	7 749	127.8
Diseases peculiar to first year of life	6 459	106.5
CANADA (b, c) - All causes	125 950	874.3
Diseases of heart (400-443)	40 911	284.0
Malignant Neoplasms, etc. (140-205).	18 589	129.0
Vascular lesions, etc. (330-334)	13 348	92.7
Accidents (E800-E962)	8 541	59.3
Certain diseases of early infancy (760-776)	7 719	53.6
CHILE (d) - All causes	81 642	1 373.2
Respiratory diseases and influenza	15 294	257.2
Diseases of digestive system	10 204	171.6
Cardiovascular diseases	8 844	148.8
Diseases of early infancy	8 542	143.7
Tuberculosis, all forms	6 564	110.4
COLOMBIA (e) - All causes	153 738	1 306.4
Diarrhea and enteritis (119-120)	15 335	129.5
Pneumonia, all forms (107-109)	10 617	89.6
Congenital malformations and diseases peculiar to first year of life (157-161)	8 497	71.7
Diseases of the heart (90-95)	7 529	63.6
Bronchitis (106)	7 043	59.5
COSTA RICA (c, d) - All causes	9 902	1 160.3
Gastro-enteritis and colitis and diarrhea of newborn (571, 572,764.0)	1 455	170.5
Certain diseases of circulatory system (410, 420-468)	655	76.8
Malignant neoplasms, etc. (140-205).	646	75.7
Bronchopneumonia and bronchitis (491, 500-502)	637	74.6
Diseases of nervous system (330-357)	423	49.6
DOMINICAN REPUBLIC - All causes	22 515	1 006.8
Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn	2 754	123.1
Malaria	2 239	100.1
Infections of newborn and other diseases peculiar to early infancy, and immaturity unqualified	1 755	78.5
Tuberculosis of respiratory system	1 301	58.2
Bronchitis	1 111	49.7
EL SALVADOR (c) - All causes	32 423	1 701.8
Gastritis, duodenitis, enteritis and colitis, except diarrhea of newborn (543, 571, 572)	6 614	347.1
Malaria (110-117)	1 370	71.9
Pneumonia (490-493)	1 082	56.8
Avitaminosis and other deficiency states and anemias (280-286, 290-293)	900	47.2
Bronchitis (500-502)	745	39.1
GUATEMALA - All causes	71 994	2 419.9
Diarrhea and gastro-enteritis	8 864	297.9
Bronchitis and pneumonia	7 874	264.7
Malaria	6 947	233.5
Whooping cough	5 921	199.0
Diseases due to helminths	5 812	195.4
HONDURAS - All causes	19 148	1 265.8
Malaria	3 178	210.1
Intestinal infections	1 428	94.4
Influenza and pneumonia	985	65.1
Dropsy	843	55.7
Diarrhea	802	53.0
MEXICO (c) - All causes	402 542	1 475.4
Gastro-enteritis and colitis (571, 572)	67 505	247.4
Pneumonia (490-493)	55 660	203.9
Infections of newborn and ill-defined diseases of early infancy (763-768, 773-776)	28 318	103.8
Malaria (110-117)	22 050	80.8
Disease of heart excluding hypertension with heart disease (410-434)	20 921	76.8

(Continued)

TABLE II

FIRST FIVE PRINCIPAL CAUSES OF DEATH WITH RATES PER 100,000 POPULATION FOR THE AMERICAS, 1952 (Continued)

Area and Causes of Death	Number	Rate
PANAMA (c) - All causes	6 776	862.9
Pneumonia (490-493)	478	60.9
Gastro-enteritis and colitis, except ulcerative (571)	465	59.2
Tuberculosis (001-019)	422	53.7
Violent deaths and accidents (E800-E999)	366	46.6
Diseases of heart, excluding chronic rheumatic heart disease and hypertension with heart disease (420-434)	346	44.1
PARAGUAY (f, g) - All causes	8 279	699.8
Influenza and pneumonia	710	60.0
Tuberculosis, all forms	391	33.1
Cancer	318	26.9
Diseases of heart	290	24.5
Syphilis	277	23.4
PERU (c) - All causes	94 672	1 123.3
Influenza and pneumonia (480-493)	16 820	199.4
Whooping cough (056)	7 573	89.9
Certain diseases of early infancy	6 658	79.0
Tuberculosis, all forms (001-019)	5 896	70.0
Diseases of circulatory system (400-468)	4 105	48.7
UNITED STATES (c) - All causes	1 496 838	961.0
Diseases of heart (410-443)	555 141	356.4
Malignant neoplasms, etc. (140-205)	223 277	143.4
Vascular lesions, etc. (330-334)	166 331	106.8
Accidents (E800-E962)	96 172	61.7
Certain diseases of early infancy (760-776)	63 659	40.9
URUGUAY (e, f) - All causes	19 190	786.8
Cancer (45-55)	3 351	137.4
Diseases of circulatory system (90-103)	3 300	135.3
Intracranial lesions of vascular origin (83)	1 810	74.2
Tuberculosis, all forms (13-22)	1 299	53.3
Bronchitis and pneumonia (106-109)	1 118	45.8
VENEZUELA (c, h) - All causes	56 548	1 078.0
Gastritis, duodenitis, enteritis and colitis except diarrhea of newborn (543, 571-572)	9 571	182.5
Tuberculosis, all forms (001-019)	5 883	112.2
Certain diseases of early infancy (760-776)	5 781	110.2
Diseases of heart (410-443)	4 751	90.6
Malignant neoplasms, etc. (140-205)	4 531	86.4
. . . . .		
ALASKA (c) - All causes	1 264	661.8
Accidents (E800-E962)	266	139.3
Diseases of heart (410-443)	213	111.5
Tuberculosis (001-019)	173	90.6
Certain diseases of early infancy (760-776)	96	50.3
Vascular lesions, etc. (330-334)	74	38.7
BARBADOS - All causes	3 186	1 475.0
Diseases of early infancy	630	291.6
Diseases of circulatory system	621	287.5
Diseases of respiratory system	389	180.1
Infective and parasitic diseases	295	136.6
Diseases of digestive system	271	125.5
BERMUDA - All causes	316	815.3
Heart disease and hypertension	109	281.2
Vascular lesions	49	126.4
Cancer	40	103.2
Pneumonia	9	23.2
BRITISH GUIANA (c) - All causes	5 772	1 346.5
Certain diseases of early infancy (760-776)	711	165.9
Pneumonia and bronchitis (490-495, 500-502)	666	155.4
Gastro-enteritis and colitis (571, 572)	565	131.8
Diseases of heart (410-443)	506	118.0
Vascular lesions, etc. (330-334)	274	63.9
HAWAII (c) - All causes	2 887	553.1
Diseases of heart (410-443)	921	176.4
Malignant neoplasms, etc. (140-205)	437	83.7
Vascular lesions, etc. (330-334)	273	52.3
Certain diseases of early infancy (760-776)	192	36.8
Accidents (E800-E962)	186	35.6
JAMAICA (h) - All causes	16 717	1 147.4
Diseases of heart	990	67.9
Tuberculosis	770	52.8
Malignant neoplasms	682	46.8
Malaria	675	46.3
Pneumonia, bronchopneumonia	671	46.1

(Continued)

TABLE II

FIRST FIVE PRINCIPAL CAUSES OF DEATH WITH RATES PER 100,000 POPULATION FOR THE AMERICAS, 1952 (Continued)

Area and Causes of Death	Number	Rate
LEEWARD ISLANDS		
ANTIGUA (c) - All causes	526	1 105.6
Diseases of heart (410-443)	95	199.7
Diseases of respiratory system (470-527)	55	115.6
Vascular lesions, etc. (330-334)	49	103.0
Certain diseases of early infancy (760-776)	45	94.6
Gastro-enteritis and colitis (571, 572)	36	75.7
LEEWARD ISLANDS		
MONTSERRAT (c) - All causes	148	1 089.3
Arteriosclerotic, degenerative heart (420-422)	22	161.9
Other defined diseases of early infancy (769, 771, 772)	13	95.7
Syphilis, all forms (020-029)	11	81.0
Vascular lesions, etc. (330-334)	11	81.0
LEEWARD ISLANDS		
ST. KITTS - NEVIS (c) - All causes	647	1 283.2
Gastro-enteritis and colitis (571, 572)	74	146.8
Diseases of early infancy (751-794)	71	140.8
Diseases of heart (410-443)	66	130.9
Vascular lesions, etc. (330-334)	60	119.0
Avitaminosis and other deficiency states (280-286)	48	95.2
PUERTO RICO (c) - All causes	20 504	918.2
Gastro-enteritis, colitis and diarrhea (571-572, 764, 785-786)	2 585	115.8
Diseases of heart (410-443)	2 401	107.5
Tuberculosis (001-019)	2 092	93.7
Malignant neoplasms, etc. (140-205)	1 435	64.3
Pneumonia (490-493)	1 396	62.5
TRINIDAD AND TOBAGO - All causes	8 000	1 205.5
Diseases of early infancy	1 004	151.3
Cardiac, valvular diseases	932	140.4
Diarrhea and enteritis	620	93.4
Bronchitis and bronchopneumonia	583	87.9
Vascular lesions	489	73.7
VIRGIN ISLANDS (U.S.) (c) - All causes	346	1 441.7
Diseases of heart (410-443)	117	487.5
Certain diseases of early infancy (760-776)	25	104.2
Malignant neoplasms, etc. (140-205)	23	95.8
Influenza and pneumonia (480-493)	18	75.0
Vascular lesions, etc. (330-334)	15	62.5
WINDWARD ISLANDS		
DOMINICA - All causes	1 108	1 978.6
Avitaminosis	250	446.4
Gastro-enteritis and colitis	108	193.9
Tuberculosis	64	114.3
Diseases of heart and circulatory system	55	98.2
Bronchopneumonia	40	71.4
WINDWARD ISLANDS		
GRENADA - All causes	1 255	1 609.0
Certain diseases of early infancy	246	315.4
Diseases of circulatory system	98	125.6
Bronchopneumonia	79	101.3
Malaria	54	69.2
Diarrhea, enteritis	46	59.0
WINDWARD ISLANDS		
ST. LUCIA - All causes	1 246	1 512.9
Diseases of early infancy	228	276.8
Diseases of heart	191	231.9
Malaria	109	132.3
Diarrhea and enteritis	77	93.5
Tuberculosis	76	92.3
WINDWARD ISLANDS		
ST. VINCENT (c) - All causes	1 112	1 571.4
Certain diseases of early infancy (769, 771-776, 794)	180	254.4
Bronchitis (500-502)	130	183.8
Avitaminosis and other deficiency states (280-286)	100	141.3
Gastro-enteritis and colitis (571, 572)	97	137.1
Tuberculosis resp. system (001-008)	41	57.9

(a) Federal District and State Capitals, excluding City of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Classification of Sixth Revision, 1948, International Statistical Classification of Diseases, Injuries and Causes of Death.
(d) Provisional.
(e) Classification of Fifth Revision, 1938, of International List of Causes of Death.
(f) Year 1951.
(g) Area with 83 per cent of total population.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 12

SUMMARY OF FIRST FIVE PRINCIPAL CAUSES OF DEATH BY RANK ORDER FOR 18 COUNTRIES, PUERTO RICO AND 15 TERRITORIES OF THE AMERICAS, 1952

Cause of Death	Total	Number of areas by rank order of cause of death				
		First	Second	Third	Fourth	Fifth
COUNTRIES						
Heart disease or circulatory system.....	13	3	3	1	3	3
Gastro-enteritis or diarrhea (a).....	12	8	2	1	-	1
Influenza and pneumonia (b).....	10	5	2	2	1	-
Tuberculosis.....	10	-	2	2	4	2
Certain diseases of early infancy.....	9	-	-	5	1	3
Cancer.....	7	1	3	2	-	1
Bronchitis (c).....	6	-	1	-	1	4
Malaria.....	6	1	3	1	1	-
Vascular lesions, etc. (d).....	5	-	-	4	-	1
Accidents or external causes.....	4	-	-	-	4	-
Whooping cough.....	2	-	1	-	1	-
Avitaminosis and anaemias.....	1	-	-	-	1	-
Other causes (e).....	5	-	1	-	1	3
OTHER AREAS						
Heart disease or circulatory system.....	15	6	6	1	2	-
Gastro-enteritis or diarrhea (a).....	10	2	1	2	2	3
Influenza and pneumonia (b).....	11	-	2	2	4	3
Tuberculosis.....	6	-	1	3	-	2
Certain diseases of early infancy.....	11	6	3	-	2	-
Cancer.....	5	-	1	3	1	-
Bronchitis (c).....	1	-	1	-	-	-
Malaria.....	3	-	-	1	2	-
Vascular lesions, etc.....	9	-	1	2	2	4
Accidents or external causes.....	2	1	-	-	-	1
Whooping cough.....	-	-	-	-	-	-
Avitaminosis and anaemias.....	3	1	-	1	-	1
Other causes (e).....	2	-	-	1	1	-

(a) Diseases of digestive system in two countries and in one territory.

(b) Diseases of respiratory system in one country and in one territory.

(c) Includes broncho-pneumonia in one country and in one territory; pneumonia in two countries and one territory.

(d) Diseases of nervous system in one country.

(e) Comprises intestinal infections with second rank in one country; infective and parasitic diseases with fourth rank in one territory; syphilis with fifth rank in one country and with third rank in one territory; helminths, dropsy and dysentery with fourth, and fifth ranks, respectively, in each of three countries.

CHAPTER III

COMMUNICABLE DISEASES STATISTICS

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

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

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

Table 13 gives the estimated midyear populations for 1950-1953 for 22 countries and 22 other areas. These estimated populations were used for the calculation of birth, death, and case rates with the exceptions of rates for reporting areas.

In 8 of the countries, reporting systems are in operation in certain areas which are termed "reporting areas." Table 14 gives these 8 countries and the estimated population living in reporting areas. These areas included from 11 per cent to 83 per cent of the population of the country in 1950. In several of these countries the percentage of the population included in reporting areas increased from 1950 to 1953. In the tables which follow, the populations of reporting areas have been used in the calculation of case rates in these 8 countries instead of the total populations which were used for the other countries with the exception of the quarantinable diseases where considered appropriate. In these tables areas reporting neither a case nor a death were omitted.

The number of cases and deaths from diphtheria with rates per 100,000 population are given in Tables 15 and 16. Although these data do not indicate that diphtheria is a major health problem, diphtheria is a preventable disease and through control programs case and death rates can be reduced. The status of the control

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

programs as given in Table 17 indicate that in several countries systematic vaccination programs are carried on. In a few areas triple vaccine (diphtheria, pertussis and tetanus) is being used.

Tables 18 and 19 give information regarding cases and deaths from dysentery. From the rank of gastro-enteritis and diarrhea in the principal causes of death, as well as from these rates, it is evident that the prevention of cases and deaths from gastro-intestinal diseases requires health services especially in the field of sanitation. Data regarding the Sanitation Programs are given in Chapter VI of this Summary.

Cases of leprosy were reported in 1952 in 16 countries and 14 other areas of the Americas (Table 20). The numbers of deaths (Table 21) were small and in all areas the death rates in 1952 were 4.0 or less per 100,000 population. The status of the control programs for diagnosis and treatment of the patients are given in Table 22.

Although reporting of cases of malaria is probably incomplete in many areas of the Americas and probably inaccurate in certain areas where fevers are common or where the disease is declining rapidly, the case and death rates in Tables 23 and 24 indicate that malaria is a major health problem in several countries and territories. In 3 countries and 1 territory the death rates exceeded 100.0 per 100,000 population in 1952 and in 6 other areas they were greater than 50 per 100,000 population. However, in a few areas the rates were very low. The status of malaria control programs are given in Table 25. Also in the chapter on sanitation programs Table 62 gives a summary of the work being carried on for the control of insect vectors.

Death rates from measles (Table 27) were high in several of the countries of the Americas. Although 80 to 90 per cent of persons surviving to 20 years of age had an attack of measles, usually case fatality rates have been low. These high death rates in several countries indicate that steps need to be taken to prevent deaths from this common disease of childhood.

Fifteen countries and 14 other areas reported cases of meningococcal infections (Table 28). The numbers of deaths from meningococcal infections were small in all areas supplying data (Table 29).

Cases or deaths from plague during the 4-year period 1950-1953 were known to have occurred in 8 countries of the Americas (Table 30). Control programs were reported to be in operation in nearly all the countries reporting cases (Table 31). With the exception of a few cases in 1950 the cases of plague were not known to have occurred in seaports or other international ports.

Information regarding cases and deaths from smallpox, given in Table 32 indicates that this disease continues to occur in several countries of the Americas. The status of the control programs are given in Table 33. Although progress has been made, further efforts are needed for the eradication of the disease from the Americas.

Cases of syphilis were reported in nearly all areas (Table 34) and judged by both case and death reports (Table 35) this disease constitutes an important health problem in several areas. The information given in Table 36 indicates that control programs are in operation in many of the areas.

Data provided in Tables 37 and 38 indicate that tuberculosis is a reportable disease in nearly all of the areas and that cases are being reported and are thus known to the health authorities. Although the tuberculosis death rates exceeded 100 per 100,000 population in 4 countries and one territory in 1952, in general the death rates appeared to be declining from the high rates noted in many countries in the past. The information given in Table 39 reveals that active control programs are in operation in many of the areas.

Typhoid fever, as other gastro-intestinal diseases, caused many cases and deaths in the Americas (Tables 40 and 41). Although the death rates were high in several countries (in 4 countries and 4 territories the rates were 10.0 or more per 100,000 population in 1952), in a few areas the rates were very low.

Sixteen of the countries and 4 other areas reported a case or cases of typhus fever during this four-year period (Table 42). In a few countries all or nearly all of the cases were louse-borne while in others only the murine form was found. No distinction was made in the data provided; however, the information given on the status of the control programs (Table 43) indicates the nature of the problems as well as gives control programs.

From reports of cases and also of deaths from whooping cough, this disease appeared to be causing considerable morbidity and mortality among children in the Americas (Tables 44 and 45). Although the data may not be entirely accurate the size of these death rates indicates the need for investigations to determine the cause and for the application of preventive measures. Triple vaccine (diphtheria, pertussis, tetanus) was reported to be in use in several areas (Table 46). The high value and low cost of this method of prevention justify the addition and expansion of programs of immunization against whooping cough.

Yaws is a disease which is reported only in a limited area in the Americas. Five countries and 9 territories supplied information regarding cases of yaws (Table 47). Additional information regarding the occurrence of the disease, as well as the work carried on to eradicate this disease, is given in Table 48.

Eight countries gave information regarding cases and/or deaths from jungle yellow fever during this period (Table 49). The work being carried on for the control of yellow fever is described in four tables: Table 50 for the program in general; Table 51, the viscerotomy program; Table 52, the Aëdes aegypti eradication program; and Table 53, the program of vaccination against yellow fever.

TABLE 13

ESTIMATED TOTAL POPULATIONS IN THE AMERICAS, FOR MIDYEARS 1950-1953

Area	Estimated midyear population			
	1950	1951	1952	1953
Argentina	17 196 809	17 644 117	18 053 913	18 379 000
Bolivia (a)	3 019 031	3 054 052	3 089 479	3 127 603
Brazil	51 944 397	53 033 354	54 122 311	55 211 268
Canada (b)	13 688 000	13 984 329	14 405 000	14 756 000
Chile	5 786 283	5 865 849	5 945 415	6 024 981
Colombia	11 333 380	11 586 120	11 844 090	12 107 810
Costa Rica	a) 803 000	825 070	853 412	881 313
Cuba	5 256 437	5 325 322	5 394 396	...
Dominican Republic	2 130 943	2 182 951	2 236 228	2 290 805
Ecuador (c)	3 157 000	3 252 000	3 350 000	3 439 000
El Salvador	1 857 023	1 880 948	1 905 240	1 929 779
Guatemala	2 802 729	2 886 567	2 975 143	a) 3 068 488
Haiti	c) 3 080 000	c) 3 137 000	d) 3 200 000	c) 3 265 000
Honduras	1 428 089	1 470 000	1 512 668	1 555 664
Mexico	25 825 836	26 540 135	27 283 148	28 052 513
Nicaragua	1 059 533	1 092 759	1 128 409	a) 1 164 788
Panama (e)	748 269	766 777	785 285	803 793
Paraguay	1 396 842	1 431 763	1 467 557	1 504 246
Peru	8 103 519	8 264 179	8 428 392	8 591 300
United States	151 234 000	153 384 000	155 755 000	158 306 000
Uruguay	2 397 844	2 438 995	c) 2 481 000	c) 2 523 000
Venezuela	4 981 493	5 113 498	5 245 504	5 377 508
Alaska	137 000	161 000	191 000	205 000
Bahama Islands	d) 79 000	d) 81 000	d) 83 000	d) 85 000
Barbados (f)	209 000	212 000	216 000	221 000
Bermuda	38 005	38 350	38 760	39 272
British Guiana (g)	406 000	416 720	428 670	441 000
British Honduras	67 430	69 644	73 171	75 782
French Guiana (f)	28 595	28 885	29 225	29 555
Guadeloupe (f)	302 000	307 440	311 640	314 460
Hawaii	491 000	514 000	522 000	523 000
Jamaica	1 402 900	1 429 800	1 457 000	1 486 100
Leeward Islands:				
Antigua	45 072	46 291	47 575	48 953
Montserrat	13 535	13 594	13 587	13 685
St. Kitts - Nevis	47 615	49 321	50 419	52 023
Virgin Islands (f)	6 925	7 075	7 225	7 375
Martinique (f)	279 960	285 260	289 425	292 435
Puerto Rico	2 208 000	2 231 000	2 233 000	2 220 000
Trinidad and Tobago	632 450	648 700	663 600	678 300
Virgin Islands (U.S.)	27 000	25 000	24 000	25 000
Windward Islands:				
Dominica (d)	54 000	55 000	56 000	57 000
Grenada	d) 77 000	d) 79 000	d) 78 000	82 794
St. Lucia	79 495	80 978	82 359	83 905
St. Vincent	67 044	69 530	70 766	72 711

(a) Revised Report.
(b) Excluding Yukon and Northwest Territories, population on June 1 rather than July 1, used for calculating rates.
(c) Estimated by PASB.
(d) United Nations Demographic Yearbook.
(e) Tribal Indians excluded.
(f) Linear interpolation from end of year populations.
(g) Amerindians excluded.

TABLE 14

ESTIMATED POPULATION LIVING IN REPORTING AREAS IN 8 COUNTRIES OF THE AMERICAS, AND PERCENTAGE OF POPULATION, FOR MIDYEARS 1950-1953

Country	Estimated midyear population of reporting area (a)							
	1950		1951		1952		1953	
	Population	Per cent	Population	Per cent	Population	Per cent	Population	Per cent
Bolivia (b).....	2 264 000	75	2 443 000	80	2 533 000	82	2 596 000	83
Brazil ..... (c)	5 727 000	11	5 895 000	11	6 062 537	11	...	...
Brazil ..... (d)	7 925 887	15	8 232 380	16	8 490 033	16	8 237 874	15
Colombia (b).....	7 854 000	70	8 347 000	73	7 361 000	63	9 820 000	81
Ecuador (b, e).....	681 000	22	700 000	22	717 000	22	...	...
El Salvador.....	743 000	40	865 000	46	922 000	48	888 000	46
Paraguay.....	1 154 000	83	1 183 000	83	1 213 000	83	...	...
Peru (b).....	3 370 000	42	3 502 000	42	3 413 000	40	3 455 000	40
Venezuela (b).....	2 638 000	53	2 830 000	55	2 974 000	57	3 109 000	58

(a) Reporting area is administrative territorial unit from which reports are received regularly. For Brazil two reporting areas are used; one for cases and the other for deaths.

(b) Estimated by PASB.

(c) Federal District and Capitals of States, excluding City of São Paulo, used for birth and death rates.

(d) Federal District and Capitals of States and Territories 1951 and 1952. For 1950 excluding Macapá and Rio Branco; for 1953 excluding Macapá, Rio Branco and Salvador, used for case rates with exceptions noted below for reporting areas. For tuberculosis it was as follows: 1950 - 5,727,791; 1951 - 3,505,868; 1952 - 3,612,556; 1953 - 3,209,432. For dysentery in 1951 it was 5,945,689. For whooping cough it was in 1950 - 5,727,791; 1951 - 5,945,689; 1952 - 6,114,747; 1953 - 5,773,993. For plague and yellow fever the area was the total national territory.

(e) Capital cities of provinces.

TABLE 15

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	2 137	12.4	1 896	10.7	2 228	12.3	2 136	11.6
Bolivia (a)	65	2.9	136	5.6	109	4.3	b) 98	3.8
Brazil (c)	3 733	47.1	3 374	41.0	3 008	35.4	2 521	30.6
Canada (d)	421	3.1	253	1.8	190	1.3	132	0.9
Chile	1 023	17.7	1 449	24.7	e) 1 260	21.2	e) 890	14.8
Colombia (a)	2 156	27.5	2 526	30.3	1 877	25.5	1 511	15.4
Costa Rica	380	47.4	435	52.7	237	27.8	178	20.2
Cuba	219	4.2	200	3.8	154	2.9	...	...
Dominican Republic	218	10.2	224	10.3	81	3.6	...	...
Ecuador (f)	306	44.9	454	64.9	259	36.1	...	...
El Salvador (a)	84	11.3	105	12.1	122	13.2	e) 294	33.1
Guatemala	41	1.5	78	2.7	91	3.1	...	...
Haiti	111	3.6	251	8.0	86	2.7	...	...
Honduras	...	...	...	...	...	...	...	...
Mexico	1 236	4.8	997	3.8	1 060	3.9	...	...
Nicaragua	47	4.4	51	4.7	38	3.4	40	3.4
Panama	97	13.0	73	9.5	41	5.2	b) 33	4.1
Paraguay (a)	154	13.3	177	15.0	24	2.0	...	...
Peru (a)	456	13.5	173	4.9	175	5.1	...	...
United States	5 796	3.8	3 983	2.6	2 960	1.9	2 355	1.5
Uruguay	220	9.2	224	9.2	198	8.0	194	7.7
Venezuela (a, e)	1 011	38.3	898	31.7	515	17.3	352	11.3
Alaska	2	1.5	-	-	122	63.9	1	0.5
Barbados	23	11.0	18	8.5	5	2.3	16	7.2
Bermuda	7	18.4	1	2.6	-	-	...	...
British Guiana	44	10.8	33	7.9	27	6.3	33	7.5
British Honduras	4	5.9	4	5.7	21	28.7	36	47.5
French Guiana	...	...	1	3.5	-	-	-	-
Guadeloupe	1	0.3	8	2.6	4	1.3	18	5.7
Hawaii	9	1.8	3	0.6	5	1.0	5	1.0
Jamaica	36	2.6	55	3.8	37	2.5	33	2.2
Leeward Islands:								
St. Kitts - Nevis	1	2.1	-	-	-	-	1	1.9
Martinique	5	1.8	10	3.5	2	0.7	2	0.7
Puerto Rico	416	18.8	493	22.1	422	18.9	327	14.7
Trinidad and Tobago	89	14.1	90	13.9	89	13.4	...	...
Virgin Islands (U.S.)	-	-	-	-	2	8.3	-	-
Windward Islands:								
St. Vincent	3	4.5	-	-	-	-	-	-

(a) For reporting areas.
(b) Revised report.
(c) Reporting area (Table 14).
(d) Excluding Yukon and Northwest Territories.
(e) Provisional
(f) Capital cities of provinces.

TABLE 16

NUMBER OF DIPHTHERIA DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	207	1.2	176	1.0	165	0.9	...	...
Bolivia	14	0.5	20	0.7	25	0.8	32	1.0
Brazil (a)	312	5.4	293	5.0	259	4.3	...	...
Canada (b)	52	0.4	37	0.3	26	0.2	15	0.1
Chile	214	3.7	222	3.8	c) 124	2.1	c) 143	2.4
Colombia	518	4.6	599	5.2	569	4.8	d) 415	3.4
Costa Rica	68	8.5	76	9.2	66	7.7	36	4.1
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	120	5.7	122	5.6	122	5.5	...	...
Ecuador (e)	104	15.3	86	12.3	99	13.8	...	...
El Salvador	29	1.6	17	0.9	25	1.3	d) 39	2.0
Guatemala	30	1.1	32	1.1	49	1.6	...	...
Haiti	2	0.1	3	0.1	8	0.3	...	...
Honduras	9	0.6	5	0.3	6	0.4	...	...
Mexico	538	2.0	582	2.2	525	1.9	...	...
Nicaragua	6	0.6	2	0.2	4	0.4	d) 2	0.2
Panama	7	0.9	9	1.2	d) 9	1.1	12	1.5
Paraguay (f)	8	0.7	13	1.1	...	...	...	...
Peru	192	2.4	75	0.9	d) 57	0.7	...	...
United States	410	0.3	302	0.2	217	0.1	g) 160	0.1
Uruguay	6	0.3	6	0.2	...	...	...	...
Venezuela (h)	193	3.9	165	3.2	87	1.7	58	1.1
Alaska	-	-	-	-	8	4.2	...	...
Barbados	1	0.5	6	2.8	1	0.5	2	0.9
Bermuda	1	2.6	...	...	...	...	-	-
British Guiana	11	2.7	6	1.4	5	1.2	9	2.0
British Honduras	1	1.5	-	-	1	1.4	2	2.6
French Guiana	-	-	-	-	-	-	-	-
Guadeloupe	...	...	...	...	...	...	...	...
Hawaii	-	-	-	-	-	-	...	...
Jamaica (h)	7	0.5	6	0.4	8	0.5	...	...
Leeward Islands:								
St. Kitts - Nevis	1	2.1	-	-	-	-	1	1.9
Martinique	...	...	4	1.4	1	0.3	2	0.7
Puerto Rico	39	1.8	76	3.4	46	2.1	c) 34	1.5
Trinidad and Tobago	13	2.1	3	0.5	10	1.5	...	...
Virgin Islands (U.S.)	-	-	-	-	1	4.2	...	...
Windward Islands:								
St. Vincent	1	1.5	-	-	-	-	-	-

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

TABLE 17

STATUS OF DIPHTHERIA CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	Vaccination is compulsory by national law. Over one million persons are vaccinated annually, at the age of approximately three months and, especially, upon entering school (6 years). One million doses of top quality toxoids are produced in a plant at the Malbrán Institute, in accordance with required international standards: 30 L.F. For the treatment of this disease, the Malbrán Institute prepares an antidiphtheria serum of excellent quality as regards concentration, purity, and absence of heterologous albumins. The campaign is conducted throughout the entire Republic by the "Direcciones Generales Regionales" (Regional Health Services). During 1953, 2,136 cases were reported, with 165 deaths.
Bolivia	Cases of diphtheria are very rare. Vaccinations are applied not systematically, but only occasionally when a case occurs.
Brazil	Diphtheria is an important problem in public health work. The state health services, through their district health units, endeavor to solve the problem principally by immunizing children of susceptible age. The Health Ministry, through the National Children's Department, provides technical material, and financial assistance to both state and private public health or maternal and child health organizations. Part of this assistance comes from UNICEF, which includes in its program the promotion of antidiphtheria immunization practices. (Condensed from the Report to the XIV PASC, page 9.)
Canada	In 1950 there were 421 cases of diphtheria reported and 52 deaths. By 1953 cases reported had dropped to 132 and deaths to 15. This rapid decline reflected the active program of immunization carried out in this country.
Chile	In the past three years the two principal activities of the diphtheria program have been application of patient-control measures and a combined vaccination program. Patient control based on diagnosis and prompt notification of cases, isolation, treatment and epidemiological investigation, is carried out only in the country's urban areas. The combined vaccination program, assisted by the Pan American Sanitary Bureau and UNICEF, has been under way since 1951, and covers the Provinces of Santiago and Concepción and the Department of San Felipe, which account for one third of the total population of the country. The plan adopted includes first an urban phase and second a rural phase, during which 40 per cent of all children from 3 months to 5 years of age will be immunized, with the ultimate objective of covering 70 per cent of this group. As of 31 December 1953, in the Province of Santiago, 50 per cent of the susceptible children from 3 months to 6 years of age living in urban sectors and 40 per cent of those in rural areas had been immunized with two doses, whereas in the Province of Concepción and the Department of San Felipe up to 40 per cent of the susceptible children had been covered.
Colombia	Vaccination work in general is being intensified through the health agencies of the Ministry and the work in certain cities through the UNICEF campaign.
Costa Rica	Permanent diphtheria-pertussis-tetanus vaccination programs.
Cuba	Diphtheria is a notifiable disease in Cuba. Classic control measures are applied.

TABLE 17

STATUS OF DIPHTHERIA CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Dominican Rep.	When sporadic cases occur, control campaigns are undertaken.
Ecuador	When cases occur, emergency programs are implemented.
El Salvador	A mass vaccination campaign has been carried on since 1952, with the use of triple vaccine, diphtheria-pertussis-tetanus.
Mexico	Children are vaccinated during the first three months of life; booster shots are applied in the two years following completion of the protection series, and at the age of six years. From the age of seven, in the case of positive Schick test, vaccination or booster shots with combined toxoid are applied, after the Moloney test. The use of combined toxoid - plain pertussis with diphtheria toxoid - is preferred. Contacts under six months of age receive passive immunization.
Nicaragua	Diphtheria is one of the few diseases reported by private local physicians. Contacts are carefully controlled.
Panama	For some years the diphtheria control program has been carried on through the Health Units. Vaccination is given to infants in the first three months of life, whenever possible, or to nursing babies or pre-school-age children as soon as they come under the control of the Health Unit. A booster dose is administered to children at the age of six years and before enrollment in school. After the seventh year, vaccine is applied only to Schick-positive children. Usually, triple toxoid (diphtheria-tetanus-pertussis) is employed. Diphtheria incidence is extremely low.
Paraguay	Because of its low incidence in the country, diphtheria does not constitute a public health problem and there is no special control program.
Peru	A nation-wide diphtheria control program was initiated under an agreement concluded with the WHO and UNICEF in July, 1953. This disease continues to be a public health problem, as is shown by the fact that there were 605 deaths in a total of 1,654 diphtheria cases reported from 1948 to 1952. These figures are given with reservations, as there were certainly many cases that were not diagnosed. (The predominant strain in the country seems to be mitis.)
United States	In 1950, 5,796 cases of diphtheria were reported, and 410 deaths. In 1953, 2,355 cases were reported, and it is anticipated that final mortality figures will show a corresponding decline, indicating continued progress in control.
Uruguay	Morbidity figures for 1944 were 4,978 cases, with 196 deaths. Application of the decree making diphtheria vaccination a requirement for school enrollment led to a rapid decrease in annual morbidity to 200 cases, with 6 deaths. This downward trend will be even more marked in future years with the introduction of compulsory pre-school-age vaccination, for which legislation is under study and will be approved during 1954. The presence of cases in adolescents and adults made the following measures necessary: a) fractionated vaccinations in persons over 12 years of age, after a Schick test; b) requirement that the notification of cases be accompanied by a report on the pharyngeal discharge.

TABLE 17

STATUS OF DIPHTHERIA CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay (Cont.)	The 836 patients reported between 1950 and 1953 were classified by age as follows: 260 children under 7 years; 124 from 7 to 10 years; 126 from 11 to 20 years; 247 over 20 years; and 79 ages unknown.
Venezuela	All local health departments apply systematic vaccinations against diphtheria and carry out routine measures for control of cases, contacts, and carriers. In addition, mass vaccination campaigns are undertaken periodically wherever the problem is of special importance.
	. . . . .
Alaska	Diphtheria-pertussis-tetanus vaccinations.
Bahama Islands	No cases have occurred and there is no control program.
Barbados	Immunization is offered at health centers.
Bermuda	Inoculation of school children has been carried on since 1928. Six hundred and twenty-four children were immunized against diphtheria and tetanus, and 614 who had been vaccinated in previous years were given a supplementary injection. Sixty infants were inoculated by us against diphtheria, tetanus and whooping cough and 100 more by private practitioners.
British Guiana	Usual control methods of notification, hospitalization where necessary, and passive immunization of very close contacts.
British Honduras	Diphtheria and whooping cough combined vaccination is now offered at all health centers, free of charge.
Guadeloupe	It has become rare on Guadeloupe. Vaccination with diphtheria antitoxin combined with tetanus antitoxin has been given to large portions of the population, in mass vaccinations or in physicians' laboratories. Vaccination has been obligatory for every person one year old or more, and it may be possible, in a few more years to eliminate this disease from Guadeloupe.
Hawaii	Compulsory immunization at 9 months of age, as well as boosters on first entering school.
Jamaica	In the Corporate Area there is a program of inoculation of children in infant schools and at children's clinics. Contacts of reported cases are followed up at home.
Leeward Islands Montserrat	Post Health Services are in charge of control work.
Martinique	Obligatory vaccination at 12 and 18 months, with revaccination the following year.
Puerto Rico	The trend toward diminishing incidence persists. The program of immunization is kept active.
Trinidad and Tobago	Routine immunization of infants.
Virgin Islands (U. S.)	Two cases reported during fiscal year 1952, one at St. Croix and one at St. Thomas. Immunization program now being carried out on a wide scale and 671 DPT immunizations were completed in 1953 fiscal year.

TABLE 18

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	2 005	11.7	2 178	12.3	3 343	18.5	2 606	14.2
Bolivia (a)	1 470	64.9	2 036	83.3	1 098	43.3	b) 3 965	152.7
Brazil (c)	550	6.9	877	14.8	894	10.5	857	10.4
Canada (d)	759	5.5	562	4.0	504	3.5	1 042	7.1
Chile	44	0.8	26	0.4	e) 29	0.5	e) 16	0.3
Colombia (a)	51 236	652.4	48 836	585.1	52 985	719.8	76 323	777.2
Costa Rica	5 574	695.9	805	97.6	852	99.8	801	90.9
Cuba	55	1.0	...	...	...	...	...	...
Dominican Republic	1 497	70.3	1 746	80.0	761	34.0	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	2 487	334.7	5 846	675.8	5 126	556.0	e) 4 343	489.1
Guatemala	3 175	113.3	3 986	138.1	5 704	191.7	...	...
Haiti	3 304	107.3	2 341	74.6	4 659	145.6	...	...
Honduras	...	...	7 884	536.3	5 804	383.7	...	...
Mexico	15 336	59.4	18 906	71.2	21 315	78.1	...	...
Nicaragua	4 283	404.2	4 316	395.0	6 950	615.9	5 832	500.7
Panama	616	82.3	464	60.5	402	51.2	1 087	135.2
Paraguay (a)	1 653	143.2	1 752	148.1	2 447	201.8	...	...
Peru (a)	7 077	210.0	8 712	248.8	8 313	243.6	f) 8 482	245.5
United States	...	...	...	...	...	...	...	...
Uruguay	17	0.7	6	0.2	5	0.2	6	0.2
Venezuela (a, e)	40 163	1 522.5	39 740	1 404.2	55 564	1 868.3	51 788	1 665.7
Alaska	...	...	-	-	-	-	-	-
Bahama Islands	25	31.6	18	22.2	9	10.8	1	1.2
Barbados	-	-	-	-	-	-	-	-
British Guiana	944	232.5	175	42.0	533	124.3	409	92.7
British Honduras	345	511.6	217	311.6	361	493.4	413	545.0
French Guiana	...	...	31	107.3	5	17.1	...	...
Guadeloupe	20	6.6	39	12.7	9	2.9	5	1.6
Hawaii	104	21.2	85	16.5	185	35.4	186	35.6
Jamaica	28	2.0	22	1.5	218	15.0	79	5.3
Leeward Islands:								
Antigua	12	26.6	24	51.8	23	48.3	170	347.3
St. Kitts - Nevis	115	241.5	74	150.0	86	170.6	261	501.7
Virgin Islands	23	332.1	43	607.8	19	263.0	8	108.5
Martinique	1	0.4	2	0.7	-	-	3	1.0
Puerto Rico	31	1.4	184	8.2	36	1.6	40	1.8
Trinidad and Tobago	262	41.4	461	71.1	497	74.9	-	-
Virgin Islands (U.S.)	-	-	-	-	2	8.3	1	4.1
Windward Islands:								
Dominica	117	216.7	93	169.1	236	421.4	126	221.1
Grenada	-	-	-	-	5	6.4	317	382.9
St. Lucia	...	...	834	1 029.9	155	188.2	...	...
St. Vincent	...	...	22	31.6	69	97.5	54	74.3

(a) For reporting areas.
(b) Revised report.
(c) Reporting area (Table 14).
(d) Excluding Yukon and Northwest Territories.
(e) Provisional.
(f) Through November.

TABLE 19

NUMBER OF DYSENTERY DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	50	0.3	40	0.2	37	0.2	...	...
Bolivia	496	16.4	782	25.6	624	20.2	812	26.0
Brazil (a)	1 051	18.4	1 290	21.9	1 155	19.0	...	...
Canada (b)	58	0.4	52	0.4	50	0.3	32	0.2
Chile	27	0.5	26	0.4	c) 15	0.3	c) 40	0.7
Colombia	...	...	...	...	...	...	723	6.0
Costa Rica	50	6.2	49	5.9	54	6.3	53	6.0
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	184	8.6	191	8.7	245	11.0	...	...
Ecuador (d)	75	11.0	66	9.4	68	9.5	...	...
El Salvador	110	5.9	191	10.2	222	11.7	c) 160	8.3
Guatemala	1 198	42.7	1 232	42.7	1 750	58.8	...	...
Haiti	10	0.3	8	0.3	36	1.1	...	...
Honduras	96	6.7	68	4.6	61	4.0	...	...
Mexico	4 897	19.0	7 393	27.9	5 719	21.0	...	...
Nicaragua	71	6.7	39	3.6	83	7.4	45	3.9
Panama	43	5.7	43	5.6	e) 40	5.1	26	3.2
Paraguay (f)	81	7.0	56	4.7	...	...	...	...
Peru	1 379	17.0	1 343	16.3	1 492	17.7	...	...
United States	923	0.6	1 040	0.7	937	0.6	g) 710	0.4
Uruguay	2	0.1	3	0.1	...	...	...	...
Venezuela (h)	558	11.2	448	8.8	547	10.4	420	7.8
Alaska	-	-	1	0.6	-	-	...	...
Bahama Islands	-	-	-	-	-	-	-	-
Barbados	5	2.4	6	2.8	10	4.6	8	3.6
British Guiana	101	24.9	64	15.4	77	18.0	70	15.9
British Honduras	16	23.7	7	10.1	18	24.6	11	14.5
French Guiana	-	-	-	-	-	-	-	-
Guadeloupe	...	...	...	...	1	0.3	...	...
Hawaii	2	0.4	3	0.6	2	0.4	...	...
Jamaica (h)	22	1.6	22	1.5	51	3.5	...	...
Leeward Islands:								
Antigua	12	26.6	5	10.8	3	6.3	8	16.3
St. Kitts - Nevis	1	2.1	3	6.1	4	7.9	15	28.8
Virgin Islands	...	...	1	14.1	1	13.8	1	13.6
Martinique	...	...	2	0.7	-	-	1	0.3
Puerto Rico	58	2.6	60	2.7	31	1.4	c) 30	1.4
Trinidad and Tobago	28	4.4	33	5.1	50	7.5	...	...
Virgin Islands (U.S.)	-	-	-	-	-	-	...	...
Windward Islands:								
Dominica	-	-	2	3.6	35	62.5	6	10.5
Grenada	-	-	2	2.5	5	6.4	...	...
St. Lucia	115	144.7	81	100.0	77	93.5	40	47.7
St. Vincent	-	-	-	-	2	2.8	6	8.3

(a) Federal District and State Capitals, excluding city of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) Capital Cities of Provinces.
(e) Revised Report.
(f) For reporting area.
(g) Estimate based on a 10 percent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 20

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	323	1.9	552	3.1	404	2.2	a) 288	1.6
Bolivia (b)	53	2.3	10	0.4	8	0.3	c) 36	1.4
Brazil (d)	4 690	9.0	4 829	9.1	5 044	9.3	e) 5 306	9.6
Canada (f)	-	-	3	0.0	-	-	2	0.0
Colombia (b)	498	6.3	635	7.6	705	9.6	903	9.2
Costa Rica	59	7.4	31	3.8	25	2.9	8	0.9
Cuba	127	2.4	72	1.4	99	1.8	...	...
Dominican Republic	...	...	37	1.7	35	1.6	...	...
Ecuador	10	0.3	6	0.2	-	-	...	...
Guatemala	5	0.2	7	0.2	3	0.1	...	...
Haiti	8	0.3	10	0.3	2	0.1	...	...
Mexico	-	-	301	1.1	248	0.9	...	...
Nicaragua	...	...	...	...	...	...	11	0.9
Panama	-	-	2	0.3	4	0.5	9	1.1
Paraguay (b)	317	27.5	375	31.7	340	28.0	...	...
Peru (b)	86	2.6	79	2.3	92	2.7	g) 91	2.6
United States	44	0.0	57	0.0	57	0.0	60	0.0
Uruguay	6	0.3	10	0.4	13	0.5	10	0.4
Venezuela (a, b)	912	34.6	923	32.6	616	20.7	836	26.9
Bahama Islands	-	-	-	-	1	1.2	2	2.4
Barbados	-	-	-	-	3	1.4	1	0.5
Bermuda	...	...	...	...	...	...	...	...
British Guiana	6	1.5	9	2.2	10	2.3	15	3.4
French Guiana	...	...	72	249.3	5	17.1	48	162.4
Guadeloupe	7	2.3	5	1.6	6	1.9	9	2.9
Hawaii	34	6.9	23	4.5	21	4.0	23	4.4
Jamaica	28	2.0	24	1.7	24	1.6	10	0.7
Leeward Islands:								
Antigua	2	4.4	4	8.6	5	10.5	6	12.3
Montserrat	2	14.8	-	-	-	-	-	-
St. Kitts - Nevis	2	4.2	3	6.1	3	6.0	3	5.8
Martinique	139	49.6	110	38.6	98	33.9	112	38.3
Puerto Rico	2	0.1	14	0.6	14	0.6	12	0.5
Trinidad and Tobago	371	58.7	438	67.5	420	63.3	...	...
Virgin Islands (U.S.)	1	3.7	1	4.0	-	-	-	-
Windward Islands:								
Dominica	1	1.9	2	3.6	1	1.8	2	3.5
Grenada	4	5.2	1	1.3	-	-	2	2.4
St. Lucia	-	-	-	-	5	6.1	2	2.4
St. Vincent	-	-	2	2.9	-	-	-	-

(a) Provisional.
(b) For reporting areas.
(c) Revised Report.
(d) Cases from the national territory and reported to health authorities of the Federal District and State Capitals.
(e) Incomplete.
(f) Excluding Yukon and Northwest Territories.
(g) Through November.

TABLE 21

NUMBER OF LEPROSY DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	60	0.4	66	0.4	60	0.3	a) ...	...
Bolivia	...	...	...	...	...	...	...	...
Brazil (b)	95	1.7	108	1.8	105	1.7	...	...
Canada (c)	-	-	-	-	1	0.0	-	-
Colombia (d)	...	...	...	...	91	0.8	e) 104	0.9
Costa Rica	1	0.1	2	0.2	4	0.5	3	0.3
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	-	-	-	-	-	-	...	...
Ecuador (f)	8	1.2	1	0.1	3	0.4	...	...
Guatemala	6	0.2	1	0.0	1	0.0	...	...
Haiti	...	...	1	0.0	...	...	...	...
Mexico	117	0.5	136	0.5	75	0.3	...	...
Nicaragua	1	0.1	-	-	-	-	-	-
Panama	-	-	1	0.1	e) -	-	-	-
Paraguay (g)	4	0.4	4	0.4	...	...	...	...
Peru	10	0.1	4	0.0	7	0.1	...	...
United States	3	0.0	3	0.0	-	-	...	...
Uruguay	4	0.2	6	0.2	...	...	...	...
Venezuela (h)	78	1.6	57	1.1	45	0.9	42	0.8
Bahama Islands	-	-	-	-	-	-	-	-
Barbados	-	-	-	-	1	0.5	1	0.5
Bermuda	1	2.6	...	...	...	...	...	...
British Guiana	10	2.5	13	3.1	13	3.0	16	3.6
French Guiana	-	-	-	-	-	-	-	-
Guadeloupe	...	...	...	...	...	...	...	...
Hawaii	-	-	-	-	-	-	-	-
Jamaica (h)	3	0.2	3	0.2	6	0.4	...	...
Leeward Islands:								
Antigua	-	-	-	-	-	-	-	-
Montserrat	-	-	-	-	-	-	-	-
St. Kitts - Nevis	5	10.5	1	2.0	2	4.0	1	1.9
Martinique	...	...	-	-	-	-	-	-
Puerto Rico	3	0.1	-	-	-	-	a) -	-
Trinidad and Tobago	10	1.6	11	1.7	14	2.1	...	...
Virgin Islands (U.S.)	-	-	-	-	-	-	-	-
Windward Islands:								
Dominica	-	-	1	1.8	-	-	1	1.8
Grenada	10	13.0	1	1.3	2	2.6	...	...
St. Lucia	-	-	-	-	2	2.4	-	-
St. Vincent	-	-	1	1.4	-	-	1	1.4

(a) Provisional.
(b) Deaths reported to health authorities of the Federal District and State Capitals, excluding city of São Paulo.
(c) Excluding Yukon and Northwest Territories.
(d) Deaths reported from leprosaria.
(e) Revised report.
(f) Capital cities of Provinces.
(g) For reporting areas.
(h) Ill-defined causes of death distributed proportionally to defined causes.

TABLE 22

STATUS OF LEPROSY CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	The objective of our health service is to eradicate the endemic areas of leprosy from the country within two generations. Such a statement can be made because of the following facts: the effectiveness of present-day therapeutics; the enactment of a law making prophylaxis and treatment for patients compulsory; the existence of a sufficient number of beds to isolate contagious patients and an adequate number of dispensaries in the endemic zones; the maintenance of permanent stocks of drugs against Hansen's disease; and the fact that the work is carried out with full coordination among the national, provincial, municipal, and private health authorities. Law 11,359 makes the hospitalization of contagious patients compulsory; non-contagious cases are checked every three months as well as healthy contacts who are protected. The requirements of hospitalization in the country are met with 3,000 beds, a number much higher than the present demand. In addition, control dispensaries have been established in the most heavily endemic zones. The "Hogares-Escuelas" (preventoria) for the children of leprosy patients are of great social value. The system of paying wages for work-therapy was extended in the leprosaria, in order to provide social assistance to the families of hospitalized patients, the patients' earnings being turned over to their families. The number of hospitalized leprous patients is 1,800, and 8,975 cases are registered in the country. Intensive survey work to discover unknown cases is conducted in the endemic zones. Investigations and drug control activities are conducted at the Central Institute of Leprology and good results have been obtained through the use of thiosemicarbasone and hydrazide of nicotinic acid.
Bolivia	Leprosy is one of the diseases that is causing the most concern, especially among the population. Four epidemiological surveys made between 1942 and 1949, supplemented by some later investigations, led to the identification of 810 cases throughout the country. According to Doney's rule that for each known case are three unknown cases, the number of patients would total approximately 3,200. The Department of Leprosy is responsible for the control work, which up to the present time has consisted in isolation of leprosy patients with advanced lesions and treatment of out-patients in dispensaries. In practice, regular treatment reaches only the 120 patients isolated in two colonies and in special wards of three hospitals. Next year it is planned to expand the capacity of the isolation colonies and to reorganize the method of treating out-patients, while initiating an intensive education campaign with a view to preventing contagion in the home.
Brazil	The National Leprosy Service of the National Department of Health is responsible for leprosy control work in the country. The disease is spread over all regions of Brazil, the prevalence rate for the entire country being 1.2 per mille or approximately 67,000 patients. Contagious type cases account for 54.5 per cent of the total. Under the present organization of antileprosy services, the Federal Government is responsible for planning and supervising the national campaign, and provides technical and material assistance to the specialized organizations. The states maintain the

TABLE 22

STATUS OF LEPROSY CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Brazil (Cont.)	leprosaria and dispensaries, which operate under the Leprosy Prophylaxis Service. An exception is the State of São Paulo which, because of the size of its organization, has an autonomous Leprosy Department of the state health service. The services throughout the country include a good chain of isolation hospitals, including 37 leprosaria with 23,562 patients. The dispensaries generally function as multipurpose health units of the districts. In addition to these various leprosy control services, Brazil has a chain of 31 preventoria for 4,314 child contacts of leprosy patients, administered and maintained by private institutions with financial aid from the Federal Government. The use of sulfonic drugs for treatment has become generalized, with the result that, in the period 1950-1953, 7,836 patients were no longer subject to compulsory isolation (as they were bacterioscopically negative for a long period). Of that number, 2,023 were discharged on a provisional basis and 700, definitely. The Federal Government has constructed and equipped, near the leprosarium at the national capital, a separate building to house laboratories for study and research on the etiopathogeny and therapeutics of leprosy. The preventive value of BCG is also being investigated; an extensive vaccination campaign is being carried out in the State of Goiás, and among persons in contact with the large leprosy foci. (Condensed from the Report of Brazil to the XIV PASC, pages 7 to 9.)
Canada	In recent years no cases of leprosy are known to have been contacted in Canada. In 1951 three new cases were discovered and in 1953 two new cases. It is believed that all these individuals were in contact with the disease outside Canada. At the end of March 1953, there were 8 persons in leprosaria in Canada, 6 at Tracadie and 2 at Bentinck Island.
Colombia	Intensification of epidemiological activities in coordination with all the public health agencies. Increase in the number of treatments and of dermatological dispensaries. Improvements in leprosaria.
Costa Rica	An active campaign is maintained throughout the country by control of contacts at their homes. In addition, a Dermatological Department is operated in San José for the examination of conditionally discharged patients, out-patients, and contacts.
Cuba	Leprosy is a notifiable disease. There is a foundation specifically concerned with this disease.
Dominican Republic	All patients suffering from leprosy are admitted to a specialized sanatorium.
Ecuador	Campaign in the survey stage.
El Salvador	There are only 62 known cases of the disease.
Mexico	The leprosy campaign is conducted through 21 Dermatological Centers operated in different parts of the country, an Asylum in Zoquiapán, State of Mexico, and 4 special wards for leprosy patients in hospitals.

TABLE 22

STATUS OF LEPROSY CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Nicaragua	Discovered cases are reported by the leprosarium and by some private physicians.
Panama	All leprosy cases detected are immediately sent to the leprosarium. At present, there are 118 well-controlled cases in this institution.
Paraguay	Leprosy is controlled and combatted through a special department established for this purpose.
Peru	The antileprosy campaign was initiated on a nationwide scale with the establishment in 1944 of the National Leprosy Service, now the Department of Leprosy. After intensive local surveys in the Departments of Apurímac and Loreto (the latter covering almost the entire jungle area: Amazon Hylea of Peru), broader studies were made to better measure the extent of the endemic disease in the country, as regards both number and type of cases. It was found that 80% of the endemic cases occur in the northeast, with 958 recorded cases and an estimated 2,700 unreported cases. In the leprosy zones incidence ranges from 12 to 15 per thousand inhabitants, the danger limit for leprosy being one per thousand. This endemic disease also affects some sections of Apurímac, Rodríguez de Mendoza and, to a lesser degree, Dos de Mayo, as well as a very few places in the coastal area with a total of 159 recorded cases and an estimated 600 unreported. Jointly, the affected areas have 1,117 recorded and 3,400 estimated unreported cases, with a prevalence index of 0.92 per thousand, the incidence for the entire country being 0.40 per thousand. The outlying services of the antileprosy campaign include 10 physicians and two social workers who render service at the San Pablo Asylum (Loreto), the dispensaries at Apurímac, Iquitos, Rodríguez de Mendoza, Lima, and Madre de Dios, and the sanatorium-preventorium at Guía (Lima). Generally speaking, it can be stated that endemic leprosy is a regional problem that can be solved, and that the work now being done is directed toward solving it.
United States	Thirty (30) patients were admitted to the National Leprosarium in Carville during 1953 and 12 of these were foreign born. A few new cases were recognized but not admitted. The incidence of leprosy has not changed in several years.
Uruguay	The minimum number of leprosy cases in the country can be taken as 500 patients and the maximum, 1,000. There are 62 patients in the Service at Fermín Ferreira Hospital. Forty-two patients were admitted during the past four years, but the number would have been higher had the facilities of the Service permitted. The principal prophylactic measures applied are: 1) isolation, according to the degree of contagiousness in each patient and the capacity of the Service, which for some time has been crowded; 2) out-patient treatment of the sick and of moderate cases or cases that cannot be hospitalized; 3) examination and control of the patient's family and contacts; 4) suitable information to patients and their families on the characteristics of the disease, protective measures, etc.; 5) application of BCG to children exposed to contagion, etc. The substances used in treatment are

TABLE 22

STATUS OF LEPROSY CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay (Cont.)	sulfonic derivatives, principally, and on a smaller scale, TBI, chaulmoogra oil derivatives, hydrazide of nicotinic acid, PAS, etc. Antibiotics are given in some cases. Symptomatic medication and general care are given to stimulate the physical and psychic defenses of the patient.
Venezuela	There are 63 dispensaries for case detection, organized under 13 regional Epidemiological Services. Patients are treated and contacts are given BCG vaccination. There are two leprosaria, with 1,100 beds.
	. . . . .
Bahama Islands	All known cases are accommodated in the leprosarium. Contacts of new cases are carefully examined.
Barbados	Isolation and out-patient control.
Bermuda	Cases are placed in camps and on parole.
British Guiana	Annual leprosy surveys of elementary school pupils are being continued. Of 48,152 pupils surveyed in 1953, 25 cases of early tuberculoid leprosy were detected and treated.
British Honduras	There is only one known case.
French Guiana	The old leprosarium at Acarouany is being modernized. A modern dispensary has been put into service. The modern 50-bed Saint-Denis Hospital at Cayenne, for serious and contagious cases, is under construction. The Marchoux Preventorium-School in Cayenne was enlarged. Approximately 50 per cent of the leprosy patients are cases made non-contagious by treatment with sulfone (DDS).
Guadeloupe	There are 34 dispensaries for the detection and treatment of cases. The dispensaries operate under the Health Department. A hospital with 105 beds for serious or incurable cases is located in Désirade. The construction of an 80-bed hospital specialized in the treatment of the curably ill, and of a leprosy village for incurable or contagious cases, is planned on the Island of Guadeloupe in the next four years, on a lot that had already been acquired for the purpose by the Department.
Hawaii	Emphasis is placed on the rehabilitation of recovered cases and improved attitudes on the part of the public towards released patients. Diagnosis and isolation is now earlier and more prompt due to public recognition of the effectiveness of the sulfone drugs in preventing the development of deformities and disfigurement.
Jamaica	Infectious cases are sent to the Hansen Home for treatment. Healthy children of leprous parents are sent to the Salvation Army Children's Home.
Leeward Islands Antigua	Increasing use is being made of out-patient treatment.
Leeward Islands Montserrat	Active cases are sent to Antigua.

TABLE 22

STATUS OF LEPROSY CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Leeward Islands St. Kitts - Nevis	Isolation of patients and treatment with sulfones are the bases of the program. The number of inmates at the leprosarium has fallen from 41 four years ago to 25 at the present time.
Martinique	Search for cases and opportunities for hospitalization have been increased.
Puerto Rico	No special program. The isolation of cases is being practiced, as was reported for the previous period. A small increase in admissions to the Leprosy Hospital has been noted; but this could be due to improved methods in the search for cases. It is in proportion with population increase.
Surinam	There are three leprosaria in Surinam. As a result of treatment with DDS, many patients have been discharged from the leprosaria. The ideas concerning isolation have changed in recent years. The old out-patient clinic has been considerably enlarged, as has been the leprosy ward in the general hospital. In 1951, a third leprologist was added to the two already in service. In January 1931, a special school for children suspected of suffering from leprosy was opened. In the last two years, children suffering from tuberculoid leprosy have also been admitted. These children are kept at school from 7 a.m. to 5 p.m., also attending on Saturdays and holidays. They are given meals there, take baths, have the use of a school garden and playground. They are daily under strict medical care.
Trinidad and Tobago	Segregation and examination of cases.
Virgin Islands (U.S.)	Leprosarium (Hansen's Home for Special Patients) located in St. Croix serves all three islands. It has a capacity of 92 beds and occupancy of 10 at present date. Peak occupancy during the past year was 10. One case of leprosy was reported during current fiscal year.
Windward Islands Grenada	Segregation in the Leper Asylum.
Windward Islands St. Vincent	Disease stationary. Normal control.

TABLE 23

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	2 000	11.6	1 836	10.4	1 296	7.2	a) 648	3.5
Bolivia (b)	9 783	432.1	15 324	627.3	12 015	474.3	a)21 014	809.5
Brazil	...	...	...	...	...	...	...	...
Canada (c)	-	-	-	-	17	0.1	d) -	-
Chile	-	-	-	-	-	-	e) 1	0.0
Colombia (b)	91 551	1 165.7	86 137	1 032.0	73 993	1 005.2	83 877	854.1
Costa Rica	10 068	1 256.9	8 797	1 066.2	1 903	223.0	1 407	159.6
Cuba	723	13.8	930	17.5	220	4.1	...	...
Dominican Republic	17 310	812.3	23 288	1 066.8	8 760	391.7	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (b)	17 647	2 375.1	13 176	1 523.2	10 561	1 145.5	f) 6 561	738.9
Guatemala	39 809	1 420.4	41 821	1 448.8	39 393	1 324.1	...	...
Haiti	71.954	2 336.2	72 176	2 300.8	90 928	2 841.5	...	...
Honduras	...	...	12 138	825.7	10 194	673.9	...	...
Mexico	73 029	282.8	54 366	204.8	55 991	205.2	...	...
Nicaragua	6 658	628.4	5 914	541.2	a)11 628	1 030.5	a)13 735	1 179.2
Panama	3 985	532.6	3 975	518.4	2 780	354.0	4 194	521.8
Paraguay (b)	7 224	625.9	13 918	1 176.5	9 127	752.7	...	...
Peru (b)	20 057	595.2	17 824	509.0	17 738	519.7	g)16 188	468.5
United States	2 184	1.4	5 600	3.7	7 023	4.5	1 310	0.8
Uruguay	-	-	-	-	-	-	-	-
Venezuela (f)	2 111	42.4	2 323	45.4	2 679	51.1	2 041	38.0
Alaska	1	0.7	-	-	1	0.5	1	0.5
British Guiana	1 840	453.2	1 008	241.9	181	42.2	83	18.8
British Honduras	4 222	6 261.3	2 499	3 588.2	2 484	3 394.8	1 867	2 463.6
Guadeloupe	12	4.0	3	1.0	-	-	-	-
Hawaii	-	-	58	11.3	97	18.6	106	20.3
Jamaica	...	...	...	...	...	...	...	...
Leeward Islands:								
Antigua	38	84.3	134	289.5	3	6.3	h) 1	2.0
St. Kitts - Nevis	43	90.3	-	-	-	-	-	-
Virgin Islands	...	...	1	14.1	-	-	-	-
Martinique	-	-	3	1.1	-	-	-	-
Puerto Rico	73	3.3	88	3.9	16	0.7	28	1.3
Trinidad and Tobago	5 098	806.1	5 641	869.6	5 931	893.8	...	...
Virgin Islands (U.S.)	-	-	1	4.0	-	-	-	-
Windward Islands:								
Dominica	1 825	3 379.6	1 238	2 250.9	868	1 550.0	546	957.9
Grenada	...	...	...	...	...	...	...	...
St. Lucia	6 141	7 725.0	6 574	8 118.3	6 234	7 569.3	3 225	3 843.6
St. Vincent	9	13.4	34	48.9	i) 116	163.9	5	6.9

(a) Revised Report.
(b) For reporting area.
(c) Excluding Yukon and Northwest Territories.
(d) There were 198 cases, all in men returning from overseas duty, not included in the Dominion Bureau of Statistics tabulations.
(e) Traveler from abroad.
(f) Provisional.
(g) Through November.
(h) Imported from Dominica.
(i) Epidemics on Union Island.

TABLE 24

NUMBER OF MALARIA DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	11	0.1	9	0.1	4	0.0	...	...
Bolivia	1 360	45.0	1 720	56.3	1 980	64.1	1 152	36.8
Brazil (a)	718	12.5	557	9.4	455	7.5	...	...
Canada (b)	-	-	1	0.0	3	0.0	-	-
Chile	-	-	-	-	-	-	-	-
Colombia	2 697	23.8	3 091	26.7	2 826	23.9	3 090	25.5
Costa Rica	571	71.3	459	55.6	320	37.5	193	21.9
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	2 170	101.8	2 278	104.4	2 239	100.1	...	...
Ecuador (c)	220	32.3	152	21.7	121	16.9	...	...
El Salvador	1 704	91.8	1 500	79.7	1 370	71.9	d) 977	50.6
Guatemala	6 844	244.2	6 709	232.4	6 947	233.5	...	...
Haiti	113	3.7	152	4.8	92	2.9	...	...
Honduras	3 432	240.3	3 377	229.7	3 178	210.1	...	...
Mexico	22 996	89.0	24 681	93.0	22 050	80.8	...	...
Nicaragua	2 961	279.5	1 586	145.1	977	86.6	e) 984	84.5
Panama	210	28.1	215	28.0	e) 171	21.8	159	19.5
Paraguay (f)	100	8.7	172	14.5	...	...	...	...
Peru	1 903	23.5	1 700	20.6	1 575	18.7	...	...
United States	76	0.1	64	0.0	25	0.0	g) 20	0.0
Uruguay	-	-	h) 1	0.0	...	...	...	...
Venezuela (i)	471	9.5	273	5.3	131	2.5	103	1.9
Alaska	-	-	-	-	-	-	...	...
British Guiana	66	16.3	31	7.4	17	4.0	8	1.8
British Honduras	29	43.0	7	10.1	7	9.6	11	14.5
Guadeloupe	...	...	20	6.5	86	27.6	12	3.8
Hawaii	-	-	-	-	-	-	...	...
Jamaica (i)	717	51.1	791	55.3	1 044	71.7	...	...
Leeward Islands:								
Antigua	1	2.2	-	-	-	-	-	-
St. Kitts - Nevis	-	-	-	-	-	-	-	-
Virgin Islands	-	-	-	-	-	-	-	-
Martinique	...	...	3	1.1	5	1.7	4	1.4
Puerto Rico	57	2.6	33	1.5	15	0.7	d) 2	0.1
Trinidad and Tobago	141	22.3	138	21.3	80	12.1	...	...
Virgin Islands (U.S.)	-	-	-	-	-	-	...	...
Windward Islands:								
Dominica	15	27.8	20	36.4	18	32.1	9	15.8
Grenada	48	62.3	61	77.2	54	69.2	...	...
St. Lucia	48	60.4	116	143.2	109	132.3	51	60.8
St. Vincent	-	-	-	-	-	-	-	-

(a) Deaths reported to health authorities of the Federal District and State Capitals, excluding the city of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Capital cities of Provinces.
(d) Provisional.
(e) Revised Report.
(f) For reporting areas.
(g) Estimate based on a 10 per cent sample of death certificates.
(h) Imported case.
(i) Ill-defined causes of death distributed to defined causes.

TABLE 25

STATUS OF MALARIA CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	Since anopheline vectors still exist in some breeding places and parasites may be carried by patients coming from abroad, the antimalaria campaign must be maintained in order to prevent the reappearance of the disease. Owing to the decrease in malaria, the Department of Malaria and Tropical Diseases was reorganized into a Department for the Control of Malaria and Yellow Fever. The danger of malaria has been reduced in all the large cities and villages in the northwestern zone. In the epidemo-endemic zone in the northeastern part of the country, conditions are governed by coincidental variations in the malaria situation in bordering zones. The malaria epidemiology in the northeastern and littoral areas continues to be complex. Some scattered cases have occurred during the periods between epidemics, and these could be reservoirs for future epidemics if favorable conditions are present. As to transmission in this zone, it can be said that the true vector of endemic malaria is caused by the A. darlingi and, presumably, by others that have not been studied. Sub-endemic malaria always occurs between April and June, and in dwellings only the A. albitarsis and, in fewer numbers, the A. triannulatus have been found. Epidemic malaria along the littoral region occurs every 10 to 11 years and is associated with heavy rains and floods. In order to intensify the campaign, a plant for the production of DDT is to be inaugurated in Río Tercero in October 1954. This plant will include every modern facility available in various DDT plants throughout the world.
Bolivia	It is roughly estimated that the area affected by malaria covers 190,000 km^2 (73,000 sq. mi.), with a population of 600,000 inhabitants. The great possibilities offered by DDT, because of its low cost and potency as an insecticide, have made it possible to bring under control about 61,000 km^2 (23,500 sq. mi.), with 400,000 inhabitants; in addition, eradication of malaria has been achieved in a considerable part of that area. The most extensive but also the least populated area, situated for the greater part in the Amazon basin, is yet to be controlled. Control activities are being expanded year by year.
Brazil	The National Malaria Service of the National Department of Health is the agency responsible for malaria control work throughout the country. Intradomicile application of DDT, begun in 1945, is being extended rapidly. Physicians specialized in malariology have been directing the field activities or, in their absence, widely experienced field inspectors carry on the work. In urban areas, DDT is applied by teams under the direction of an inspector. In easily accessible rural areas, the work is done by "drag" teams ("arrastão," a procedure similar to that of drag fishing), who travel by truck or jeep and cover a given area within a scheduled time. Launches are used to transport men and materials in certain coastal areas. The "zoning" ("zonagem") system is used in areas difficult to reach: one operator is assigned to a small rural area with a certain number of houses that he must cover within a given period, using his own means of transportation. A paste with 80 per cent technical DDT, used to prepare a thin aqueous solution, is being produced and applied successfully by the Service.

TABLE 25

STATUS OF MALARIA CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Brazil (Cont.)	Two applications of DDT per year are required to ensure the success of vector eradication work in malarious areas; at present only about 20 per cent of the houses receive such treatment. The house application of DDT in the area of transmission by A. kerteszia, in the southern coastal region of the country, is greatly reducing the incidence of malaria; in nonepidemic years this transmission may drop to insignificant levels. In epidemic years, extra- and peri-domicile transmission (i.e., outside and around the house) causes an increase in malaria cases which cannot be curbed by one simple application of DDT to the houses. In order to check such transmission, studies have been made on the spraying of outside walls of houses, vegetation, and other possible mosquito refuges in the area surrounding the dwelling. To control residual malaria transmitted by A. darlingi outside dwellings, the Service has recommended the addition of chloroquine to table salt. Preliminary results of checks made in the field and in hospitalized patients were quite favorable. During the period 1950-1953, from 22 to 25 million inhabitants were protected annually by the application of DDT. Examinations of some 30 thousand persons annually in the four-year period showed parasitic indices of from 0.49 to 2.26. The percentage of positivity in the 100 to 200 thousand blood samples taken annually decreased from 6.60 in 1950 to 2.57 in 1953. In the same period, the average number of anopheles per one hundred house inspections varied between 0.73 and 1.63. The coastal zones with malaria transmitted by A. tarsimaculatus, A. albitarsis, and A. darlingi have received DDT applications twice a year since 1945; before such applications 13,007 cases were confirmed by blood analysis but by 1953 confirmed cases had dropped to 93. Comparative studies appear to confirm the effectiveness of using table salt with chloroquine; the malaria parasitic index decreased in the zones treated during the year to 1.0 and even to 0.0, whereas during that same period in neighboring control areas the index rose above the initial level. (Condensed from the Report to the XIV PASC, pages 19 to 30.)
Canada	In 1953 there were 198 cases of malaria among Canadian troops serving outside Canada. In 1952 there were 522 cases of malaria; most cases of this disease occurred among the armed forces and were contracted outside Canada. Reports from health departments show few cases reported as developing in Canada.
Chile	No cases of malaria of local origin occurred in the province of Tarapacá during the period under review. Surveillance of larval and nymph anopheline foci was maintained through searches made by civilian personnel and guards in valleys and ravines of the Province, over a total of 360 kilometers. Foci discovered were immediately destroyed with insecticides. The antimalaria program is being pursued with the aim of preventing the recurrence of autochthonous cases, maintaining strict control over imported cases of infection, and stamping out the sporadic anopheline outbreaks that occur.
Colombia	Extensive work for the destruction of vectors in malaria zones. Drug distribution. Special studies.

TABLE 25

STATUS OF MALARIA CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Costa Rica	The DDT service covered the entire malaria zone in the country. Twice a year a total of 28,080 houses are treated with DDT from January to June, and 34,490 from July to December.
Cuba	Malaria is a notifiable disease. Classic control measures are applied. The country maintains a Malaria Commission.
Dominican Republic	The malaria control campaign is carried out with the use of DDT throughout the country. Previously constructed drainage works are kept up, and prophylactic control is maintained with antimalarial drugs.
Ecuador	An eradication plan, based on house spraying with DDT, is in full development and a marked decrease in morbidity is being noted throughout the country.
El Salvador	Intradomicile application of DDT in the hyperendemic malaria zones. The cost of the campaign amounts to U. S. $250,000. The antimalaria campaign continued to expand during the period under review. In 1950, DDT was applied twice to 6,783 dwellings and some 34,000 persons were protected. The bi-yearly DDT treatments reached a peak in 1952, when 31,082 houses and 157,000 persons were covered. Single applications of DDT per year increase continually, reaching totals of 124,187 houses treated in 973 localities and 621,000 persons protected in 1953.
Haiti	A control program with WHO Technical Assistance and aid from UNICEF is ready for implementation.
Honduras	Malaria is combatted through intradomicile application of DDT, an average of 70,000 houses and 350,000 persons being covered annually.
Mexico	The study of the malaria problem in the country, initiated some time ago, is continuing. Measures are directed toward the final eradication or the curbing of the disease. New antimalaria services have been established and existing services modified. Other activities include training of personnel for the Campaign, publicity and health education, and organization of the committee on malaria sanitation. The Department of the National Antimalaria Campaign has the advice of specialists on the Technical Council of the Campaign.
Nicaragua	The majority of the cases are those reported by the Public Health Centers.
Panama	Malaria control work is carried out by the Antimalaria Campaign, a special service of the Department of Public Health. The activities are directed toward two fields: maintenance of drainage work and DDT spraying. Approximately 100,000 persons are protected through the drainage work. At present 200,000 persons are protected by DDT spraying activities. Two intradomicile DDT sprayings are applied annually. About 65% of the endemo-epidemic area is covered by this work.

TABLE 25

STATUS OF MALARIA CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Paraguay	A nation-wide campaign to combat malaria by systematic house-to-house application of residual-action insecticides has been under way for two years.
Peru	There is a campaign for the application of residual-action insecticides in the valleys of the Coastal Region and in some valleys of Cuzco Department. In the coastal area malaria is no longer the serious public health problem it once was as has been shown by parasitic surveys of school children (5-14 years). Of a total of 26,275 persons examined, 4.42% had splenomegalia; of 26,544 blood samples taken, 0.79% were positive for malaria. The control of this disease is limited, practically to the coastal area, with the exception of some valleys in the mountainous region and and some localities in jungle areas, where work is being carried out on a small scale. The antimalaria work has, of course, a simultaneous effect on the Aëdes aegypti in the coastal area of the country, as the intradomicile application of residual insecticides is of great value in eradicating that mosquito, owing to the vector's domestic habits. With respect to insect control work, the Peruvian Government concluded an agreement in 1952 with UNICEF and the WHO for the execution of a program in the coastal area. Under this program, the valleys all along the coastal region were completely covered. Insecticides were applied to 262,432 dwellings with a total surface of 64,759,628 m^2 (697,066,200 sq. ft.) and 1,230,333 inhabitants were protected.
United States	One thousand four hundred eighteen (1,418) cases of malaria were reported during 1953, representing a substantial decrease from the 7,023 cases reported during 1952. The majority of these cases were exogenous. Twenty-four (24) confirmed indigenous infections occurred in persons who were infected during 1952 and had long incubation periods. Only four other confirmed indigenous cases have been recognized.
Venezuela	Of the 630,950 houses in the malaria zone, 532,958 were sprayed, with a total of 414,527 kilograms of 100 per cent insecticide used and an average of 1.65 sprayings applied per house. Over two million inhabitants in 23,400 localities were protected.
	. . . . .
British Guiana	While the "strategic" barrier control-technique was further extended on the coastlands during 1953, the last two remote areas of the interior were brought under control, at Cuyuni and Barama River. The total number of malaria cases reported was 114, of which 30 were confirmed microscopically, all from river areas.
British Honduras	Spraying of all houses in the territory with DDT in Xylol. Paludrine tablets are offered free at all schools and clinics.
French Guiana	As the result of the antimosquito campaigns, the number of cases has been reduced by more than 98 per cent. The Anopheles darlingi has been eradicated in the populated zones.
Guadeloupe	A specialized service, provided with sufficient means and financed from a special budget (FIDOM Etat), is conducting an annually

TABLE 25

STATUS OF MALARIA CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Guadeloupe (Cont.)	renewed campaign with the aim of eradicating the disease in Guadeloupe. The service combats the insect vector and larvae; sprays houses; takes action against the parasite in the blood by distributing therapeutics.
Jamaica	Malaria control was merged with the insect control program, which now operates under the tripartite agreement between the Government of Jamaica, UNICEF and WHO.
Leeward Islands Antigua	For first time in history, there were no reports of malaria contracted in Antigua. There is continuous vigilance and control of former foci.
Leeward Islands Montserrat	Laboratory examinations and antimosquito measures.
Leeward Islands St. Kitts - Nevis	Since the DDT spraying program in Nevis was begun in 1950, no new case of malaria has been reported in the Presidency, whereas over 100 cases occurred annually during the preceding years.
Martinique	The number of cases is small. The figures for Anopheles are relatively low. Swamps in certain regions were eliminated.
Puerto Rico	The low number of cases invites investigation of the origin of cases. Most are found to be cases imported or in transit.
Surinam	Malaria is steadily decreasing in the coastal region. The factors contributing to this decline are the ecological conditions, better facilities for medical care, tendency for the rural population to become medical-minded, better drugs, better supervision of persons going into and coming from the interior, more use of mosquito bed nets and DDT spraying of houses.
Trinidad and Tobago	School surveys, with slide diagnostic service; anopheline investigations; spraying of bromeliads with copper sulphates; residual DDT spraying of houses; eradication program in Tobago; larviciding of all water bodies, etc.
Virgin Islands (U.S.)	Malaria is no problem, however, the potential for this disease is present as the mosquito vector, Anopheles albimanus, is found breeding on the Islands.
Windward Islands Dominica	The figures for malaria cases show a considerable decrease from 1,825 in 1950 to 546 in 1953 and reflect the results of antimalaria measures adopted.
Windward Islands St. Lucia	The insect-control program was started in 1953, with assistance from WHO and UNICEF. The number of cases reported was approximately one half the 1952 figures.
Windward Islands St. Vincent	Satisfactory control.

TABLE 26

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	4 703	27.3	5 014	28.4	12 733	70.5	14 372	78.2
Bolivia (a)	593	26.2	624	25.5	508	20.1	b) 506	19.5
Brazil (c)	2 389	30.1	1 213	14.7	1 820	21.4	2 439	29.6
Canada (d)	55 653	406.6	61 300	438.4	56 178	390.0	57 871	392.2
Chile	1 038	17.9	3 520	60.0	e)4 136	69.6	e)8 297	137.7
Colombia	19 508	248.4	14 678	175.8	17 275	234.7	26 438	269.2
Costa Rica	587	73.3	564	68.4	469	55.0	1 197	135.8
Cuba	496	9.4	543	10.2	283	5.2	...	...
Dominican Republic	145	6.8	935	42.8	42	1.9	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	1 916	257.9	3 087	356.9	3 117	338.1	e)1 254	141.2
Guatemala	1 377	49.1	792	27.4	3 657	122.9	...	...
Haiti	539	17.5	109	3.5	57	1.8	...	...
Honduras	...	...	...	...	...	...	...	...
Mexico	23 921	92.6	32 221	121.4	16 788	61.5	...	...
Nicaragua	31	2.9	465	42.6	683	60.5	1 002	86.0
Panama	1 221	163.2	468	61.0	1 074	136.8	929	115.6
Paraguay (a)	2 451	212.4	724	61.2	467	38.5	...	...
Peru (a)	10 709	317.8	8 921	254.7	6 699	196.3	f)4 041	117.0
United States	319 124	211.0	530 118	345.6	683 077	438.6	449 146	283.7
Uruguay	6 183	257.9	1 441	59.1	1 452	58.5	3 651	144.7
Venezuela (a,e)	9 027	342.2	10 304	364.1	8 492	285.5	9 158	294.6
Alaska	364	265.7	1 565	972.0	298	156.0	2 142	1 044.9
Bahama Islands	162	205.1	2	2.5	4	4.8	-	-
Barbados	-	-	-	-	-	-	-	-
Bermuda	318	836.7	13	33.9	2	5.2	7	17.8
British Guiana	...	...	...	...	...	...	...	...
British Honduras	258	382.6	189	271.4	9	12.3	142	187.4
French Guiana	...	...	...	...	45	154.0	30	101.5
Guadeloupe	...	...	202	65.7	8	2.6	2	0.6
Hawaii	80	16.3	8 083	1 572.6	5 346	1 024.1	142	27.2
Jamaica	...	...	...	...	...	...	1	0.1
Leeward Islands:								
Antigua	...	...	...	...	...	...	1 782	3 640.2
Montserrat	-	-	-	-	144	1 059.8	-	-
St. Kitts - Nevis	-	-	-	-	120	238.0	251	482.5
Virgin Islands	...	...	...	...	56	775.1	2	27.1
Martinique	23	8.2	65	22.8	5	1.7	-	-
Puerto Rico	2 004	90.8	3 587	160.8	1 471	65.9	1 761	79.3
Trinidad and Tobago	594	93.9	33	5.1	20	3.0	...	...
Virgin Islands (U.S.)	-	-	146	584.0	85	354.2	1	4.0
Windward Islands:								
Dominica	1	1.9	9	16.4	1 753	3 130.4	1	1.8
Grenada	...	...	...	...	...	...	...	...
St. Lucia	-	-	2 187	2 700.7	17	20.6	39	46.5
St. Vincent	-	-	-	-	-	-	36	49.5

(a) For reporting areas.
(b) Revised Report.
(c) Reporting area (Table 14).
(d) Excluding Yukon and Northwest Territories.
(e) Provisional.
(f) Through November.

TABLE 27

NUMBER OF MEASLES DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	138	0.8	123	0.7	126	0.7	...	...
Bolivia	121	4.0	101	3.3	98	3.2	132	4.2
Brazil (a)	619	10.8	263	4.5	335	5.5	...	...
Canada (b)	173	1.3	177	1.3	236	1.6	140	0.9
Chile	96	1.7	117	2.0	c) 125	2.1	c) 469	7.8
Colombia	1 870	16.5	906	7.8	721	6.0	1 843	15.2
Costa Rica	52	6.5	59	7.2	65	7.6	72	8.2
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	8	0.4	35	1.6	28	1.3	...	...
Ecuador (d)	113	16.6	148	21.1	234	32.6	...	...
El Salvador	525	28.3	458	24.3	1 168	61.3	c) 225	11.7
Guatemala	2 170	77.4	784	27.2	2 457	82.6	...	...
Haiti	...	...	...	...	...	...	...	...
Honduras	326	22.8	386	26.3	440	29.1	...	...
Mexico	7 687	29.8	11 375	42.9	4 466	16.4	...	...
Nicaragua	62	5.9	174	15.9	354	31.4	128	11.0
Panama	112	15.0	76	9.9	e) 49	6.2	127	15.6
Paraguay (f)	17	1.5	13	1.1	...	...	...	...
Peru	3 007	37.1	2 164	26.2	1 318	15.6	...	...
United States	468	0.3	683	0.4	618	0.4	g) 510	0.3
Uruguay	37	1.5	39	1.6	...	...	...	...
Venezuela (h)	440	8.8	369	7.2	351	6.7	315	5.9
Alaska	3	2.2	2	1.2	1	0.5	...	...
Bahama Islands	-	-	-	-	-	-	-	-
Barbados	-	-	4	1.9	-	-	-	-
Bermuda	...	...	...	...	...	...	...	...
British Guiana	12	3.0	...	...	...	...	12	2.7
British Honduras	2	3.0	1	1.4	-	-	4	5.3
French Guiana	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...
Hawaii	-	-	3	0.6	2	0.4	...	...
Jamaica	-	-	-	-	-	-	-	-
Leeward Islands:								
Antigua	-	-	-	-	-	-	2	4.1
Montserrat	1	7.4	-	-	-	-	-	-
St. Kitts - Nevis	-	-	-	-	5	9.9	1	1.9
Virgin Islands	-	-	-	-	-	-	-	-
Martinique	...	...	7	2.5	1	0.3	-	-
Puerto Rico	36	1.6	55	2.5	16	0.7	c) 28	1.3
Trinidad and Tobago	6	0.9	-	-	-	-	-	-
Virgin Islands (U.S.)	-	-	-	-	-	-	...	...
Windward Islands:								
Dominica	-	-	5	9.1	5	8.9	-	-
Grenada	-	-	1	1.3	2	2.6	...	...
St. Lucia	1	1.3	10	12.3	-	-	-	-
St. Vincent	-	-	-	-	-	-	26	35.8

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

TABLE 28

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	127	0.7	112	0.6	184	1.0	192	1.0
Bolivia (a)	43	1.9	18	0.7	10	0.4	b) 24	0.9
Brazil (c)	423	5.3	431	5.2	315	3.7	315	3.8
Canada (d)	191	1.4	298	2.1	265	1.8	300	2.0
Chile	124	2.1	106	1.8	e) 86	1.4	e) 95	1.6
Colombia (a)	512	6.5	352	4.2	423	5.7	691	7.0
Costa Rica	37	4.6	60	7.3	30	3.5	24	2.7
Cuba	25	0.5	13	0.2	9	0.2	...	...
Dominican Republic	...	...	...	...	...	...	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	-	-	-	-	-	-	e) -	-
Guatemala	...	...	...	...	...	...	...	...
Haiti	...	...	...	...	...	...	...	...
Mexico	99	0.4	113	0.4	133	0.5	...	...
Panama	17	2.3	16	2.1	3	0.4	18	2.2
Paraguay (a)	10	0.9	200	16.9	...	...	...	...
Peru (a)	69	2.0	86	2.5	106	3.1	...	...
United States	3 788	2.5	4 164	2.7	4 884	3.1	5 077	3.2
Uruguay	9	0.4	9	0.4	9	0.4	7	0.3
Venezuela (a,e)	1	0.0	7	0.2	1	0.0	...	...
Alaska	3	2.2	7	4.3	8	4.2	9	4.4
Bahama Islands	2	2.5	-	-	2	2.4	-	-
Barbados	2	1.0	-	-	-	-	-	-
Bermuda	...	...	...	...	3	7.7	2	5.1
British Guiana	3	0.7	1	0.2	19	4.4	19	4.3
French Guiana	...	...	...	...	...	...	...	...
Guadeloupe	-	-	-	-	1	0.3	-	-
Hawaii	7	1.4	2	0.4	16	3.1	7	1.3
Jamaica	10	0.7	2	0.1	5	0.3	3	0.2
Leeward Islands:								
Antigua	...	...	...	...	...	...	1	2.0
Montserrat	-	-	-	-	-	-	-	-
St. Kitts - Nevis	-	-	-	-	-	-	...	...
Martinique	-	-	3	1.1	-	-	2	0.7
Puerto Rico	1	0.0	5	0.2	10	0.4	29	1.3
Trinidad and Tobago	...	...	...	...	...	...	...	...
Virgin Islands	1	3.7	-	-	1	4.2	2	8.0
Windward Islands:								
Grenada	-	-	-	-	1	1.3	-	-
St. Vincent	-	-	-	-	-	-	1	1.4

(a) For reporting areas.

(b) Revised Report.

(c) Reporting area (Table 14).

(d) Excluding Yukon and Northwest Territories.

(e) Provisional.

TABLE 29

NUMBER OF MENINGOCOCCAL INFECTION DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	130	0.8	111	0.6	121	0.7	...	...
Bolivia	12	0.4	9	0.3	7	0.2	4	0.1
Brazil (a)	127	2.2	128	2.2	110	1.8	...	...
Canada (b)	76	0.6	89	0.6	87	0.6	99	0.7
Chile	34	0.6	38	0.6	c) 40	0.7	c) 23	0.4
Colombia	...	...	...	...	...	...	23	0.2
Costa Rica	...	...	...	...	2	0.2	4	0.5
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	6	0.3	4	0.2	2	0.1	...	...
Ecuador (d)	1	0.1	2	0.3	1	0.1	...	...
El Salvador	-	-	1	0.1	-	-	c) -	-
Guatemala	11	0.4	4	0.1	11	0.4	...	...
Haiti	...	...	1	0.0	...	...	...	...
Mexico	41	0.2	32	0.1	27	0.1	...	...
Panama	-	-	6	0.8	e) 3	0.4	4	0.5
Paraguay (f)	1	0.1	19	1.6	...	...	...	...
Peru	24	0.3	6	0.1	21	0.2	...	...
United States	974	0.6	1 124	0.7	1 386	0.9	g)1 240	0.8
Uruguay	7	0.3	6	0.2	...	...	...	...
Venezuela (h)	2	0.0	12	0.2	1	0.0	-	-
Alaska	2	1.5	2	1.2	1	0.5	...	...
Bahama Islands	2	2.5	4	4.9	1	1.2	4	4.7
Barbados	-	-	-	-	1	0.5	-	-
Bermuda	...	...	...	...	1	2.6	1	2.5
British Guiana	4	1.0	2	0.5	2	0.5	2	0.5
French Guiana	...	...	...	...	2	6.8	4	13.5
Guadeloupe	...	...	1	0.3	4	1.3	...	...
Hawaii	2	0.4	-	-	-	-	...	...
Jamaica (h)	9	0.6	13	0.9	3	0.2	...	...
Leeward Islands:								
Antigua	-	-	-	-	-	-	1	2.0
Montserrat	-	-	-	-	1	7.4	-	-
St. Kitts - Nevis	-	-	-	-	-	-	2	3.8
Martinique	...	...	8	2.8	6	2.1	2	0.7
Puerto Rico	7	0.3	17	0.8	13	0.6	c) -	-
Trinidad and Tobago	7	1.1	10	1.5	10	1.5	...	...
Virgin Islands	-	-	1	4.0	-	-	...	...
Windward Islands:								
Grenada	2	2.6	7	8.9	-	-	...	...
St. Vincent	-	-	-	-	-	-	1	1.4

(a) Federal District and State Capitals, except city of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) Capital cities of provinces.
(e) Revised Report.
(f) For reporting areas.
(g) Estimate based on a 10 per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 30

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2	0.0	-	-	1	0.0	-	-
Bolivia	22	0.7	10	0.3	55	1.8	-	-
Brazil (a)	55	0.1	20	0.0	65	0.1	10	0.0
Costa Rica	...	...	...	...	...	...	...	...
Ecuador	28	0.9	35	1.1	44	1.3	...	...
Peru	35	0.4	23	0.3	26	0.3	b) 163	1.9
United States	3	0.0	1	0.0	-	-	-	-
Venezuela	5	0.1	8	0.2	-	-	1	0.0
DEATHS								
Argentina	2	0.0	-	-	1	0.0	...	...
Bolivia	10	0.3	6	0.2	8	0.3	-	-
Brazil (a)	10	0.0	4	0.0	6	0.0	1	0.0
Costa Rica	1	0.1	-	-	-	-	-	-
Ecuador (c)	-	-	-	-	-	-	...	...
Peru	77	1.0	73	0.9	60	0.7	...	...
United States	1	0.0	-	-	-	-	d) -	-
Venezuela	1	0.0	3	0.1	1	0.0	-	-

(a) Confirmed and reported from the national territory to health authorities in the Federal District and State Capitals.

(b) Revised Report.

(c) Capital cities of provinces.

(d) Estimate based on a 10 per cent sample of death certificates.

TABLE 31

STATUS OF PLAGUE CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	National Law 11,843 was enacted for the prevention of this disease, and the good results obtained are due to DDT applications, intensive deratization measures, and rat-proof constructions. All river ports and seaports now meet the conditions required by International Sanitary Regulations, and there is an antiplague campaign service at all ports. The investigation of sylvatic plague has been intensified; investigations for plague were made in 20,000 Muridae in 1949, and in 150,000 in 1953. The X. cheopis index is less than 20% per animal, and for some months the absence of this important vector has been confirmed. The Malbrán Institute has a Plague Investigation Section for work on the urban, rural, and sylvatic forms of the disease. During 1946-47 our experts very successfully applied streptomycin in 11 human cases, a measure that is in accordance with the recommendations now made by the WHO Expert Committee on Plague, which met in Bombay in 1953 and which affirms that the use of this antibiotic can reduce mortality to less than 10%, even in the penumonic and septicemic forms.
Bolivia	Plague is a serious problem in Bolivia, where it first appeared slightly over thirty years ago. It began in the south of the Republic a short distance from the Argentine border and advanced rapidly to about 100 km (62 mi.) to the north of the city of Santa Cruz. The infection has covered a long and narrow belt, 550 km (342 mi.) from north to south and 80 to 120 km (50 to 75 mi.) from east to west. At the beginning it was purely sylvatic; later, with the importation of rats during the Chaco War, various outbreaks of domestic plague occurred at the same time. The advance outbreaks were all of sylvatic plague. The domestic plague hosts are the Ratus ratus alexandrinus and the Ratus ratus ratus. As reservoirs of sylvatic plague, the Phillotis wolffsomai and the Hesperomya venustus have thus far been identified from among various species examined. This endemic disease is controlled by the Plague Department, Communicable Disease Division, of the Ministry of Hygiene and Public Health. Its headquarters are in Sucre and it has a fairly well-equipped laboratory. Plague outbreaks occur in various localities every year, almost without exception, without becoming epidemics of importance, owing to the permanent surveillance that is kept. For the investigation of the course of sylvatic plague and the search for some means to check its advance toward the Amazon Valley and to improve control in the area already affected, we are assured of the effective cooperation of the Pan American Sanitary Bureau.
Brazil	The National Plague Service, under the National Department of Health, includes technical and administrative agencies operating at headquarters and in the field, namely, the Epidemiology Section, the Organization and Control Section, and the Administration Section. The program carried out by the districts includes treatment of human cases of plague, laboratory diagnostic activities, antirat and antiflea measures, and health education of the rural population. The work units, under the direction of a specialized physician, cover the entire endemic plague area, which comprises more than 200 municipalities together with the principal ports and cities in the south now free from plague. Field activities are concentrated in places where a

TABLE 31

STATUS OF PLAGUE CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Brazil (Cont.)	case of plague occurs, intensive preventive action being extended to a distance of 6 kilometers. The highest incidence of plague occurred in the State of Alagoas, with Pernambuco and Bahia following next in importance. Cases of plague occurred in the State of Ceará in 1950 and 1951, whereas positive cases were reported in Paraíba only in 1950 and in the State of Rio de Janeiro, in 1952. Investigation work is the basic measure in the program of the Service. Such studies refer particularly to immunization, diagnosis and treatment methods, census of rodent fauna, susceptibility of rodents to plague, epidemiology of plague, and persistence of the virus in the vector organism in silent foci. (Condensed from the Report to the XIV, PASC, pages 9 to 17.)
Canada	No confirmed human cases in recent years.
Cuba	The disease is not present in Cuba, but a permanent antirat service is maintained.
Ecuador	Program in full development.
Mexico	Examination for rodents at ports; boat fumigation and inspection certificates are issued.
Panama	This disease does not exist in the country. Under an agreement concluded between the Republic of Panama and the United States of America, control work is carried out in the international ports of Balboa and Cristóbal by the Public Health Office of the Canal Zone.
Peru	Plague is no longer a problem in the important cities and in ports, where no cases have occurred since 1947. On the other hand, it is a serious problem in the small localities of rural areas at medium altitudes (1,000 to 2,000 meters) (3300 to 6600 ft.) above sea level, especially in areas of thick forest vegetation along the border with Ecuador. A study of the most recent outbreaks in that area revealed only the presence of infected jungle rodents, which were incriminated as solely responsible for the human cases. The presence of these plague-infected rodents in an area of thick vegetation, where they exist in great number and variety, presents a problem of the utmost importance for Peru and for Ecuador, the extent of which cannot as yet be foreseen.
United States	No confirmed human cases occurred during 1953. Infections in animals and in fleas from animals were confirmed during the year.
Venezuela	Two antiplague units composed of 26 workers carry on permanent control work in the affected zone. Activities include classification, autopsy and examination of rodents, periodic DDT treatment of all houses, and rat poisoning based on the use of arsenic in forest areas and Warfarin in dwellings.
	. . . . .
British Guiana	A rat-destruction campaign was carried out in 1953 with the use of rodenticides (Sorexa). A total of 2,642 rats were destroyed.

TABLE 31

STATUS OF PLAGUE CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Hawaii	Voluntary annual immunization in plague area. Booster available on detection of rodent or human plague. Extensive rodent control program, with laboratory examination for detection of plague. DDT dusting routinely, and DDT spraying annually in plague area. Plague infection is found in the Territory of Hawaii in two areas; one located on Maui in the Makawao District, the other in the Hamakua District, Hawaii. The basic objective of the present surveillance and control programs now in operation in the Territory is to provide the people who reside in the endemic plague areas and the people of the Territory the maximum protection against plague infection that is practicable. Towards this end plague surveillance and control programs are conducted in the Hamakua and Maui endemic regions and plague surveillance activities are undertaken at and adjacent to the ports of Hilo, Kahului and Honolulu. Plague surveillance is undertaken to determine where and how much plague infection in rodents and rodent fleas is present in a given area. The rodents which are examined are obtained by trapping, clubbing, gassing or by being found dead. These rodents are taken to the laboratory where together with their fleas they are examined for evidence of plague infection. Plague surveillance is undertaken throughout the known endemic regions with particular emphasis being placed on detecting infection in, and immediately adjacent to, communities. To undertake this type of plague surveillance, that is, to make certain that each community in the region is routinely checked on a daily basis, requires that a large number of snap traps be in continuous operation. Although emphasis is placed on detecting plague infection in and adjacent to communities attention is also paid to correctly delineating the total area involved. Surveillance activities are conducted continuously on the Hilo side of the plague region on the island of Hawaii and also outside of the endemic plague region on Maui. The program has certain long term basis goals. These are: (1) the reduction of rodent populations. (2) the reduction of flea populations. (3) the elimination of rodent harborage and food supplies in and adjacent to buildings. (4) the promotion of ratproofing to break the close association between man, rodents and rodent fleas. (5) research in the field and laboratory to determine epidemiological data and the soundness of control procedures in use or contemplated. To achieve these goals certain routine preventive and control procedures are conducted throughout the year. These are trapping, poisoning, gassing to reduce rodent populations, clearing and burning to reduce rodent harborages, sanitary inspection to promote ratproofing and to reduce rodent harborates and food supplies, and DDT spraying and dusting to kill fleas. When positive plague infection is detected in rodents or rodent fleas or when it occurs in humans these routine control procedures are intensified in the specific area or areas where the infection is found. This coordination of surveillance and control operations is of prime importance from the standpoint of protecting human lives.

TABLE 32

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	4 462	25.9	1 186	6.7	967	5.3	a) 275	1.4
Bolivia (b)	594	26.2	728	29.8	432	17.1	a) 429	16.5
Brazil (c)	749	9.5	1 123	13.6	1 639	19.3	935	11.3
Chile	3 564	61.6	44	0.8	9	0.2	22	0.4
Colombia	4 818	42.5	3 844	33.2	3 235	27.4	5 526	45.6
Ecuador	241	7.6	175	5.4	432	12.9	...	...
Guatemala	10	0.4	3	0.1	1	0.0	...	...
Haiti	...	...	...	...	...	...	...	...
Honduras	...	...	...	...	...	...	...	...
Mexico	762	3.0	27	0.1	-	-	...	...
Nicaragua	181	17.1	6	0.5	...	...	...	...
Panama	-	-	-	-	1	0.1	-	-
Peru (b)	3 612	107.2	1 218	34.8	1 360	39.8	d) 150	4.3
United States	39	0.0	11	0.0	21	0.0	4	0.0
Uruguay	3	0.1	-	-	16	0.6	7	0.3
Venezuela (a)	2 154	81.7	246	8.7	107	3.6	32	1.0
Martinique	-	-	1	0.4	-	-	-	-
DEATHS								
Argentina	46	0.3	26	0.1	12	0.1	...	...
Bolivia	224	7.4	236	7.7	199	6.4	201	6.4
Brazil (e)	2	0.0	15	0.3	28	0.5	...	...
Chile	19	0.3	1	0.0	-	-	-	-
Colombia	180	1.6	218	1.9	242	2.0	408	3.4
Ecuador (f)	5	0.7	1	0.1	1	0.1	...	...
Guatemala	11	0.4	9	0.3	9	0.3	...	...
Haiti	4	0.1	...	...	...	...	...	...
Honduras	20	1.4	34	2.3	23	1.5	...	...
Mexico	153	0.6	54	0.2	31	0.1	...	...
Nicaragua	5	0.5	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-
Peru	3 815	47.1	1 421	17.2	1 079	12.8	...	...
United States	1	0.0	1	0.0	-	-	g) -	-
Uruguay	1	0.0	-	-	...	...	...	...
Venezuela	27	0.5	5	0.1	4	0.1	-	-
Martinique	...	...	1	0.4	-	-	-	-

(a) Revised Report.
(b) For reporting area.
(c) Reporting area (Table 14).
(d) Through November.
(e) Federal District and State Capitals, excluding city of São Paulo.
(f) Capital cities of provinces.
(g) Estimate based on a 10 per cent sample of death certificates.

TABLE 33

STATUS OF SMALLPOX CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	An outbreak of variola minor or alastrim occurred in Tucumán, with 22 non-hospitalized cases, 22 hospitalized cases, and 9 deaths recorded. Nearly all of them were in unvaccinated children under 7 years of age. All were contacts and the source of the disease was a tribe of gypsies who came from the outside, entering the country from the north. This tribe left contacts in both Salta and Jujuy, but no cases occurred because extensive vaccination work has been carried out in the two provinces, even though they have not reached the 80% immunity required by the proximity of the border, which can be crossed in a short time by the large number of laborers coming from outside the country. The production of smallpox vaccine was doubled in the last four years; from 10 million doses in 1949 to 20 million in 1953. During 1953, the procedure used in the preparation of vaccinogen was changed and lyophilizing of vaccine was introduced. Under an agreement signed with the Pan American Sanitary Bureau, the large-scale production of dry vaccine will be initiated at Malbrán Institute, to supply both this country and others; at the same time, an antismallpox campaign is to be developed in Salta and Jujuy, for later extension to other zones desiring to participate in the control work. One remaining problem is that of the small rural communities scattered about in the mountainous regions, where it is difficult to carry on the routine vaccination work. The requirement regarding use of the International Certificate against Smallpox, as recommended by International Sanitary Regulations, is strictly complied with. Qualified personnel stationed throughout the country enable the population to obtain this certificate in the area where they reside.
Bolivia	Although vaccine of good quality and in sufficient quantity is prepared in the country, it has not yet been possible to eradicate smallpox because of the lack of an adequate organization to carry out the vaccination campaign on a national scale. One of the main obstacles has been the difficulty in maintaining the viability of glycerinated vaccine in an extensive subtropical region. To overcome this difficulty, the Pan American Sanitary Bureau is cooperating by providing equipment for the preparation of dry vaccine, within the general plan for the smallpox eradication campaign prepared by the Government of Bolivia with the assistance of the Bureau. The nationwide systematic vaccination program was initiated in September 1953. As of February 1954, 85,175 persons had been vaccinated.
Brazil	The National Department of Health, through its Division of Public Health Organization, is responsible for smallpox control. During the period 1950-1953, some 3 million doses of antismallpox vaccine lymph prepared by the Oswaldo Cruz Institute were distributed to the state health services. The Division, during its 1951 activities, ascertained that of the 16,000 adults vaccinated for the first time against smallpox, 80% showed positive results and of the 6,000 who were revaccinated, 3% were positive.
Canada	There have been no cases of smallpox officially reported in Canada since 1947 and no deaths since 1939.

TABLE 33

STATUS OF SMALLPOX CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Chile	In view of the existence of endemic smallpox in neighboring countries and the outbreaks that occurred in 1950, and following the recommendations of the XIII Pan American Sanitary Conference (Resolution XIX), a systematic vaccination program has been pursued with the aim of covering 80% of the country's inhabitants. The campaign for control of the 1950 benign smallpox epidemic made it possible to vaccinate almost the entire population of the country. In effect, from March to August 1950, 5,328,307 inhabitants of the country were vaccinated. When the epidemic was stamped out, activities returned to the level of 87,000 persons vaccinated for the first time and 711,000 revaccinated in 1953. The Sanitary Agreement between Chile, Peru, and Bolivia has contributed much toward the development of vaccination programs in the highlands of Chile. In the past few years, dry vaccine prepared by the Bacteriological Institute of Chile has been used in rural areas.
Colombia	Local vaccinations are applied by public health agencies. Cases are isolated. Vaccination is compulsory by law.
Costa Rica	Permanent vaccination program.
Cuba	Notifiable disease. Antismallpox vaccination is compulsory.
Dominican Republic	No cases have occurred in several decades. Vaccine is applied periodically in schools and the Health Offices in the provinces, especially in the District Public Health Service and in those areas in which air and sea ports are located. A mass campaign against the disease is now under way and, according to tentative estimates, it is planned to vaccinate from 250,000 to 300,000 persons this year.
Ecuador	A mass vaccination program was initiated this year with a view to eradicating smallpox from the country. A special control department was established.
El Salvador	Routine vaccination. No cases of the disease have been recorded for over 20 years.
Mexico	Since smallpox has practically been eradicated in Mexico, activities are being concentrated on the search for suspected cases (especially patients with chickenpox or varioloid) so as to establish precise diagnoses. Although there are no smallpox cases, antismallpox vaccinations are continued systematically throughout the country and, in 1954, it is planned to vaccinate one and one-half million persons in 14 political divisions of the Republic.
Panama	Vaccination work, which had been carried on systematically in the cities of Panamá and Colón and sporadically in rural areas, has now been organized into a permanent campaign for the purpose of vaccinating the entire population regularly. A mass vaccination program will be initiated this year to cover all inhabitants of the rural areas.

TABLE 33

STATUS OF SMALLPOX CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Paraguay	No cases of smallpox have occurred in almost 10 years. Control work is conducted by the Epidemiology Department through systematic vaccination of the population.
Peru	There has been a systematic, nation-wide vaccination campaign since 1950. Forty-five per cent of the inhabitants have already been vaccinated. The work is being pursued.
United States	Twenty-seven (27) cases of smallpox or suspected smallpox were reported to the National Office of Vital Statistics during 1953. Twelve of these were from Nebraska. However, by the end of the year, all but five cases had been deducted because of a change in diagnosis. The five cases were from Texas, Wyoming, Kansas, North Carolina and Nebraska. In three of these cases the diagnosis was not supported by clinical and epidemiological findings.
Uruguay	All smallpox outbreaks have originated abroad. Under a law of 25 September 1911, vaccination is compulsory. This law, now out-dated, is to be modified by a bill at present before the Chamber of Representatives, for approval within a short time. An Executive Decree of October 1953 provides for mass vaccination, which will cover 90% of the Republic's inhabitants. During last December and January, 378,250 persons were vaccinated. Nationally valid certificates are issued by the Ministry of Public Health, the Military Health Service, municipal authorities, the School Health Services, and other authorized agencies, all with the authorization of the Public Health Ministry. International certificates are issued only by the Public Health Ministry. These are valid for 3 years in the case of positive reaction, in conformity with International Sanitary Regulations.
Venezuela	In addition to routine vaccinations and control of cases and contacts, a nation-wide mass vaccination program, carried out in 4-year cycles, has been in progress since 1949.
	. . . . .
Bahama Islands	Does not occur, but vaccinations are carried out in the schools as a routine. Quarantine at seaports and airports.
Barbados	Vaccination free.
Bermuda	A total of 885 children were vaccinated against smallpox, the largest number on record. The parents of 6 others registered as conscientious objectors. About 500 adults were also vaccinated before traveling abroad.
British Guiana	Vaccination program continues.
British Honduras	Vaccination compulsory at birth.

TABLE 33

STATUS OF SMALLPOX CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
French Guiana	Vaccination is obligatory.
Guadeloupe	The last confirmed smallpox cases date back to several decades. Jennerian vaccination is practiced throughout Guadeloupe in public sessions open to anyone who had not been revaccinated within five years. These are designed specially for those who are legally obliged (children under one year, 10 to 11 years and young persons 20-21 years old).
Hawaii	Compulsory vaccination. Last case, 1913.
Jamaica	Vaccination.
Leeward Islands Antigua	Vaccination compulsory.
Leeward Islands Montserrat	Vaccination.
Leeward Islands St. Kitts - Nevis	Vaccination of infants is to all intents and purposes universally practiced.
Martinique	Vaccination and revaccination is obligatory at the age of 0 to 1 year, and at the ages of 11 and 21 years.
Puerto Rico	The program of immunization has been kept active.
Trinidad and Tobago	Routine vaccination of infants.
Virgin Islands (U.S.)	Total of 5,370 smallpox vaccinations was accomplished among the school population during fiscal year 1953. No problem.
Windward Islands Grenada	Vaccination of infants.
Windward Islands St. Vincent	Satisfactory control.

TABLE 34

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	10 935	63.9	9 900	56.1	9 415	52.1	8 778	47.8
Bolivia (a)	2 786	123.1	2 740	112.2	2 128	84.0	b)3 876	149.3
Brazil	...	...	...	...	...	...	...	...
Canada (c)	6 098	44.5	4 577	32.7	3 788	26.3	2 898	19.6
Chile	...	...	...	...	...	...	...	...
Colombia (a)	27 001	343.8	20 359	243.9	15 981	217.1	23 975	244.1
Costa Rica	1 030	128.6	583	70.7	650	76.2	824	93.5
Dominican Republic	7 182	337.0	8 227	376.9	901	40.3	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	14 088	1 896.1	11 186	1 293.2	8 808	955.4	d)7 479	842.2
Guatemala	2 148	76.6	2 706	93.7	2 143	72.0	...	...
Haiti	103 060	3 346.1	92 356	2 944.1	90 471	2 827.2	...	...
Honduras	...	...	4 459	303.3	3 603	238.2	...	...
Mexico	29 178	113.0	24 117	90.9	22 829	83.7	...	...
Nicaragua	2 883	272.1	2 206	201.9	2 044	181.1	2 466	211.7
Panama	4 978	665.3	1 390	181.3	1 151	146.6	1 150	143.1
Paraguay (a)	7 657	663.5	6 344	536.3	5 492	452.9	...	...
Peru (a)	5 654	167.8	6 619	189.0	5 698	166.9	e)4 636	134.2
United States	217 558	143.8	174 924	114.0	169 198	108.6	150 026	94.8
Uruguay	1 280	53.4	836	34.3	537	21.6	335	13.3
Venezuela (a,d)	25 245	957.0	24 847	878.0	22 183	745.9	20 608	662.8
Alaska	202	147.4	91	56.5	69	36.1	18	8.8
Bahama Islands	96	121.5	101	124.7	42	50.6	112	131.8
Barbados	-	-	-	-	-	-	-	-
Bermuda	90	236.8	65	169.5	41	105.8	42	106.9
British Guiana	991	244.1	775	186.0	874	203.9	682	154.6
British Honduras	253	375.2	185	265.6	81	110.7	232	306.1
Guadeloupe	206	68.2	1 230	400.1	1 540	494.2	1 112	353.6
Hawaii	310	63.1	276	53.7	160	30.7	155	29.6
Jamaica	9 049	645.0	6 907	483.1	5 568	382.2	6 051	407.2
Leeward Islands:								
Antigua	238	528.0	...	...	118	248.0	150	306.4
Montserrat	-	-	-	-	-	-	-	-
St. Kitts - Nevis	318	667.9	600	1 216.5	342	678.3	467	897.7
Virgin Islands	45	649.9	69	975.3	75	1 038.1	58	786.4
Martinique	-	-	50	17.5	26	9.0	14	4.8
Puerto Rico	8 499	384.9	7 381	330.8	6 360	284.8	4 688	211.2
Trinidad and Tobago	1 486	235.0	1 400	215.8	1 164	175.4	...	...
Virgin Islands (U.S.)	105	388.9	880	3 520.0	104	433.3	118	472.0
Windward Islands:								
Dominica	107	198.1	152	276.4	123	219.6	140	245.6
Grenada	1 050	1 363.6	466	589.9	280	359.0	351	423.9
St. Lucia	374	470.5	624	770.6	320	388.5	700	834.3
St. Vincent	...	...	223	320.7	153	216.2	161	221.4

(a) For reporting area.
(b) Revised Report.
(c) Excluding Yukon and Northwest Territories.
(d) Provisional.
(e) Through November.

TABLE 35

NUMBER OF SYPHILIS DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	719	4.2	687	3.9	541	3.0	...	...
Bolivia	236	7.8	180	5.9	279	9.0	324	10.4
Brazil (a)	2 453	42.8	2 205	37.4	2 083	34.4	...	...
Canada (b)	369	2.7	301	2.2	297	2.1	283	1.9
Chile	363	6.3	303	5.2	c) 269	4.5	c) 193	3.2
Colombia	566	5.0	518	4.5	465	3.9	847	7.0
Costa Rica	48	6.0	54	6.5	79	9.3	68	7.7
Dominican Republic	145	6.8	210	9.6	169	7.6	...	...
Ecuador (d)	80	11.7	44	6.3	78	10.9	...	...
El Salvador	308	16.6	277	14.7	229	12.0	c) 190	9.8
Guatemala	50	1.8	24	0.8	26	0.9	...	...
Haiti	53	1.7	34	1.1	47	1.5	...	...
Honduras	18	1.3	17	1.2	20	1.3	...	...
Mexico	1 897	7.3	1 624	6.1	1 511	5.5	...	...
Nicaragua	8	0.8	3	0.3	2	0.2	1	0.1
Panama	19	2.5	13	1.7	e) 31	3.9	19	2.3
Paraguay (f)	280	24.3	277	23.4	...	...	...	...
Peru	165	2.0	208	2.5	174	2.0	...	...
United States	7 568	5.0	6 274	4.1	5 719	3.7	g)5 430	3.4
Uruguay	322	13.4	280	11.5	...	...	...	...
Venezuela (h)	1 424	28.6	1 194	23.3	962	18.3	752	14.0
Alaska	2	1.5	4	2.5	6	3.1	...	...
Bahama Islands	2	2.5	1	1.2	-	-	-	-
Barbados	129	61.7	138	64.8	147	67.7	146	66.1
Bermuda	1	2.6	1	2.6	1	2.6	-	-
British Guiana	52	12.8	56	13.4	38	8.9	43	9.8
British Honduras	3	4.4	4	5.7	-	-	1	1.3
Guadeloupe	...	...	...	...	...	...	1	0.3
Hawaii	17	3.5	15	2.9	14	2.7	...	...
Jamaica (h)	843	60.1	896	62.7	827	56.8	...	...
Leeward Islands:								
Antigua	16	35.5	19	41.0	8	16.8	14	28.6
Montserrat	13	96.0	9	66.2	11	81.0	13	95.0
St. Kitts - Nevis	24	50.4	35	71.0	27	53.6	26	50.0
Virgin Islands	...	...	3	42.4	1	13.8	1	13.6
Martinique	...	...	15	5.3	9	3.1	6	2.1
Puerto Rico	129	5.8	98	4.4	113	5.1	c) 66	3.0
Trinidad and Tobago	49	7.7	8	1.2	...	...	...	...
Virgin Islands	6	22.2	8	32.0	3	12.5	...	...
Windward Islands:								
Dominica	12	22.2	12	21.8	12	21.4	16	28.1
Grenada	18	23.4	15	19.0	14	17.9	...	...
St. Lucia	15	18.9	52	64.2	39	47.4	4	4.8
St. Vincent	19	28.3	5	7.2	23	32.5	34	47.8

(a) Federal District and State Capitals, excluding city of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) Capital cities of provinces.
(e) Revised Report.
(f) For notification areas.
(g) Estimate based on a 10 per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 36

STATUS OF SYPHILIS AND OTHER VENEREAL DISEASES CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	The Department for the Control of Venereal Diseases is responsible for a nation-wide campaign. By national law, the treatment of syphilis is compulsory and there are penalties for any infraction. The work of the national, provincial, and municipal agencies is coordinated by this Department, which standardizes the type of medical and public health material used, the clinical documents, and the nomenclature and classification applied to cases and deaths due to these diseases. Among the measures in force are compulsory reporting of sources of contagion and compulsory treatment of patients. The official and private laboratories that diagnose these diseases are subject to inspection and are given advice; free medication is provided, when necessary, to further the campaign. Close supervision is maintained over publicity given by professionals, clinics, and laboratories. Records are kept of all centers and agencies in the country that are engaged in the antivenereal work. The compulsory treatment consists of injections of penicillin, given free of cost and in sufficient quantity. Antivenereal surveillance is accomplished by: close check of foci and of contacts; detaining patients for treatment; prenuptial examination and certificate, and prenatal examination; group blood tests and individual instruction. Antivenereal health education is carried out by constantly supplying information and facts to the individual, the general public, social groups, and professionals in curative medicine, either by direct action or through publicity. The Museum of Venereology exhibits a useful collection of specimens showing the various aspects of the lesions. A total of 1,088 official and private medical assistance agencies are engaged in the antivenereal work.
Bolivia	At present, the control of these diseases is carried out only in department capitals, through dispensaries directly under the Venereal Disease Department, which was established in November 1953, and in clinics at health centers maintained by the Inter-American Cooperative Public Health Service (SCISP). In the city of La Paz there are seven treat-centers, including the venereal disease section of the General Hospital; the other cities have two centers or, more usually, only one, according to the size of the population. The recently created Department initiated its activities by making a survey of the status of the problem, reorganizing dispensaries with respect to equipment, training personnel, and applying intensive treatment. Centralization of laboratories is another of its objectives. Later, a study will be undertaken of legislation on venereal diseases.
Brazil	The campaign against venereal diseases is carried out by the National Department of Health, through its Division of Public Health Organization. In 1953, the Division had 42 dispensaries in the state capitals and 71 in cities of the interior, together with 28 rapid-treatment centers and four posts for individual prophylaxis. The campaign is carried out on the basis of cooperation between the Federal and the State Governments and other agencies engaged in combating venereal diseases.

TABLE 36

STATUS OF SYPHILIS AND OTHER VENEREAL DISEASES CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Brazil (Cont.)	At the dispensaries, 506,000 persons underwent first examinations, with 117,000 found positive, of which 41% suffered from syphilis, 42% from gonorrhea, and 17% from other venereal diseases. Dispensary personnel made more than three and one-half million visits and one million laboratory examinations. Some 13,000 cases were hospitalized at the rapid-treatment centers.
Canada	Syphilis has shown a continuing downward trend in the death rate and in the number of cases reported over the past few years. From 1950 to 1953 the number of deaths dropped from 369 to 283 and the number of cases reported from 6,098 to 2,898. Gonorrhea has continued at a higher level. From 16,106 cases reported in 1950 the number dropped to 15,290 in 1953; the number of deaths decreased from 3 in 1950 to 2 in 1953.
Chile	Venereal diseases continue to become less important, both clinically and epidemiologically, owing to effective therapy and the campaigns carried out in the past few years. In these programs special emphasis has been laid on such techniques as contact investigation and treatment, control of high morbidity groups, and serological census of the population. At present, venereal diseases play only a limited role in causes of death. In spite of the fact that the incidence of gonorrhea is not very much lower than it was some years ago, a situation due in part to reinfections, its prevalence is considerably lower because of its short duration.
Colombia	Some case control by public health agencies. Treatment. Prevention and educational activities.
Costa Rica	Through serological surveys, together with health education and publicity, the campaign in areas of high incidence is being intensified with excellent results.
Cuba	This disease is not notifiable in Cuba. A Special Fund is concerned with this disease.
Dominican Republic	Control procedure: treatment of cases and contacts at dispensaries; serological control of cases and contacts; serological control of pregnant women; prophylactic treatment of prostitutes.
Ecuador	Demonstration program at Portoviejo, Manta, and Bahía, using penicillin. Prophylactic control at all provincial capitals. A special department has been established in Guayaquil to carry out an expanded program based on treatment with penicillin and search for contacts.
El Salvador	There are 48 antivenereal treatment centers in the country. Sufficient quantities of antibiotics are available to maintain the campaigns.
Haiti	A Venereal Disease Control Section was established in July 1952.
Mexico	Country-wide treatment with penicillin for syphilis and gonorrhea and sulfonamides principally for soft chancre and Nicolas-Favre

TABLE 36

STATUS OF SYPHILIS AND OTHER VENEREAL DISEASES CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Mexico (Cont.)	disease. Sufficient drugs are available for the treatment of patients at the services of the Ministry. In certain localities, some patients contribute voluntarily toward the cost of the penicillin. Case detection, a measure considered to be of basic importance at present, is being intensified. Short courses on the present status of prevention, diagnosis, and treatment are given to large groups of physicians and midwives in different parts of the country, with a view to obtaining the collaboration of such professionals. Wherever regulated prostitution exists, prostitutes are treated with weekly injections of procaine penicillin with aluminum monostearate. Laboratory techniques are being standardized, through the use of cardiolipin in making serological tests.
Nicaragua	Case reporting is done by the Public Health Centers. Private physicians do not cooperate in this program.
Panama	Anti-venereal measures are applied especially in the cities of Panamá, Colón, David, and Puerto Armuelles. Syphilis treatments are based exclusively on penicillin. Patient-control work is being improved through the health units. Health education activities have been increased. Prostitution is banned by law, but the Department of Public Health, for various reasons, is obliged to treat promiscuous women, through regular examinations and residual injections of penicillin as a means of prevention. This work has resulted in a decrease in syphilis cases and it can be pointed out that, during the last year, the Department has not received a single report of congenital syphilis.
Paraguay	The disease is an important public health problem. An intensive venereal-disease control and treatment campaign is being conducted by the Health Centers.
Peru	The Venereology Department was reorganized in 1952 and at present modern control procedures are being employed.
United States	Progress in venereal disease control is evidenced in the downward trends in general mortality from syphilis, infant mortality from this disease and first admissions to mental hospitals with psychoses due to shyphilis.
Uruguay	As the result of public information programs, the use of antibiotics in all of the nation's dispensaries, and the intensive work of the Department of Welfare and Venereal Disease Prophylaxis, the number of cases reported by the various services continued to decrease, dropping from 2,836 in 1947 to 494 in 1953. Of this last number, 384 were in the capital and 110 in rural areas. Of the more than 30,000 persons appearing for consultation per year, one-third were in the capital and the remainder in rural areas. Twice a week prostitutes undergo medical treatment at the Public Health Service for Sexual Hygiene, and those who have no syphilis background report every three weeks for blood tests. Incidence of infection dropped from 29.0% in 1950 to 1.5% in 1953. Under

TABLE 36

STATUS OF SYPHILIS AND OTHER VENEREAL DISEASES CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay (Cont.)	existing legislation, venereal-disease patients continue to undergo compulsory treatment during the contagious period. Measures were taken to guarantee a sufficient supply of penicillin and other antisyphilis products in all dispensaries in the country, through constant replenishment of stock. Antivenereal disease campaigns, carried directly to the public and to the schools, included meetings, radio programs, interviews, distribution of pamphlets, etc., and ended each year with an "Antivenereal Disease Week." (Condensed from the Report to the XIV PASC, pages 9 to 16.)
Venezuela	Two hundred and twenty-one (221) Antivenereal Disease Dispensaries, 148 of which are in rural areas, carry on case detection and free treatment, in connection with programs of the health units, health centers, and rural medication stations.
	. . . . .
Alaska	Investigation of contacts (mostly military) with treatment by private physicians under Health Department program.
Bahama Islands	Regular clinics, with follow-up of contacts.
Barbados	Venereal disease clinics at hospital and health centers.
Bermuda	Examination of food handlers and hotel employees.
British Guiana	Control is limited to laboratory diagnosis of suspect cases and treatment; tracing of cases regarded as the source of infection, and treatment of those found to be infected.
British Honduras	Venereal disease clinics are operated at all hospitals in the territory. Treatment is free. Follow-up of contacts by the public health nurse commenced in 1953.
French Guiana	A project is under study.
Guadeloupe	Cases are detected by physicians in their laboratories and by dispensaries operated under the Department of Health. The dispensaries offer treatment free of charge. Cases of venereal disease, and particularly of syphilis, are still quite numerous on Guadeloupe.
Hawaii	Program restricted due to decline of venereal disease and available funds. Arrival of large contingent troops from high prevalence areas may demand an increase in the program. No significant recent development in the control program.
Jamaica	The programs for the control of venereal diseases and yaws were placed under the supervision of one specialist. An extensive program for the eradication of these diseases with the participation of WHO was under consideration at the close of the year. Health films are shown to the public at large. Illustrated lectures are given to college students, nurses, probation officers, etc.

TABLE 36

STATUS OF SYPHILIS AND OTHER VENEREAL DISEASES CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Leeward Islands Antigua	Penicillin is replacing arsenicals and bismuths. Increasing use is being made of public health centers, where treatment is free.
Leeward Islands Montserrat	Kahn examination, venereal disease clinics, use of penicillin, control of contacts.
Leeward Islands St. Kitts - Nevis	The bases of the program are the maintenance of venereal disease clinics at 8 centers in the Presidency, the rapid treatment of syphilis with penicillin, and the finding of new cases by the epidemiological investigation of known cases. There is notable fall in the number of new cases of syphilis.
Leeward Islands Virgin Islands	There is a decrease of incidence of early syphilis.
Martinique	Search has been stepped up, but notification is irregular.
	The Arthur Vernes dispensary of Fort de France insures free detection and treatment. Detection is also achieved by systematic blood tests at the time of prenuptial and prenatal consultations, provided by law for the protection of maternity and childhood.
Puerto Rico	A decrease in cases of early syphilis has been observed, while the number of gonococcal cases has remained stationary. There were 6,706 cases of gonorrhea reported in 1951, as compared with 6,575 in 1952.
Surinam	In 1950, a second venereal disease specialist was employed for the preventive service. Contacts are traced, examined, and treated if necessary. An adequate legislation makes this possible and with the use of new drugs fewer complications of these diseases are observed.
Trinidad and Tobago	Diagnostic clinic service and treatment. Serological tests of adults and expectant mothers. Venereal disease education. Field clinics.
Virgin Islands (U.S.)	A mass blood testing program was conducted during May and June 1951 by the Venereal Disease Division of the Public Health Service, in cooperation with the Health Department. Roughly 50% of the total (28,000) population of the Islands were tested; all of the participants were given 600,000 units of procain penicillin with aluminum monostearate as a prophylactic treatment for gonorrhea and/or primary syphilis. Slightly over 11% of those tested had a frank positive or weakly positive VDRL test. This program led to the discovery of 709 previously unknown cases needing treatment and an additional 486 were again treated. The 1,195 cases diagnosed as syphilis equaled 9.7% of those screened.
	Mainly as a result of reductions in Federal Venereal Disease funds, practically no program of venereal disease control exists in the Islands at the present time. Extremely limited diagnostic and treatment services are available through hospital out-patient clinics but to all intents and purposes, there is no active case finding program.
Windward Islands St. Lucia	No special control program. Clinics have been established at most medical stations.
Windward Islands St. Vincent.	Progress not satisfactory.

TABLE 37

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	9 725	56.6	9 835	55.7	12 850	71.2	10 521	57.2
Bolivia (a)	3 166	139.8	3 608	147.7	3 940	155.5	b) 4 894	188.5
Brazil (c)	19 105	333.5	12 608	359.6	10 772	298.2	9 406	293.1
Canada (d)	12 429	90.8	11 152	79.7	10 506	72.9	10 545	71.5
Chile	...	...	...	...	...	...	...	...
Colombia (a)	11 137	141.8	10 123	121.3	9 401	127.7	13 599	138.5
Costa Rica	631	78.8	693	84.0	749	87.8	622	70.6
Cuba	1 102	21.0	1 337	25.1	1 569	29.1	...	...
Dominican Republic	1 730	81.2	1 856	85.0	780	34.9	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (a)	2 506	337.3	3 474	401.6	3 319	360.0	e) 2 410	271.4
Guatemala	2 633	93.9	2 901	100.5	3 195	107.4	...	...
Haiti	1 848	60.0	1 105	35.2	2 330	72.8	...	...
Honduras	...	...	843	57.3	678	44.8	...	...
Mexico	7 354	28.5	8 103	30.5	7 456	27.3	...	...
Nicaragua	967	91.3	845	77.3	1 052	93.2	1 347	115.6
Panama	1 748	233.6	1 421	185.3	1 340	170.6	b) 1 159	144.2
Paraguay (a)	1 243	107.7	1 190	100.6	1 197	98.7	...	...
Peru (a)	15 496	459.8	19.640	560.8	17 919	525.0	f) 16 386	474.3
United States	121 742	80.5	118 491	77.3	109 837	70.5	106 925	67.5
Uruguay	2 238	93.3	2 173	89.1	1 562	63.0	1 439	57.0
Venezuela (a,e)	9 824	372.4	9 120	322.3	9 607	323.0	8 493	273.2
Alaska	780	569.3	589	365.8	956	500.5	775	378.0
Bahama Islands	87	110.1	83	102.5	88	106.0	94	110.6
Barbados	78	37.3	77	36.2	83	38.2	101	45.7
Bermuda	24	63.1	13	33.9	7	18.1	4	10.2
British Guiana	272	67.0	279	67.0	209	48.8	109	24.7
British Honduras	93	137.9	77	110.6	115	157.2	86	113.5
French Guiana	...	...	-	-	-	-	-	-
Guadeloupe	21	7.0	5	1.6	12	3.9	3	1.0
Hawaii	372	75.8	551	107.2	620	118.8	585	111.9
Jamaica	996	71.0	859	60.1	876	60.1	958	64.5
Leeward Islands:								
Antigua	28	62.1	16	34.6	24	50.4	29	59.2
Montserrat	15	110.8	25	183.9	11	81.0	-	-
St. Kitts - Nevis	42	88.2	29	58.8	22	43.6	20	38.4
Virgin Islands	6	86.6	34	480.6	27	373.7	20	271.2
Martinique	292	104.3	246	86.2	292	100.9	300	102.6
Puerto Rico	5 866	265.7	6 079	272.5	6 236	279.3	5 238	235.9
Trinidad and Tobago	411	65.0	473	72.9	428	64.5	...	...
Virgin Islands (U.S.)	8	29.6	8	32.0	11	45.8	5	20.0
Windward Islands:								
Dominica	108	200.0	77	140.0	71	126.8	82	143.9
Grenada	28	36.4	16	20.3	36	46.2	34	41.1
St. Lucia	86	108.2	136	167.9	194	235.6	142	169.2
St. Vincent	52	77.6	96	138.1	59	83.4	57	78.4

(a) For reporting areas.
(b) Revised Report.
(c) Reporting area (Table 14).
(d) Excluding Yukon and Northwest Territories.
(e) Provisional.
(f) Through November.

TABLE 38

NUMBER OF TUBERCULOSIS DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	8 942	52.0	8 470	48.0	7 943	44.0	...	...
Bolivia	1 430	47.4	998	32.7	1 651	53.4	1 028	32.9
Brazil (a)	12 461	217.6	12 305	208.7	9 402	155.1	...	...
Canada (b)	3 583	26.2	3 417	24.4	2 457	17.1	1 810	12.3
Chile	9 282	160.4	8 755	149.3	c) 6 564	110.4	c) 5 239	87.0
Colombia	4 107	36.2	4 202	36.3	3 652	30.8	3 579	29.6
Costa Rica	412	51.4	417	50.5	340	39.8	224	25.4
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	1 341	62.9	1 265	57.9	1 380	61.7	...	...
Ecuador (d)	1 379	205.5	1 189	169.9	1 096	152.9	...	...
El Salvador	722	38.9	690	36.7	648	34.0	c) 583	30.2
Guatemala	1 540	54.9	1 460	50.6	1 520	51.1	...	...
Haiti	181	5.9	279	8.9	230	7.2	...	...
Honduras	292	20.4	326	22.2	354	23.4	...	...
Mexico	10 588	41.0	11 201	42.2	9 993	36.6	...	...
Nicaragua	221	20.9	158	14.5	154	13.6	105	9.0
Panama	577	77.1	464	60.5	e) 422	53.3	313	28.5
Paraguay (f)	394	34.1	391	33.1	...	...	...	...
Peru	6 271	77.4	6 993	84.6	5 896	70.0	...	...
United States	33 959	22.5	30 863	20.1	24 621	15.8	g) 19 870	12.6
Uruguay	1 489	62.1	1 299	53.3	...	...	...	...
Venezuela (h)	6 121	122.9	5 999	117.3	5 883	112.2	4 865	90.5
Alaska	243	177.4	234	145.3	173	90.6	...	...
Bahama Islands	87	110.1	75	92.6	58	69.9	47	55.3
Barbados	85	40.7	110	51.6	78	35.9	64	29.0
Bermuda	2	5.3	7	18.3	1	2.6	-	-
British Guiana	205	50.5	178	42.7	168	39.2	149	33.8
British Honduras	38	56.4	39	56.0	37	50.6	23	30.4
French Guiana	...	...	15	51.9	16	54.7	11	37.2
Guadeloupe	14	4.6	24	7.8	38	12.2	35	11.1
Hawaii	117	23.8	68	13.2	67	12.8	...	...
Jamaica (h)	1 109	79.1	1 013	70.8	963	66.1	...	...
Leeward Islands:								
Antigua	19	42.2	28	60.5	24	50.4	19	38.8
Montserrat	14	103.4	7	51.5	5	36.8	11	80.4
St. Kitts - Nevis	51	107.1	39	79.1	23	45.6	19	36.5
Virgin Islands	3	43.3	8	113.1	3	41.5	1	13.6
Martinique	...	...	159	55.7	110	38.0	75	25.6
Puerto Rico	2 861	129.6	2 654	119.0	2 092	93.7	c) 1 046	47.1
Trinidad and Tobago	470	74.3	416	64.1	330	49.7	...	...
Virgin Islands (U.S.)	6	22.2	5	20.0	7	29.2	...	...
Windward Islands:								
Dominica	60	111.1	45	81.8	64	114.3	53	93.0
Grenada	28	36.4	36	45.6	27	34.6	...	...
St. Lucia	70	88.1	74	91.4	76	92.3	25	29.8
St. Vincent	46	68.6	45	64.7	45	63.6	48	66.0

(a) Federal District and State Capitals, excluding city of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) Capital cities of provinces.
(e) Revised Report.
(f) For reporting area.
(g) Estimate based on a 10 per cent sample of death certificates.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	The campaign against tuberculosis is carried out by national, provincial, municipal, and private agencies. An Antituberculosis Department is attached to the Ministry of Social Welfare and Public Health. Since the establishment of the provincial Ministries of Public Health, each of these bodies has maintained its own Provincial Council or Committee as a local campaign agency, to which the Central Government provides support, gives assistance in drawing up plans of work, and offers financial aid. Some labor unions, such as that of the railway workers, have welfare organizations devoted especially to antituberculosis work, in which they receive help from the State. Attempts are being made to establish citizens' groups to aid in the campaign work. Several of the Government Ministries take part in the preventive work, when large groups are concerned: the Ministry of Education, in school groups; the Ministry of National Defense, collaborating with the Ministry of Public Health, in groups entering military service; the Service for Periodic Examinations of the Population, which carries out mass X-ray examinations and tuberculin tests. There are 9,806 beds available for hospital care of tuberculosis patients. This number is insufficient to meet the minimum requirements, because earlier diagnoses are increasing the number of apparent cases that require beds and, in addition, through the action of antibiotics, many acute, grave, and incurable patients become chronic cases who suffer from more benign forms of the disease and occupy a portion of these beds. The preventive campaign is conducted through education of the public and vaccination with BCG. In order to standardize this vaccine and to produce it in the country, a factory in Jujuy and a model plant in the Federal Capital are now being completed. In the meantime, expert personnel are being trained for the mass vaccination work. Close attention is given to the recuperation of the tuberculosis patient, and workshops have been established for men and women in the various hospital establishments.
Bolivia	The Tuberculosis Department, which was organized in 1936, initiated its activities with encouraging effort and effectiveness but later reached a standstill. The bronchopulmonary dispensaries, together with the tuberculosis clinics at the health centers, are the principal antituberculosis services, but they are unable to control all cases in the department capitals, which are the only places where they operate. To the 369 special beds for tuberculosis patients distributed between a hospital in La Paz and special wards in general hospitals in capitals of the other departments, another hospital with 198 beds will soon be added. Furthermore, the National Social Security Fund is constructing another small hospital with about 60 beds. However, the 630 beds soon to be available will fill only one fifth of the need. According to the annual average of 1,500 deaths recorded in statistics, the number of beds should be at least doubled, taking into consideration the deficient methods of diagnosis, especially in rural areas. Because of the scarcity of public health nurses, the work of educating the tuberculosis patient and members of his family is conducted only on a very limited scale.

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Bolivia (Cont.)	BCG vaccine has been prepared for several years, but vaccination has reached only 7,000 children. Efforts are now being made to improve and expand that service. Two phthisiologists have just gone to Ecuador to take a short training course in BCG vaccination sponsored by the Pan American Sanitary Bureau, and it has been requested that the chief of the laboratory where the vaccine is prepared in Bolivia receive a fellowship to study the World Health Organization requirements for the preparation of BCG vaccine.
Brazil	The National Tuberculosis Service, National Department of Health, is the specialized agency responsible for the antituberculosis program and for the National Antituberculosis Campaign. The laboratory of the Ataulfo de Paiva Foundation produces the BCG vaccine in Brazil. In 1950, 719,000 doses of vaccines of various types were distributed; the supply service distributed in 1953 more than three and one-half million doses to the Brazilian states, to the Republic of Argentina, and to private individual. The Oswaldo Cruz Institute is the center for experimental studies. The National Tuberculosis Service, which formerly constructed hospitals and sanatoria for management by states or private institutions, since 1952 has been responsible for the up-keep of the institutions constructed, among which are six large groups of sanatoria operating in Curicica, Campos, Taracanaú, Aracajú, Manáus, and Mossoró. The specialization courses offered to medical professionals at first lasted 6 months, but have now been extended to 18 months. In 1953, 31 physicians completed the course, with 43 and 50 additional physicians attending the two study groups now being held. Courses are also offered for nurses and auxiliary personnel. The number of available beds for tuberculosis patients increased in the last 4-year period from 15,837 to 19,773, and about an equal number of beds are in more or less advanced stages of completion. Chest X-ray survey was given due attention by the Service's stationary and mobile units and by agencies affiliated with the Service through conventions or agreements.
Canada	There has been a marked improvement in tuberculosis control in Canada in recent years. In 1953 there were 10,545 new cases reported in Canada and 1,810 deaths as against 3,583 deaths in 1950 and 12,429 cases reported. The new drugs have even succeeded in showing a marked improvement in the death rate among older persons in the population.
Chile	An annual average of one hundred thousand radiological examinations are made among well persons and suspect cases, with a prevalence of 3.5% recorded. The examinations are made by stationary and mobile teams. Also, diagnoses are made in the diagnostic and treatment clinics. There are 24 clinics for outpatient and dispensary treatment throughout the country. For hospitalization, there are 5,350 beds available exclusively for tuberculosis patients. Up to May 1951, 158,639 non-reactors had been vaccinated with BCG. Since that time, an intensive coordinated vaccination program has been undertaken in the urban areas of the country. In

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Chile (Cont.)	1952, 588,583 persons were vaccinated, representing 62.73% of the estimated total of non-reactors in those areas. During 1953, 120,000 non-reactors were protected. As to economic security, existing legislation grants to workers with tuberculosis approximately 80% of their salary. Varying security is provided to persons incapacitated by the disease, according to the amount and total time of their contributions. No rehabilitation program is undertaken. Research on the problem of tuberculosis is conducted in local programs and by some hospital establishments. Until mid-1953, the program was administered by several medical care institutions. Insofar as results are concerned, there are no adequate means of evaluation.
Colombia	Case detection is carried out by the local epidemiological centers. Care service is provided in dispensaries and sanatoria.
Costa Rica	Using stationary and mobile units, programs for X-ray examination of apparently healthy groups and mass vaccinations with BCG are being increasingly intensified. A reorganization plan was carried out to provide a larger number of beds and better hospital care for patients.
Cuba	Notifiable disease. There is a National Tuberculosis Council specifically charged with the control of this disease.
Dominican Republic	The following procedures are used in the control program: tuberculin test (children and adults); BCG vaccination (negative tuberculin); fluoroscopic and radiologic examination (adolescents and adults); out-patient treatment; hospitalization of patients in specialized hospital (500 beds).
Ecuador	Case work is entrusted to the Ecuadorian Antituberculosis League, which is maintained by national tax funds and others. Preventive work was started in 1950 with the Mass Vaccination Program of the entire non-reactor population, and the National Antituberculosis Service is now carrying out a nation-wide control program.
El Salvador	Seven diagnostic centers were established in the country, and 16 treatment centers (7 hospitals, 8 dispensaries, and 1 sanatorium) are in operation. The number of tuberculosis-patient beds increased from 300 to 700 in the last four-year period. A nation-wide BCG vaccination campaign was completed, and two new hospitals for tuberculosis patients will be in operation by the beginning of 1954.
Haiti	A BCG program was initiated about two years ago. More than 15,000 children have been vaccinated.
Mexico	Through its operating program, the National Antituberculosis Campaign is endeavoring to increase the number of beds for tuberculosis patients, and within three months will make available 200 beds in the Federal District and 100 beds in the City of Tampico, Tamps. One or various hospitals are planned for the northern part of the country, their capacity to be in accordance with existing conditions. A new dispensary was constructed, equipped, and put into operation in the State of Querétaro and two more will be constructed this year. Three others already constructed will also be equipped and put into operation.

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Mexico (Cont.)	Steps were taken to make available to tuberculosis patients, especially the indigent ones, treatments with antibiotics which have proven effective. Sufficient amounts of the antibiotics are being provided for free distribution to the important centers of the country. In addition, arrangements are being made to sell antibiotics at cost price to persons of modest means, the actual cost to them being estimated at one half the commercial price. Through its technical office ("Oficina de Dirección Técnica"), the Campaign is continuing to coordinate activities throughout the Republic. Fluorographic work among apparently healthy groups is being intensified in order to increase the work of case detection to a maximum. Some pamphlets on tuberculosis were issued for health education of the public. In cooperation with the Ministry of Public Education, it is planned to establish a Model Dispensary this year for service exclusively to school children. BCG vaccination work, on a strictly voluntary basis, is continuing among community groups.
Nicaragua	Case reporting is done by the health centers. Private physicians do not cooperate in this program.
Panama	The necessary steps have been taken by the Department of Public Health for the reorganization of the National Antituberculosis Campaign, which now comprises the following services under a single command: diagnostic and out-patient treatment centers (dispensaries in Panamá, Colón, and David); preventive services (BCG campaign, mass X-ray services); curative centers (Nicolás A. Solano Hospital and the tuberculosis ward at the Santo Tomás Hospital, 450 beds); isolation centers. BCG vaccination has been extended throughout the country; up to the present time, 365,526 tuberculin tests have been made and BCG has been applied to 190,144 persons. Dispensary services are being improved in the cities of Panamá and Colón and a dispensary is about to be constructed in Chiriquí. Funds have been appropriated for the construction of two isolation centers: one in the city of Colón and the other at Los Santos (200 beds). The mass X-ray campaign is carried out routinely through the mobile units and the national dispensaries; however, these activities have been intensified this year.
Paraguay	Tuberculosis is an important public health problem. A campaign is under way with the support of twelve dispensaries and one hospitalization sanatorium, and an intensive BCG vaccination program is to be initiated next year.
Peru	The program against tuberculosis is directed toward three objectives: Prevention: (locating sources of contagion, biological protection: through tuberculin and X-ray surveys and BCG vaccination, respectively). This work is conducted through preventive medicine centers (four mobile X-ray units and 14 antituberculosis dispensaries). Care: (isolation, cure, and rehabilitation of the patient: through dispensaries, special wards for children and adults attached to general hospitals and maternity hospitals, and regional hospital-sanatoria and preventoria for children).

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Peru (Cont.)	Social Work: (financial protection for the patient and his family: through compulsory social insurance and Social Aid Fund). According to universally accepted standards, the estimated number of beds required is 7,029. Efforts are being made to gradually cover the present deficit of 3,450 beds through construction of regional hospital-sanatoria in the northern and northeastern parts of the country, and completion of the one now being constructed in the south, each to have a capacity of at least 800 beds. Together with these activities, impetus is being given to the construction of modern neighborhood units to replace unhealthful dwellings, and the population is being encouraged to improve their daily diet. These activities, together with other projects to improve the general welfare, and the introduction of the new advances of science, such as antibiotics, have done much to further the national anti-tuberculosis campaign. The resources available for the campaign rose from 7,124,103.16 soles in 1948 to 22,611,281.48 soles in 1953 (and to an even higher amount in 1954). This does not include the small amounts derived from the Anti-tuberculosis Christmas Seals, a program instituted some years ago.
United States	Progress in tuberculosis control continued as evidenced by a downward trend in new cases of the disease reported, as well as by a continued decline in mortality from the disease. In 1949 a total of 134,000 new cases and 39,000 deaths were reported, whereas in 1953 preliminary data indicate that about 105,000 new cases were reported and 20,000 deaths occurred.
Uruguay	The Honorary Committee for the Antituberculosis Campaign has been active since 1940. This Committee is composed of prominent men of science, commerce, and industry, and combines the efforts of various public and private institutions. With full autonomy and its own resources, the Committee has cooperated with the Phthisiology Institute, the National Committee on Physical Education, and the Inter-American Cooperative Public Health Service. In the period 1950 to 1953, its principal field of activities was as follows. In 1950, the mobile dispensaries completed 520,973 examinations and 199,958 BCG vaccinations in the interior of the country. The bacillus-type lesions were recorded in 5,182 cases, the majority of which had been unknown. In addition, 250,000 persons were examined in Montevideo. In 1951, a survey was made of the inhabitants of the coastal and interior Departments and of Montevideo. In 1952, mass radiographic examinations were carried out on a large scale. In 1953, the second Roentgen-tuberculin survey was made in various departments, public and private school students in San José were examined, a second examination of the inhabitants of Montevideo was made and the second investigation of the inhabitants of the entire interior was successfully carried out, with 543,410 persons examined and 195,779 vaccinated with BCG. Presumably bacillus-type lesions were found in 3,029 new cases. During 1950, 23,561 pensions were paid. In 1951 and 1952, pension payments reached 23,935 and 25,203 persons, respectively. In 1953, 16,720 pensions were paid in Montevideo, and 12,926 in the interior, making a monthly average of 2,400 payments. The Honorary Committee, in addition, is authorized to restore or repair dwellings used to house tuberculosis patients who are under

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay (Cont.)	care; to acquire and equip ambulances, mobile dispensaries; to construct and equip hospitals, sanatoria, etc. The Committee also carried out profitable health education work. The funds of the Honorary Committee, provided by the law that established it, amounted to 6 million Uruguayan pesos in 1950 and to more than 9 millions in March 1954. In April 1954, the IV Uruguayan Tuberculosis Congress was held in Montevideo, with the attendance of eminent tuberculosis specialists from the Americas and from Europe. At that meeting was originated the idea of having other countries of the Americas send fellowship students for on-the-spot study of the techniques applied by the Honorary Committee in the antituberculosis campaign. (Condensed from the Report to the XIV PASC, pages 5 to 8.)
Venezuela	In Venezuela 25 antituberculosis dispensaries, operating in first category health units, make up the "Primary Chain" in the antituberculosis campaign; 19 of these have 70 mm. fluorophotographic equipment. In the second-category health units and in health centers, 40 public health phthisiology services (radiological diagnosis, prophylaxis, and BCG vaccination) make up the "Secondary Chain." One hundred and thirty-nine (139) rural medication clinics are connected with services of the Primary and Secondary Chains in a minimal plan or radiological examinations for special groups, home prophylaxis, and BCG vaccination. This is called the "Tertiary Chain." Out-patient treatment with the use of new antibiotic and chemotherapeutic agents was applied partially in the Primary and Secondary Chain services, under the direction of a tuberculosis specialist. There are now in service 2,284 beds in 13 antituberculosis sanatoria, which operate directly under the Antituberculosis Organization. BCG vaccinations are applied first as an intensive campaign carried out by special teams composed of one physician and one nurse. This campaign serves to train the local staff of the public health services, who are entrusted thereafter with the routine application of vaccine in maternity hospitals, maternal and child health services, school health services and antituberculosis services (dispensaries, public health tuberculosis services, and the rural medication clinics of the Tertiary Chain). . . . . .
Alaska	Tuberculin testing; community X-ray surveys (by land, air, and sea units). Ambulatory chemotherapy in isolated areas as a special project of the Arctic Health Research Center (in cooperation with Alaska Department of Health and Alaska Native Service). Hospitalization in Alaska and State of Washington.
Bahama Islands	All cases and contacts are examined. About 60 beds are available at Prospect Hospital. Out-patient clinics operate twice weekly. Proposals for a control program have already been submitted to WHO.
Barbados	A BCG program is planned. A 50-bed hospital scheme is in hand, as are a chest clinic and out-patient service.
Bermuda	One-half of the adult population has had chest X-ray.
British Guiana	Plans are under way for assistance from WHO and UNICEF in the organization of an antituberculosis and BCG campaign on a

TABLE 39

STATUS OF TUBERCULOSIS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
British Guiana (Cont.)	territory-wide basis. The definitive program is to commence early in 1954.
British Honduras	A 35-bed sanatorium was constructed in 1951. Streptomycin and Rimifon treatment was introduced in 1952-53. A BCG campaign was started in September 1953 and completed in April 1954. A chest clinic was started in 1953.
French Guiana	It was decided to make vaccination with BCG obligatory.
Guadeloupe	Cases of tuberculosis are detected by the phthisiology service of the Basse-Terre Hospital and by the radiology service of the Pointe-à-Pitre and Saint-Claude Hospitals, where out-patients are treated. The search is supported by a mobile dispensary equipped with X-ray installations and placed under the charge of a full-time physician. Treatment will be given in a sanatorium, the construction of which it is planned to complete in the next few years.
Hawaii	Continued emphasis on mass chest X-ray of communities, institutions, and special groups with intensive diagnostic and follow-up procedures for abnormal pulmonary conditions found in these surveys, extensively using sputum, trachea lavage and gastric lavage cultures and tomographic studies.
Leeward Islands Antigua	A new 18-bed ward was brought into use during 1953.
Leeward Islands Montserrat	Isolation services will be provided in a ward which is under construction. Use is made of streptohydrazid.
Leeward Islands St. Kitts - Nevis	After remaining at a consistent average of about 50 deaths a year until 1950, tuberculosis mortality has fallen steadily in the last three years and there were only 19 deaths from this disease in 1953.
Leeward Islands Virgin Islands	A BCG campaign is planned for 1955. X-ray equipment for 1954-55.
Martinique	Detection has been intensified by the increase of rural medical services. Vaccination with BCG is carried on. Hospital opportunities were increased with the opening of a new sanatorium in 1951. Surgical service is foreseen for the year 1955.
Puerto Rico	Problems are: the detection of hidden cases for modern treatment; hospitalization of cases which merit it.
Surinam	In 1950, a well-equipped, but small tuberculosis bureau was opened. In January 1953, a new modern tuberculosis hospital for 52 patients was put into operation. A large, modern tuberculosis consultation bureau was built and is ready for use.
Trinidad and Tobago	BCG campaign. Chest clinic X-ray service. Isolation and treatment facilities.
Virgin Islands (U. S.)	Health Department provides a complete medical care program for tuberculosis patients. There are adequate beds available for hospitalization of all cases. Two chest clinics are in operation. An active case finding program is directed toward special groups. All hospital admissions routinely receive an X-ray unless they have had one in the past 6 months. All food-handlers and members of high school senior classes have annual X-rays.
Windward Islands Grenada	Segregation, mainly.
Windward Islands St. Vincent	Some progress; statistics indicate no increase in cases.

TABLE 40

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	985	5.7	1 226	6.9	2 632	14.6	2 031	11.1
Bolivia (a)	599	26.5	486	19.9	520	20.5	b) 879	33.9
Brazil (c)	2 051	25.9	1 832	22.3	1 725	20.3	1 611	19.6
Canada (d)	536	3.9	437	3.1	459	3.2	370	2.5
Chile	3 569	61.7	5 298	90.3	e)5 057	85.1	e)3 496	58.0
Colombia (a)	7 633	97.2	7 361	88.2	6 876	93.4	9 302	94.7
Costa Rica	154	19.2	163	19.8	68	8.0	164	18.6
Cuba (f)	762	14.5	563	10.6	676	12.5	...	...
Dominican Republic	444	20.8	483	22.1	470	21.0	...	...
Ecuador (g)	2 000	293.7	1 460	208.6	1 584	220.9	...	...
El Salvador (a)	376	50.6	496	57.3	665	72.1	e) 533	60.0
Guatemala	651	23.2	826	28.6	1 042	35.0	...	...
Haiti	179	5.8	139	4.4	302	9.4	...	...
Honduras	...	...	141	9.6	145	9.6	...	...
Mexico	5 992	23.2	5 901	22.2	5 334	19.6	...	...
Nicaragua	219	20.7	232	21.2	394	35.0	637	54.7
Panama	42	5.6	41	5.3	38	4.8	47	5.8
Paraguay (a)	96	8.3	94	7.9	135	11.1	...	...
Peru (a)	2 551	75.7	3 290	93.9	3 574	104.7	h)3 871	112.0
United States	2 484	1.6	2 128	1.4	2 341	1.5	2 252	1.4
Uruguay	598	24.9	618	25.3	726	29.3	620	24.6
Venezuela (a,e,f)	1 510	57.2	978	34.6	1 087	36.6	1 007	32.4
Alaska	17	12.4	-	-	2	1.0	7	3.4
Bahama Islands	17	21.5	17	21.0	24	28.9	9	10.6
Barbados	37	17.7	53	24.9	52	24.0	67	30.3
British Guiana	819	201.7	701	168.2	419	97.7	682	154.6
British Honduras	66	97.9	64	91.9	49	67.0	71	93.7
French Guiana	...	...	14	48.5	9	30.8	3	10.2
Guadeloupe	120	39.7	20	6.5	9	2.9	89	28.3
Jamaica	724	51.6	763	53.4	635	43.6	409	27.5
Leeward Islands:								
Antigua	16	35.5	31	67.0	9	18.9	49	100.1
Montserrat	19	140.4	8	58.8	-	-	-	-
St. Kitts - Nevis	29	60.9	23	46.6	8	15.9	5	9.6
Virgin Islands	5	72.2	4	56.5	9	124.6	11	149.2
Martinique	449	160.4	180	63.1	109	37.7	80	27.4
Puerto Rico	69	3.1	89	4.0	77	3.4	74	3.3
Trinidad and Tobago	170	26.9	223	34.4	230	34.7	...	...
Virgin Islands (U.S.)	1	3.7	-	-	-	-	-	-
Windward Islands								
Dominica	62	114.8	41	74.5	90	160.7	74	129.8
Grenada	35	45.5	51	64.6	43	55.1	55	66.4
St. Lucia	26	32.7	2	2.5	8	9.7	40	47.7
St. Vincent	25	37.3	35	50.3	39	55.1	127	174.7

(a) For reporting areas.
(b) Revised Report.
(c) Reporting area (Table 14).
(d) Excluding Yukon and Northwest Territories.
(e) Provisional.
(f) Including paratyphoid fever.
(g) Capital cities of provinces.
(h) Through November.

TABLE 41

NUMBER OF TYPHOID FEVER DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	309	1.8	265	1.5	234	1.3	...	...
Bolivia	76	2.5	80	2.6	121	3.9	98	3.1
Brazil (a)	316	5.5	252	4.3	235	3.9	...	...
Canada (b)	22	0.2	11	0.1	18	0.1	11	0.1
Chile	432	7.5	349	5.9	c) 217	3.6	c) 216	3.6
Colombia (d)	1 395	12.3	1 183	10.2	1 033	8.7	830	6.9
Costa Rica	23	2.9	15	1.9	17	2.0	23	2.6
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	333	15.6	380	17.4	389	17.4	...	...
Ecuador (e)	147	21.6	187	26.7	141	19.6	...	...
El Salvador	62	3.3	68	3.6	71	3.7	c) 65	3.4
Guatemala	222	7.9	209	7.2	270	9.1	...	...
Haiti	49	1.6	31	1.0	40	1.3	...	...
Honduras	156	10.9	133	9.0	105	6.9	...	...
Mexico	3 967	15.4	4 337	16.3	3 968	14.5	...	...
Nicaragua	152	14.3	142	13.0	111	9.8	98	8.4
Panama	3	0.4	5	0.7	f) 5	0.6	2	0.2
Paraguay (g)	16	1.4	13	1.1	...	...	...	...
Peru	792	9.8	813	9.8	844	10.0	...	...
United States	96	0.1	83	0.1	78	0.1	...	...
Uruguay	73	3.0	46	1.9	...	...	...	...
Venezuela (d,h)	368	7.4	213	4.2	221	4.2	198	3.7
Alaska	1	0.7	1	0.6	1	0.5	...	...
Bahama Islands	8	10.1	2	2.5	1	1.2	5	5.9
Barbados	9	4.3	10	4.7	7	3.2	4	1.8
British Guiana	91	22.4	69	16.6	50	11.7	75	17.0
British Honduras	6	8.9	15	21.5	1	1.4	4	5.3
French Guiana	...	...	1	3.4	1	3.4	2	6.8
Guadeloupe	...	...	4	1.3	...	...	5	1.6
Jamaica (h)	196	14.0	158	11.1	139	9.5	...	...
Leeward Islands:								
Antigua	1	2.2	4	8.6	1	2.1	3	6.1
Montserrat	3	22.2	3	22.1	1	7.4	2	14.6
St. Kitts - Nevis	8	16.8	4	8.1	3	6.0	-	-
Virgin Islands	...	...	...	...	1	13.8	-	-
Martinique	...	...	10	3.5	24	8.3	7	2.4
Puerto Rico	6	0.3	8	0.4	4	0.2	c) 1	0.0
Trinidad and Tobago	33	5.2	30	4.6	40	6.0	...	...
Virgin Islands (U.S.)	-	-	-	-	-	-	...	...
Windward Islands:								
Dominica	6	11.1	10	18.2	17	30.4	7	12.3
Grenada	7	9.1	6	7.6	3	3.8	...	...
St. Lucia	15	18.9	6	7.4	3	3.6	7	8.3
St. Vincent	8	11.9	6	8.6	11	15.5	7	9.6

(a) Federal District and State Capitals, excluding city of São Paulo.
(b) Excluding Yukon and Northwest Territories.
(c) Provisional.
(d) Including paratyphoid fever.
(e) Capital cities of provinces.
(f) Revised Report.
(g) For reporting areas.
(h) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 42

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Argentina	2	0.0	4	0.0	3	0.0	a) 8	0.0
Bolivia (b)	218	9.6	99	4.1	85	3.4	c) 409	15.8
Brazil (d)	22	0.3	8	0.1	12	0.1	7	0.1
Canada (e)	-	-	-	-	-	-	-	-
Chile	473	8.2	593	10.1	a) 266	4.5	a) 165	2.7
Colombia (b)	2 691	34.3	1 844	22.1	1 998	27.1	1 872	19.1
Costa Rica	30	3.7	31	3.8	14	1.6	f) 13	1.5
Cuba (f)	...	...	4	0.1	...	...	...	...
Dominican Republic	1	0.0	-	-	...	...	...	...
Ecuador	407	12.7	747	23.0	551	16.4	...	...
El Salvador (b)	23	3.1	22	2.5	29	3.1	a) 52	5.9
Guatemala	33	1.2	38	1.3	17	0.6	...	...
Mexico	1 223	4.7	1 115	4.2	1 018	3.7	...	...
Panama	-	-	4	0.5	2	0.3	-	-
Paraguay (b)	15	1.3	25	2.1	...	...	...	...
Peru (b)	1 490	44.2	948	27.1	972	28.5	g) 346	10.0
United States	...	...	...	...	...	...	...	...
Venezuela (a,b)	176	6.7	84	3.0	66	2.2	49	1.6
Hawaii	12	2.4	5	1.0	6	1.1	3	0.6
Jamaica	33	2.4	25	1.7	7	0.5	18	1.2
Martinique	1	0.4	3	1.1	1	0.3	1	0.3
Puerto Rico	27	1.2	10	0.4	5	0.2	2	0.1
DEATHS								
Argentina	10	0.1	3	0.0	1	0.0	...	...
Bolivia	58	1.9	56	1.8	39	1.3	25	0.8
Brazil (h)	3	0.1	1	0.0	1	0.0	...	...
Canada (e)	-	-	-	-	1	0.0	1	0.0
Chile	35	0.6	25	0.4	a) 8	0.1	a) 20	0.3
Colombia	644	5.7	663	5.7	653	5.5	743	6.1
Costa Rica	1	0.1	4	0.5	2	0.2	-	-
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	-	-	-	-	-	-	...	...
Ecuador (i)	31	4.6	33	4.7	38	5.3	...	...
El Salvador	6	0.3	-	-	1	0.1	a) -	-
Guatemala	13	0.5	21	0.7	18	0.6	...	...
Mexico	723	2.8	738	2.8	655	2.3	...	...
Panama	-	-	1	0.1	c) 1	0.1	...	...
Paraguay (b)	4	0.3	8	0.7	...	...	...	...
Peru	1 454	17.9	1 390	16.8	953	11.3	...	...
United States	46	0.0	44	0.0	27	0.0	-	-
Venezuela (j)	27	0.5	6	0.1	9	0.2	12	0.2
Hawaii	-	-	-	-	-	-	...	...
Jamaica (j)	2	0.1	-	-	-	-	...	...
Martinique	...	...	3	1.1	1	0.3	-	-
Puerto Rico	2	0.1	-	-	-	-	-	-

(a) Provisional.
(b) For reporting area.
(c) Revised Report.
(d) Reporting area (Table 14).
(e) Excluding Yukon and Northwest Territories.
(f) Murine typhus.
(g) Through November.
(h) Federal District and State Capitals excluding city of São Paulo.
(i) Capital cities of provinces.
(j) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 43

STATUS OF TYPHUS CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	This disease does not constitute a problem in the country; the parasitic indices among the population in the mountainous regions are low and easily controlled. Improvement in the living standards and health habits of the people as well as the application of insecticides against fleas and the use of residual raticides have prevented the appearance of the disease. The few typhus cases that were confirmed during the last four years originated outside the country.
Bolivia	Typhus is endemic in Bolivia's cold area; the disease is present above the altitude of approximately 2,600 meters (8,500 feet). Usually, morbidity figures fluctuate between 3 and 9 cases per 100,000 inhabitants, with increase in severity occurring every certain number of years. During 1954 various localities were affected, among them the city of La Paz, owing to the unusually large movement of rural inhabitants. All of these outbreaks, which might have become more or less extensive epidemics, were checked through control work. Periodic DDT spraying of persons, clothing, and bedding has been discarded as a preventive measure because only a very small group of persons in the vast highlands was benefited. Control of the diseases is now accomplished by checking outbreaks as they occur, through intensive DDT spraying, a measure that requires speedy reporting. On the other hand, typhus can be eradicated only by accustoming the rural dweller to keeping his body clean. UNICEF cooperates in keeping up this service by providing material.
Canada	No cases of typhus have been reported in Canada in recent years. There was one death in 1952 and one in 1953 due to typhus. Presumably these cases were contracted outside Canada.
Chile	Chilean statistical data deal with the two forms of typhus jointly: exanthematic and murine, for which the general morbidity and mortality indices are low. The typing done in large urban centers indicates that the confirmed cases are due to murine typhus. Exanthematic typhus persists endemically and with very low incidence in some rural areas in the southern part of the country, especially among the Indian population. On the other hand, pediculous infestation is high in both urban and surburban areas of the country and among poorer groups in large cities. Hence, intensive mass disinsectization programs have been carried out among large segments of the population, especially in poor districts, in Indian settlements, and in centers housing people infested with parasites. These programs are carried out particularly in the Provinces of Tarapacá, Antofagasta, Santiago, Malleco, Arauco, Cautín, Valdivia, Osorno, Llanquihue, and Chiloé. The disinsectization program has been intensified year by year. In 1953, 758,000 persons, 419,000 dwellings and a large number of beds and clothing were disinsected. In several of the nation's ports, especially in the Provinces of Tarapacá and Antofagasta, rat-extermination programs, employing Warfarin, resulted in a noticeable decrease in the number of murine typhus cases.
Colombia	Local control of cases by public health agencies. DDT application.
Costa Rica	This disease rarely occurs in Costa Rica.

TABLE 43

STATUS OF TYPHUS CONTROL PROGRAMS IN THE AMERICAS (Continued)

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

TABLE 43

STATUS OF TYPHUS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Hawaii (Cont.)	Endemic typhus was first reported in Honolulu in 1933. On Oahu 709 of the cases, sixty-four per cent of the Territory's total, had occurred in Honolulu. The present program for the detection, prevention and control of endemic typhus in Honolulu has the following goals: (1) The determination of typhus antibodies in rat bloods. (2) The reduction of rodent populations living in close association with man. (3) The reduction of rodent flea populations in areas where typhus in humans or rats has been detected. (4) The promotion of ratproofing in both new and existing buildings. (5) The education of the public in rodent and rodent ectoparasite control procedures. To achieve the above aims, (1) rats are caught alive and then bled. Blood serums are forwarded to the Communicable Disease Center Laboratory where compliment fixation tests are undertaken, (2) poisoning and trapping are undertaken, (3) DDT dusting and spraying are accomplished in areas where typhus has been detected, (4) inspection of buildings is regularly done and advice on ratproofing is given. Also plans for new buildings are reviewed and basic requirements for proper ratproofing are explained, (5) direct contact is made with the public by rodent control inspectors and the central office resulting in information being disseminated on rat problems and control procedures. In addition, talks are given to community organizations and films on rodent control are shown. The bureau also assists the Army and Navy with their rodent control training courses.
Virgin Islands (U. S.)	Present to a minor degree as evidenced by 3 cases during fiscal year 1952. This is not considered a problem of special importance in the Islands. Extensive ratproofing of business establishments was conducted at St. Thomas in 1945.

TABLE 44

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	874	5.1	14 383	81.5	28 399	157.3	a)20 152	109.6
Bolivia (b)	2 318	102.4	1 011	41.4	897	35.4	a) 2 324	89.5
Brazil (c)	5 083	88.7	5 627	94.6	5 691	93.0	5 980	103.6
Canada (d)	12 182	89.0	8 889	63.6	8 520	59.1	9 385	63.6
Chile	2 879	49.8	13 385	228.2	e)5 024	84.5	e) 3 028	50.3
Colombia (b)	25 842	329.0	26 956	322.9	21 246	288.6	22 771	231.9
Costa Rica	751	93.8	210	25.5	669	78.4	1 606	182.2
Cuba	195	3.7	153	2.9	39	0.7	...	...
Dominican Republic	327	15.3	118	5.4	7	0.3	...	...
Ecuador	...	...	...	...	...	...	...	...
El Salvador (b)	3 063	412.2	1 822	210.6	1 083	117.5	e) 2 156	242.8
Guatemala	5 880	209.8	7 747	268.4	10 860	365.0	...	...
Haiti	2 292	74.4	2 485	79.2	2 183	68.2	...	...
Honduras	...	...	1 774	120.7	1 592	105.2	...	...
Mexico	31 654	122.6	11 888	44.8	32 734	120.0	...	...
Nicaragua	52	4.9	118	10.8	1 044	92.5	1 877	161.1
Panama	1 328	177.5	353	46.0	357	45.5	520	64.7
Paraguay (b)	2 178	188.7	4 330	366.0	2 847	234.8	...	...
Peru (b)	12 949	384.2	19 379	553.4	12 318	360.9	f)13 228	382.9
United States	120 718	79.8	68 687	44.8	45 030	28.9	37 129	23.5
Uruguay	2 909	121.3	1 239	50.8	874	35.2	938	37.2
Venezuela (b,e)	11 983	454.2	13 971	493.7	18 499	622.0	8 592	276.4
Alaska	103	75.2	72	44.7	148	77.5	16	7.8
Bahama Islands	-	-	2	2.5	4	4.8	285	335.3
Barbados	-	-	-	-	-	-	-	-
Bermuda	35	92.1	35	91.3	1	2.6	-	-
British Guiana	-	-	44	10.6	474	110.6	323	73.2
British Honduras	42	62.3	173	248.4	194	265.1	199	262.6
Guadeloupe	253	83.8	1	0.3	-	-	-	-
Hawaii	35	7.1	10	1.9	43	8.2	136	26.0
Jamaica	...	...	...	...	...	...	...	...
Leeward Islands:								
Antigua	...	...	...	...	...	...	...	...
Montserrat	13	96.0	654	4 810.9	-	-	-	-
St. Kitts - Nevis	1 868	3 923.1	287	581.9	-	-	73	140.3
Virgin Islands	444	6 411.6	53	749.1	1	13.8	-	-
Martinique	2	0.7	1	0.4	1	0.3	18	6.2
Puerto Rico	2 453	111.1	674	30.2	972	43.5	1 057	47.6
Trinidad and Tobago	54	8.5	1 086	167.4	968	145.9	...	...
Virgin Islands (U.S.)	164	607.4	64	256.0	1	4.2	2	8.0
Windward Islands:								
Dominica	1 774	3 285.2	406	738.2	8	14.3	2	3.5
Grenada	...	...	...	...	23	29.5	...	...
St. Lucia	-	-	-	-	42	51.0	-	-
St. Vincent	56	83.5	24	34.5	920	1 300.1	614	844.4

(a) Revised Report.
(b) For reporting areas.
(c) Reporting area (Table 14).
(d) Excluding Yukon and Northwest Territories.
(e) Provisional.
(f) Through November.

TABLE 45

NUMBER OF WHOOPING COUGH DEATHS WITH RATES PER 100,000 POPULATION IN THE AMERICAS, 1950-1953

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Argentina	378	2.2	318	1.8	257	1.4	...	...
Bolivia	1 125	37.3	736	24.1	428	13.9	977	31.2
Brazil (a)	443	7.7	468	7.9	380	6.3	...	...
Canada (b)	306	2.2	202	1.4	142	1.0	134	0.9
Chile	290	5.0	724	12.3	c) 503	8.5	c) 502	8.3
Colombia	3 423	30.2	4 188	36.1	4 103	34.6	2 922	24.1
Costa Rica	130	16.2	72	8.7	125	14.6	223	25.3
Cuba	...	...	...	...	...	...	...	...
Dominican Republic	327	15.3	64	2.9	47	2.1	...	...
Ecuador (d)	176	25.8	182	26.0	70	9.8	...	...
El Salvador	697	37.5	408	21.7	208	10.9	c) 549	28.4
Guatemala	3 210	114.5	3 052	105.7	5 921	199.0	...	...
Haiti	10	0.3	5	0.2	...	...	...	...
Honduras	1 162	81.4	904	61.5	781	51.6	...	...
Mexico	11 888	46.0	8 738	32.9	8 871	32.5	...	...
Nicaragua	76	7.2	38	3.5	215	19.1	369	31.7
Panama	284	38.0	201	26.2	e) 56	7.1	77	9.5
Paraguay (f)	32	2.8	103	8.7	...	...	...	...
Peru	7 211	89.0	7 928	95.9	7 573	89.9	...	...
United States	1 118	0.7	951	0.6	402	0.3	g) 310	0.2
Uruguay	141	5.9	64	2.6	...	...	...	...
Venezuela (h)	624	12.5	716	14.0	800	15.3	315	5.9
Alaska	24	17.5	9	5.6	4	2.1	...	...
Bahama Islands	-	-	-	-	-	-	4	4.7
Barbados	12	5.7	35	16.4	4	1.8	2	0.9
Bermuda	4	10.5	...	...	...	...	...	...
British Guiana	-	-	-	-	47	11.0	64	14.5
British Honduras	5	7.4	3	4.3	-	-	7	9.2
Guadeloupe	...	...	1	0.3	...	...	...	...
Hawaii	-	-	-	-	-	-	...	...
Jamaica (h)	34	2.4	115	8.0	45	3.1	...	...
Leeward Islands:								
Antigua	-	-	-	-	2	4.2	-	-
Montserrat	-	-	18	132.4	-	-	-	-
St. Kitts - Nevis	25	52.5	7	14.2	-	-	1	1.9
Virgin Islands	...	...	1	14.1	-	-	-	-
Martinique	...	...	-	-	-	-	1	0.3
Puerto Rico	183	8.3	38	1.7	37	1.7	c) 84	3.8
Trinidad and Tobago	1	0.2	13	2.0	4	0.6	...	...
Virgin Islands (U.S.)	-	-	-	-	-	-	...	...
Windward Islands:								
Dominica	76	140.7	38	69.1	1	1.8	-	-
Grenada	-	-	-	-	23	29.5	...	...
St. Lucia	-	-	-	-	-	-	-	-
St. Vincent	9	13.4	1	1.4	61	86.2	23	31.6

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

TABLE 46

STATUS OF WHOOPING COUGH CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	Morbidity is moderate; small outbreaks of the disease have occurred in the cold zone of the country. Vaccination of children has been intensified, using pertussis vaccine, phase I, in accordance with the recommendations of the Pan American Sanitary Bureau. During the period 1949 to 1953, 350,000 children were vaccinated, and during the first half of 1954, 84,000 received the vaccine. Ninety per cent of the vaccine is mixed with tetanus and diphtheria toxoids.
Bolivia	Whooping cough is one of the most serious causes of infant mortality in the country. The annual outbreaks, which usually become extensive epidemics, show a high mortality. The true rate must be much higher than that recorded, since reports on the disease come from only a small percentage of the inhabitants. The practice of preventive vaccination is being introduced, though only on a very limited scale. At present vaccinations are applied at health centers and in some provincial health services.
Brazil	Whooping cough is a serious communicable disease problem. State health services, through the district public health units and their communicable-disease services, are seeking practical means of immunizing the greatest possible number of children. The Federal Government, through the National Children's Department in the Ministry of Health, offers assistance to state and private organizations. A laboratory furnishing vaccine for the prevention of whooping cough, with an annual capacity of 120,000 doses, is already in operation. This laboratory is a part of the program developed by UNICEF. (Condensed from the Report to the XIV PASC, page 19.)
Canada	In 1950 there were 12,182 cases of whooping cough reported, with 306 deaths. By 1953 case reports were reduced to 9,385 with 134 deaths reported. Despite the extensive use of vaccine, complete immunity to this disease is not yet achieved by vaccination.
Chile	The program of the past three years has covered two main aspects: patient-control measures and a combined vaccination program. Patient-control, based on diagnosis, prompt case reporting, isolation, treatment, and epidemiological research, is carried out only in urban areas. The combined vaccination program, carried out with the cooperation of the Pan American Sanitary Bureau and UNICEF, has been in operation since 1951. It covers the Provinces of Santiago and Concepción and the Department of San Felipe, whose inhabitants make up a third of the country's total population. The plan includes an initial urban phase and a second rural phase during which 40% of the children of from three months to five years of age will be immunized. The final objective is the immunization of 70% of this age group. In the Province of Santiago, by 31 December 1953, two doses had been administered to 50% of the susceptible children of from three months to six years of age, residents of urban centers, and to 40% in the rural zone. The Province of Concepción and the Department of San Felipe had, at that time, achieved the immunization of 40% of the susceptible children.

TABLE 46

STATUS OF WHOOPING COUGH CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Colombia	Vaccination by public health agencies in collaboration with the UNICEF campaign.
Costa Rica	Permanent DPT vaccination programs.
Cuba	Notifiable disease. Classic control measures.
Dominican Republic	Problem not sufficiently important to warrant a control program.
Ecuador	Emergency program as cases occur.
El Salvador	In 1952 a vaccination campaign, using triple DPT vaccine, was begun, through special teams working in the country's main urban centers.
Mexico	Continuation of the programs of the Unit for the Prevention of Whooping Cough, covering the main aspects of care services, epidemiological, bacteriological, and clinical research, and disease therapy. Preferential immunization is given to susceptible children of approximately three months of age. Studies on various existing vaccines to determine their immunological potency.
Nicaragua	In the program being carried out, several cases have been reported.
Panama	Whooping cough control work is carried out simultaneously with that of diphtheria. Immunization programs are carried out through the health units. Triple vaccine (DPT) is applied to nursing infants and pre-school-age children. School children and adults receive Kendrick's vaccine.
Paraguay	The Department of Epidemiology, together with the Children's Department, are carrying out a program of systematic vaccination of children against whooping cough.
Peru	Under an agreement concluded with UNICEF in 1953, the campaign against whooping cough and diphtheria was initiated in July of that year. Application was made of 247,570 cc of combined pertussis-diphtheria vaccine, an amount sufficient to vaccinate 123,785 children using 2 cc per child. The program is being conducted in 13 departments of the country, where 66,068 first doses and 39,686 second doses have been applied. Thus, 60% of those who began receiving the vaccine have been immunized with two antigen doses. Of the 83,204 whooping cough cases reported during the five-year period 1948-1952, 34,915 (42.0%) were fatal. Of the total number of deaths, 18,379 were in children under one year of age, and 13,391 in group 1-4 yrs. The 31,770 deaths among these two groups represent 91% of the total deaths from this disease during the five-year period. The program against whooping cough is therefore amply justified.
United States	In 1951, 68,687 cases were reported, and the median for the five-year period 1948-1952 is 68,138 cases. By 1953, cases reported had dropped to 37,129.

TABLE 46

STATUS OF WHOOPING COUGH CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay	Preventive vaccination is the core of the campaign that is being waged against this disease. The triple vaccine, diphtheria-pertussis-tetanus, is used increasingly.
Venezuela	Control is based on regular vaccination given by the local Departments of Public Health, according to the number of cases that occur.
	. . . . .
Alaska	DPT vaccinations.
Bahama Islands	Occasional seasonal outbreaks occur. There is no special control program.
Barbados	Immunization is offered.
Bermuda	Inoculation of infants totalling from 250 to 500 a year.
British Guiana	Control is limited to laboratory diagnosis of suspected cases and isolation where necessary.
British Honduras	Diphtheria and whooping cough combined vaccination is now offered at all health centers free of charge.
French Guiana	The disease is rare.
Guadeloupe	The disease is now rare on Guadeloupe. Treatment is left to the practicing physicians, who have at their disposal potent preventive vaccines. The Health Department proposes prophylactic measures, such as isolation of the ill, closing of schools, vaccination, etc.
Hawaii	Combined DPT immunization given in child health clinics and by private physicians during first half year of life and booster when first entering school.
Jamaica	Immunization.
Leeward Islands Antigua	Immunization is practiced in desultory way by a few medical officers and at public health centers.
Leeward Islands Montserrat	Prophylactic injections are administered.
Martinique	The disease is very mild, owing to the climate. Epidemics are rare; mortality is practically nil.
Puerto Rico	The disease remains subject to the same fluctuations, as in the previous years. Since 1952, the immunization program has included vaccination with DPT.
Virgin Islands (U. S.)	One case was reported during the 1952 fiscal year. An effective vaccination program is in operation; whooping cough vaccine is furnished free by Health Department.
Windward Islands St. Vincent	There is no program, but the problem is serious.

TABLE 47

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Colombia (a).....	2 855	36.4	2 547	30.5	3 083	41.9	4 246	43.2
Ecuador.....	...	...	...	...	...	...	...	...
Haiti.....	82 735	2 686.2	72 452	2 309.6	67 592	2 112.3	...	...
Panama.....	256	34.2	158	20.6	171	21.8	b) 189	23.5
Peru (a).....	...	...	475	13.6	390	11.4	...	...
Venezuela (a,c).....	2 530	95.9	1 987	70.2	1 496	50.3	1 401	45.1
British Guiana	26	6.4	81	19.4	65	15.2	25	5.7
Guadeloupe.....	100	33.1	159	51.7	102	32.7	91	28.9
Jamaica.....	...	...	...	...	...	...	...	...
Leeward Islands:								
St. Kitts - Nevis.....	422	886.3	806	1 634.2	615	1 219.8	620	1 191.8
Virgin Islands.....	...	...	...	...	31	429.1	6	81.4
Trinidad and Tobago.....	975	154.2	1 081	166.6	710	107.0	...	...
Windward Islands:								
Dominica.....	1 502	2 781.5	1 105	2 009.1	1 043	1 862.5	1 010	1 771.9
Grenada.....	2 429	3 154.5	1 306	1 653.2	1 256	1 610.3	1 385	1 672.8
St. Lucia.....	679	854.1	516	637.2	557	676.3	774	922.5
St. Vincent.....	...	...	...	...	1 311	1 852.6	1 599	2 199.1
DEATHS								
Colombia.....	...	...	...	...	...	...	...	...
Ecuador (d).....	1	0.1	1	0.1	1	0.1	...	...
Haiti.....	...	...	...	...	...	...	...	...
Panama.....	-	-	1	0.1	b) -	-	-	-
Peru.....	...	...	...	...	...	...	...	...
Venezuela.....	-	-	1	0.0	1	0.0	-	-
British Guiana.....	-	-	-	-	-	-	-	-
Guadeloupe.....	...	...	...	...	...	...	...	...
Jamaica (e).....	-	-	2	0.1	2	0.1	...	...
Leeward Islands:								
St. Kitts - Nevis.....	-	-	-	-	-	-	-	-
Virgin Islands.....	-	-	-	-	-	-	-	-
Trinidad and Tobago.....	-	-	-	-	-	-	-	-
Windward Islands:								
Dominica.....	-	-	-	-	-	-	-	-
Grenada.....	2	2.6	-	-	-	-	...	...
St. Lucia.....	-	-	-	-	-	-	-	-
St. Vincent.....	1	1.5	2	2.9	-	-	-	-

(a) For reporting areas.
(b) Revised Report.
(c) Provisional.
(d) Capital cities of provinces.
(e) Ill-defined causes of death proportionally distributed to defined causes.

TABLE 48

STATUS OF YAWS CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Bolivia	Apparently, the endemic area of this disease is limited to the provinces of North and South Yungas of the La Paz Department. A large-scale campaign was carried out prior to 1948, with 1,800 persons treated. In some places the infection rate reached 50%. Mass treatment reduced the rate to 7.5% in places of greater prevalence. In recent years this problem has not been reviewed.
Brazil	The Division of Public Health Organization of the National Department of Health is in charge of yaws control. The campaign was begun in 1943. In recent years, permanent stations and substations have been established in the areas of greatest endemic incidence. In administering mass treatment, mobile units apply new medication. "Rapid-treatment Centers" are also in operation. (Condensed from the Report to the XIV PASC, page 19.)
Canada	There have been no cases reported in this country during recent years.
Colombia	General campaign in affected zones of the Pacific Coast, with application of treatment.
Costa Rica	Since cases of yaws rarely occur in Costa Rica, there is no program against this disease.
Cuba	Not a notifiable disease. The Fund for the Prevention of Cutaneous Diseases gives special attention to this disease.
Dominican Republic	Since 1932, a special control campaign has been waged. At present, a plan for the eradication of yaws is being conducted throughout the country. The drug being used is procaine penicillin G in oil with 2% aluminum monostearate; 600,000 units are administered to cases and 300,000 to contacts.
Ecuador	The Inter-American Cooperative Service is in charge of the program. Final phase.
El Salvador	This disease has not been identified in El Salvador.
Haiti	A campaign to eradicate this disease is being carried out, with the technical assistance and cooperation of the WHO and UNICEF.
Panama	Four years ago the incidence of yaws was high, but thanks to the work carried out in the anti-yaws campaign, which covered practically the entire country, it can be said that this disease is now under control. There are some endemic areas in Darién, Veraguas, and Chiriquí, but only isolated cases are reported. All cases detected are treated with penicillin.
Peru	No specific control program.
United States	No cases occurred in the United States during 1953.
Venezuela	Five teams, operating in 15 affected areas, apply systematic treatment with procaine penicillin G with 2% aluminum monstearate, oil suspension, 600,000 units to positive cases and 300,000 units to contacts.

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TABLE 48

STATUS OF YAWS CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
French Guiana	A project is under study.
Guadeloupe	Cases of yaws are found and treated free of charge at the dispensaries operated under the Health Department.
Jamaica	Regular censusing of the population is made by sanitary inspectors, who discover cases and advise patients to attend at centers for treatment. This is a continuous program. In non-dispensary districts, treatment is carried out biannually. In December 1953, it was decided that long acting penicillin should supersede all other drugs in the treatment of yaws lesions.
Leeward Islands Montserrat	Kahn examination and use of penicillin.
Leeward Islands St. Kitts - Nevis	In spite of the maintenance of clinics, progress is unsatisfactory and assistance has been sought from UNICEF for a campaign based upon a house-to-house survey, followed by mass single-injection treatment with penicillin of cases and household contacts.
Leeward Islands Virgin Islands	Disease of mild type and seasonal.
Martinique	The disease is not notifiable. Cases seem to be numerous in certain communes.
Trinidad and Tobago	Yaws survey in Tobago. Follow-up of field activities.
Windward Islands St. Vincent	Progress is not satisfactory.

TABLE 49

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

Area	1950		1951		1952		1953	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
CASES								
Bolivia.....	1 806	59.8	3	0.1	1	0.0	18	0.6
Brazil (a).....	4	0.0	50	0.1	221	0.4	39	0.1
Colombia.....	12	0.1	26	0.2	13	0.1	11	0.1
Ecuador.....	-	-	7	0.2	-	-	...	...
Nicaragua.....	...	...	...	...	...	...	...	...
Panama.....	2	0.3	3	0.4	1	0.1	-	-
Peru.....	16	0.2	4	0.0	1	0.0	-	-
Venezuela.....	3	0.1	4	0.1	1	0.0	6	0.1
DEATHS								
Bolivia.....	516	17.2	3	0.1	1	0.0	11	0.4
Brazil (a).....	4	0.0	50	0.1	221	0.4	39	0.1
Colombia.....	12	0.1	24	0.2	16	0.1	11	0.1
Ecuador.....	-	-	-	-	-	-	...	...
Nicaragua.....	-	-	-	-	7	0.6	8	0.7
Panama.....	2	0.3	4	0.5	3	0.4	-	-
Peru.....	...	...	...	...	...	...	...	...
Venezuela.....	3	0.1	4	0.1	1	0.0	6	0.1

(a) Revised report. Cases confirmed by viscerotomy.

TABLE 50

STATUS OF YELLOW FEVER CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program (a)
Bolivia	Since the Aëdes aegypti was eradicated in 1948, only jungle yellow fever still persists. The large outbreak which in the summer of 1950 affected an extensive area in the south of the country and, in sporadic form, various other localities, was followed by several years of complete calm, as is usual. A small outbreak with eighteen cases occurred in 1953, but up to the end of August 1954 there were only vague reports on the presence of suspect cases in two remote localities in the Amazon region.
Brazil	The National Yellow Fever Service of the National Department of Health is the agency responsible for yellow fever control throughout the country.
Canada	There have been no cases reported in this country during recent years.
Colombia	Epidemiological control of cases. Vaccination and preparation of vaccine. Viscerotomy. Special studies.
Cuba	Notifiable disease.
Dominican Republic	Although the vector, Aëdes aegypti, is present, yellow fever does not occur.
Honduras	As various cases of yellow fever have been confirmed in Costa Rica, and because of the possibility of an invasion of jungle yellow fever into Honduras, the vaccination of inhabitants was undertaken. As the danger of yellow fever still exists, preventive activities are being continued so as to protect all localities in the event of an invasion of the disease.
Mexico	Investigations are being continued to study the migration of the virus and of the presence of Diptera of the Haemagogus genus and other possible vectors.
Nicaragua	All inspections made in the country during 1953 gave negative results for Aëdes aegypti.
Panama	The yellow fever campaign consists of viscerotomy work, entomologic activities, DDT application, and vaccinations. Two teams of seventeen vaccinators carry out the vaccination work in rural areas.
Paraguay	A specialized campaign for the control of Aëdes aegypti is under way throughout the Republic.
Peru	This disease is not a threat in the coastal and mountainous regions of the country, since the Aëdes index is zero in those areas. However, the situation is different in the jungle areas, where it is necessary to maintain trained vaccinating teams working under medical control. These teams work in regions where yellow fever is endemic in its jungle form, and vaccinations are applied principally to persons coming from places in which the virus does not exist.
United States	No cases occurred in the United States during 1953. Key West, Florida, is apparently still free of aegypti. There is no program for vaccination of rural population.
Venezuela	Jungle yellow fever is controlled through vaccination of exposed inhabitants.

(a) Specific information on program for viscerotomy, Aëdes aegypti eradication, and anti-yellow fever vaccination of rural dwellers, is included in the following Tables 51 to 53.

TABLE 51

STATUS OF THE VISCEROTOMY PROGRAMS IN THE AMERICAS

Area	Status of program
Bolivia	There are some 70 posts that provide an average of 450 samples annually.
Brazil	In Brazil viscerotomy plays an important role in detecting silent foci of the disease, sporadic cases, and first signs of jungle yellow fever epidemics. Several erroneous ideas on the epidemiology of the disease were corrected, principally as the result of viscerotomy, when jungle yellow fever was discovered in 1932. Introduced in 1930, viscerotomy work reached a peak in 1940 and 1941, when more than 32,000 samples were obtained per year. In 1945 the production of samples began to decline because of the restriction to special areas in certain states and of the small payment made per sample. From 1950 to 1953, over 1,300 viscerotomy posts obtained some 33 thousand samples, which were positive in 1.0 per cent of the cases. (Condensed from the Report to the XIV PASC, pages 43 to 45.)
Canada	No samples taken in this country.
Colombia	Total number of viscerotomies: 1,301 with 11 positive.
Ecuador	Work continues in the jungle area.
Haiti	Viscerotomy was undertaken during the eradication program in the Port-au-Prince area in June 1953.
Nicaragua	Two posts were established in the country, only 6 viscerotomies having been made.
Panama	Viscerotomy work is part of the yellow fever campaign.
Peru	Plans are being made to reorganize this service, which is at present deficient.
Venezuela	The 75 viscerotomy posts, strategically placed for the detection of yellow fever cases, led to the discovery of 3 cases in 1950, 3 in 1951, 1 in 1952, and 6 in 1953.

TABLE 52

STATUS OF THE AËDES AEGYPTI ERADICATION PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	The presence of vectors in the country makes it necessary to maintain a campaign for the eradication of Aëdes aegypti, to vaccinate the residents of forest areas where monkeys are found; and to carry on immunity surveys and viscerotomy investigations. Eradication of the Aëdes requires great effort and a trained and honest personnel is needed to ensure reliable reports. The campaign work is divided between the northeastern and north-western zones of the country. Out of 18,672 houses in the northeastern zone, 11,752 were checked in 1952 and 1,060 found positive. A total of 125,343 deposits were checked and 103,704 treated; 14,475 vaccinations were given. During the first five months of 1953, 18,560 houses were inspected and 355,568 water deposits treated with DDT; 153 houses were found positive for Aëdes and the Stegomyia index was 1.2%. But in June 1953, 5,224 houses were checked in Resistencia; all were found negative and the Stegomyia index was zero. A total of 8,619 vaccinations were applied in the eastern area of Misiones, in the more isolated communities and settlements along the shores of the Uruguay River. Studies on the existence of jungle yellow fever vectors have revealed the presence of Aëdes scapularis and Psorophor ferox, which can carry and transmit yellow fever virus. Among those that can carry the virus but that have not been proved capable of transmitting it by bite, are the Mansonia titillans, the Aëdes serratus, and Aëdes terrens. The Stegomyia indices in this zone range from 0.49% to 2.43%. In the northwestern zone, Jujuy and San Pedro were negative for Stegomyia throughout the year. In Salta there were foci from January to April; in Tucumán only one house was found with a focus in February, and Monteros (Tucumán), Catamarca, and La Rioja were negative during the entire year. The Department for the Control of Malaria and Yellow Fever takes part in this campaign, as do the service of the "Lucha Antimosquito Integral" (Integrated Antimosquito Campaign), made up of national, provincial, and municipal experts of the large communities, which participate for the purpose of uniting efforts and arousing awareness of community health conditions, so as to ensure the maintenance of the campaign on a permanent and complete basis. During the past year the campaign has had the cooperation of the Pan American Sanitary Bureau which has worked most effectively with our experts. An Aëdes aegypti eradication program is being prepared in our country in collaboration with the Pan American Sanitary Bureau. The Entomology Institute under the Malbrán Institute has carried out very important work in the special study it is making of all vectors in the country, which are being classified and identified. At the present time, with the cooperation of the Pan American Sanitary Bureau, the Institute is studying DDT resistance among vectors in the country.
Bolivia	The Aëdes aegypti was practically eradicated in 1942. It has not been found in Bolivia since February 1948.
Brazil	During the four-year period, 1950-1953, the National Yellow Fever Service intensified its activities against urban yellow

TABLE 52

STATUS OF THE AËDES AEGYPTI ERADICATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Brazil (Cont.)	fever, spraying with DDT some 82 million deposits found in 1,737,000 houses. The campaign encountered two obstacles to Aëdes aegypti eradication work in the country. The first difficulty was the lack of continuity in the areas worked in heavily infested regions, a problem that was further accentuated wherever there was heavy traffic between "clean" and "infested" areas. The difficulty was overcome with the establishment of a large number of anti-aegypti services in "adjacent and progressively increasing areas." All populated centers of the municipalities were grouped into units for the application of anti-aegypti measures, the work progressing continuously from the capital cities to rural centers. The second obstacle, the prolonged viability of the Aëdes aegypti egg and its extraordinary resistance to certain external factors, was overcome with insecticides of residual toxic action, which lasts for a period of about 3 months. Use is made of the "perifocal" method of spraying all deposits, with or without water, inside and outside, as well as portions of walls near the deposits. The "Excelsior" 2-liter capacity sprayer was used to apply STEG-DDT, an emulsion with 30% DDT prepared by the Service and used to make a 2% solution. Not a single Brazilian locality was found to be positive for Aëdes aegypti in 1953. By December 1954, with favorable results from the systematic follow-up checks of the 350 inspectors, it will be possible to declare the Aëdes aegypti completely eradicated from the national territory. (Condensed from the Report to the XIV PASC, pages 41 to 42.)
Canada	This vector is not endemic to this country.
Chile	In 1949, infestation by Aëdes aegypti was confirmed in 43 localities in the Provinces of Tarapacá and Antofagasta, the positivity fluctuating between 8.9 and 33.3%. The control program initiated that year reduced the infestation to 4 localities in 1952, with a positivity percentage of 0.22 in Iquique and 3.16 in Tocopilla. In 1953, absolute negativity was achieved with the eradication of the remaining focus in Tocopilla, the last refuge of the arthropod vector. During that year, 35,366 house inspections and 42,976 checks of water deposits were made in zones previously infested. To eradicate the focus at Tocopilla, 3,480 houses at the port were disinsected with an aqueous suspension of gammexane and DDT. The Aëdes aegypti index dropped from 4.5 in March 1953 to zero in the period July to December of the same year. Systematic measures for the control of Anopheles, pediculosis, and Aëdes aegypti were undertaken pursuant to the terms of the Tripartite Border Health Convention in force for Chile, Peru, and Bolivia. The Convention also covers anti-smallpox vaccination and rat extermination.
Colombia	Destruction of the vector: the Departments of Atlántico, Magdalena and Bolívar are free. The ports are free. The Río Magdalena campaign is almost completed.
Costa Rica	Intensive Aëdes aegypti eradication work continued. In 1954 control work will be extended to zones at altitudes of 900 to 1,000 meters.

TABLE 52

STATUS OF THE AËDES AEGYPTI ERADICATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Cuba	An Aëdes aegypti eradication campaign will be initiated shortly, pursuant to an agreement signed recently with the Pan American Sanitary Bureau.
Dominican Republic	With the cooperation of the PASB and UNICEF, a program is being conducted for eradication of the Aëdes aegypti through inspection and DDT treatment of houses.
Ecuador	This program is in the final stage.
El Salvador	The anti-Aëdes aegypti work, at first entrusted to 8 inspectors under the supervision of the Antimalaria Service, was turned over to the Vector Control Service in July 1953 and the training of new personnel was started to increase the number of inspectors to 20. Since 1950, activities have been intensified year by year. In 1952, 201 localities with 71,000 houses were inspected; 1,049 houses were found with Aëdes aegypti and 6,857 with other species. In addition, more than one-half million deposits were sprayed with DDT. The campaign was continued satisfactorily in 1953.
Haiti	The eradication program was initiated in the Port-au-Prince area on 27 June 1953; many houses were inspected.
Mexico	Mexico employs, principally, antilarval measures with the use of modern insecticides and the plan of controlling adjacent and increasingly expanded areas. Protection against urban yellow fever outbreaks in the country is provided by inspection of cities and anti-aegypti campaigns in sea or air ports or air ports of entry.
Nicaragua	All inspections made in the country during 1953 gave negative results for Aëdes aegypti.
Panama	Program is being conducted in the Provinces of Panamá, Chiriquí, and Bocas del Toro. The entomological studies have shown that the Aëdes aegypti is not present in any of the areas investigated.
Paraguay	A specialized campaign for the control of Aëdes aegypti throughout the Republic has been pursued for the past five years in all parts of the country. Presumably, the species will be eradicated by 1954.
Peru	With the assistance of WHO, the program is being conducted along the coast and in the jungle region of the country.
United States	No cases occurred in the United States during 1953. Key West, Florida is apparently still free of aegypti.
Uruguay	The agreement between the Ministry of Public Health, the Institute of Inter-American Affairs and SCISP (Project No. 28 of 1947) for the eradication of Aëdes aegypti in Uruguay includes the following activities: determination of the Stegomyia index in populated centers and rural areas of the country; application of DDT to all water deposits, wherever necessary; assessment of results; and training of inspectors.

TABLE 52

STATUS OF THE AËDES AEGYPTI ERADICATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay (Cont.)	The first stage of the work was directed to the interior of the country; all Departmental capitals were covered and the work was extended to localities near the infested ones. At the beginning of this stage, 51,502 dwellings inspected showed a general index of 3.9 per cent. At the last inspection 47,990 dwellings already treated with DDT showed an over-all index of 0.1 per cent. In March 1950, work was undertaken in Montevideo. The entire Montevideo Department, nearly all urban areas in the interior, and a large part of its rural zone were initially recognized as positive. Of the 450,000 existing houses, 76.6 per cent were inspected; more than one million occupants of the 267,831 houses in areas previously positive were protected from the potential danger. Of the 292 sections of the country, the principal populated centers were inspected in 263 sections, 18 of which were covered during the present year. The remaining 29 sections and rural areas in non-Stegomyia zones and basically are without direct connection with the initially positive localities. In the index determination in 1953, 20 out of approximately 10,000 dwellings and 32 out of more than 100,000 deposits were found infested with Aëdes aegypti showing indices of 0.2 and 0.0, respectively. Some 200,000 houses and more than 2 million deposits were inspected, 31 and 36 of which, respectively, were found infested. In over one million inspected deposits, the group including troughs, fountains, barrels, tubs, and casks, showed the highest index (2.1); next in importance were wells and cisterns (0.9) and tanks (0.8). The SCISP contributed 36.4 per cent of the total cost of the Aëdes aegypti eradication work; the PASB contributed 10.7 per cent, the Ministry of Public Health 11.9 per cent, the Municipal Government of Montevideo 5.8 per cent, and the Municipal Governments of the interior 35.2 per cent. The average cost per house covered was $0.67. An agreement was concluded between the Ministry of Public Health and the PASB to complete the index determination work; to achieve eradication throughout the interior in 1954; to complete eradication of the species in the capital in 1955; to establish a permanent Arthropod Control Service, under the Ministry of Public Health. (Condensed from the Report to the XIV PASC, pages 19 to 24.)
Venezuela	By 1953, intradomicile spraying with DDT and other insecticides covered 23,400 localities with 548,304 houses, in which the mosquito was exterminated. In the same year, 296 localities in non-malaria zones of nine states received antilarval treatment, with only 8 localities remaining positive for the mosquito at the end of 1953. To the States of Táchira, Mérida, Trujillo, and Lara, which were reported negative in the Report to the XIII Pan American Sanitary Conference, can now be added Barinas, Cojedes, Falcón, Portuguesa, Zulia, and the Federal Territories of Amazonas and Delta Amacuro. . . . . .
Bahama Islands	A program assisted by WHO is now commencing.

TABLE 52

STATUS OF THE AËDES AEGYPTI ERADICATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Barbados	A campaign started in March, 1954.
British Guiana	Premises inspected during 1953 totaled 29,243, with an index of 0.4. Positive foci were found in 16 ships from overseas and 108 premises in Georgetown, where a diffuse area of reinfestation was encountered.
British Honduras	A campaign against breeding places (vats and water containers) in Belize and district towns was undertaken in 1953-54.
French Guiana	Jungle yellow fever is under study. The eradication of the Aëdes aegypti removed all menace of epidemics. The eradication achieved in 1949 has been maintained ever since by means of annual sprayings with residual-action insecticides. The Stegomyia index is zero.
Guadeloupe	Yellow fever has practically disappeared from Guadeloupe since 1876. A campaign of eradication is foreseen in 1954, under the supervision of a physician, head of the antimalaria campaign, who has studied such projects in Central America and in Colombia under the auspices of the Pan American Sanitary Bureau.
Hawaii	Hawaii is classed as a receptive area. Extensive Aëdes eradication program and computing of indices. Airplane disinsectization required.
Jamaica	Larvicidal measures in Kingston. Residual spraying in other sections of the island.
Leeward Islands Antigua	Surveys completed in 1953. Awaiting initiation of program by PASB.
Leeward Islands Montserrat	Antimosquito measures.
Leeward Islands St. Kitts - Nevis	Aëdes aegypti has been eradicated from Nevis in the course of DDT residual spraying for malaria control. A campaign for its eradication from St. Kitts and Anguilla was begun on 2 April 1954.
Leeward Islands Virgin Islands	Planned for 1954.
Martinique	The fight against the Aëdes aegypti is active, since the Department has been declared a receptive zone. Spraying with DDT and derivates is being continued. The Aedes is fairly numerous in areas that have not yet been treated.
Puerto Rico	As a preventive measure, a campaign for eradication of the Aëdes aegypti was begun in April, 1950. At present, about one third of the island is free of this mosquito.
Surinam	Jungle yellow fever occurs in the interior according to the results of the mouse protection test. Persons leaving for the interior on behalf of the government or some companies are vaccinated against yellow fever with vaccine 17D, prepared in

TABLE 52

STATUS OF THE AËDES AEGYPTI ERADICATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Surinam (Cont.)	the Institute of Tropical Hygiene and Geographical Pathology in Amsterdam. Since 1935, this Institute has examined blood samples from Surinam for yellow fever. At present this survey is being carried out on a much larger scale than before. In 1949, residual house-spraying with 5% DDT in kerosene was introduced. In some parts of the country the Aëdes aegypti has been eradicated and has not been found again, for example in Wageninsen, in the district of Coronie, in a large part of Saramacca, at the airport of Zanderij, and at the bauxite plant at Moengo. In 1952, a regulation was passed by the Legislative Council by which everyone is compelled to submit to the measures prescribed for destroying mosquitoes. All aircraft from foreign airports are disinsected. The percentage of yards infested with Aëdes aegypti larvae in the capital was 42.1, before the spraying. After spraying started, the percentage was about 5 during the rainy season and even dropped to 0.4 during the dry periods. But unfortunately the percentage has risen again to 12.2. In January, 1953, the UNICEF offered assistance for the insect control program for a period of 2 years. The number of laborers was then doubled. The Bureau of Public Health provides mosquito bed nets to indigents at a very low cost and, if necessary, entirely free of charge.
Trinidad and Tobago	House-to-house control program. DDT residual spraying.
Virgin Islands (U. S.)	A survey of Aëdes aegypti mosquito breeding was conducted in January 1952 in St. Thomas. Very heavy and extensive breeding of the yellow fever vector was found. No special control efforts are made in St. Thomas; however, in St. Croix the DDT residual spraying program has reportedly eradicated the Aëdes aegypti mosquito.
Windward Islands St. Lucia	DDT residual spraying of all houses is being carried out with very satisfactory results.
Windward Islands St. Vincent	In sea ports and airports only.

TABLE 53

STATUS OF THE PROGRAMS FOR YELLOW FEVER VACCINATION OF RURAL POPULATIONS IN THE AMERICAS

Area	Status of program
Bolivia	Before 1950, only the Amazon basin was considered as an area affected by yellow fever, as no case of the disease had ever been reported from the River Plate basin. Since 1950, owing to the epidemic that spread to the Argentine frontier, the entire territory to the east of the Andes Mountains, to an altitude of 2,000 meters (6,500 feet), has been considered as either affected or susceptible. In view of this development, a plan was drawn up to vaccinate every five years the entire population in the affected area and along a belt several kilometers wide surrounding that area, especially in districts with active commercial traffic. Started in 1950, the vaccination work will be completed by the end of this year. Although with these measures some sporadic cases may still occur, there will be no further heavy or extensive epidemics.
Brazil	In the period 1950 to 1953, the number of stationary and mobile yellow-fever vaccination units reached a total of 120 and the number of persons vaccinated rose from one half million in 1950 to approximately 6 millions in 1953, with a total of more than 12 million persons for the four-year period. This increase was due partly to the occurrence of violent outbreaks of jungle yellow fever, which led to a total of 310 cases, confirmed by viscerotomy, or for each of the four years, 2, 50, 220, and 38 cases, respectively. Although the last fatal case occurred in April 1953 in São Paulo, the vaccination campaign has continued actively and will be intensified during 1954. (Condensed from the Report to the XIV PASC, pages 45 to 46.)
Canada	No vaccination program has been carried out in this country except for persons emigrating to affected areas.
Colombia	Total number of vaccinations: 201,808; rural vaccinations: 189,141.
Costa Rica	The program is carried out jointly with that for vaccination of the urban population. Vaccinations reached a total of only 16,225 during the year, as the entire rural population in the country had been vaccinated previously.
Cuba	Not carried out. Vaccinations are given only to travellers who request them.
Ecuador	Vaccination of all rural inhabitants in the suspected zone continues.
Mexico	In regions where the presence of the jungle virus was confirmed or at least suspected, vaccinations are applied to all persons living in villages nearby or who come in contact with the forests in the course of their work.
Nicaragua	In 1953, 229,230 persons were vaccinated in the country; of that number approximately 60 per cent are rural inhabitants.
Panama	Vaccination is done under the yellow fever campaign program.
Peru	There is a systematic vaccination program.

TABLE 53

STATUS OF THE PROGRAMS FOR YELLOW FEVER VACCINATION OF RURAL POPULATIONS IN THE AMERICAS (Continued)

Area	Status of program
United States	There is no program for vaccination of rural population.
Uruguay	Vaccinations are applied when necessary. During the period 1950 to 1953, 121, 581, 238, and 65 yellow fever vaccinations were applied, respectively, in each of the four years.
Venezuela	Jungle yellow fever control is maintained through the vaccination of exposed inhabitants. Vaccinations for the years 1950-1953 totaled 37,000, 66,000, 97,000, and 67,000, respectively. At the end of 1953, 618,000 persons had been immunized, which meant that almost all inhabitants of the dangerous zone were protected.
	. . . . .
Bermuda	About three quarters of the rural population have been vaccinated once.
British Guiana	No comprehensive program exists. A total of 596 inoculations were given, principally to travellers leaving British Guiana. The facilities available for vaccination of coastal residents entering the interior were publicized.
British Honduras	Yellow fever vaccination was undertaken by BCG teams on tour of rural areas. By the end of March, about 46,000 out of 70,000 inhabitants had received yellow fever vaccination.
French Guiana	Vaccination against yellow fever has been obligatory since May 1953.
Jamaica	No mass vaccination. Vaccination of persons leaving for endemic areas.
Leeward Islands Virgin Islands	All children of school age are being vaccinated.

CHAPTER IV

PERSONNEL EMPLOYED IN HEALTH SERVICES

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

Data regarding the personnel employed in the National Health Services were received from 15 countries (Table 54). Six of these countries also gave the number of employees in state or provincial health services and 5 in local health services. A few of the countries had a decentralized organization with services rendered at state and local levels, while in certain others, services were principally at the national level. Twenty-two other areas provided this information regarding the personnel of these health services (Table 55) with 11 also giving the numbers employed at the local level.

Because of variations in the organizations in health services, the data in these tables have to be considered in relation to the programs in the areas and do not afford a comparable picture. For example, in one country the personnel employed in hospitals are included, while in other areas such employees are not usually included. Also the definition of certain categories of personnel varies from country to country, preventing a strict comparison. A more important consideration in interpreting this table is the different concept of full-time prevailing in the various countries and territories. As the questionnaire was worded, only numbers of personnel who devoted their working time wholly to the positions in the health service, with exclusion of professional practice, were expected. However, the data indicate that personnel who were not full-time have been included, which is due to the variations in employment practices. A public health career and adequately trained full-time staff are essential for the development of modern health services.

Notwithstanding these difficulties in interpretation, Tables 54 and 55 show that the reported numbers of physicians, engineers and other professional personnel employed in National Health Services were relatively small in several areas. Although the public health nurses were few in number, in addition to those serving in National Health Services, many public health nurses are rendering service in state, provincial and local health units. Provision of opportunities for education and training of specialists in many of these categories is an important phase of planning for the development of health services.

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

TABLE 54

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

Level of service and country	Physicians	Nursing Personnel			Sanitation Personnel			Dentists	Nutritionists	Laboratory Personnel	Statisticians	Health Educators	Social Workers	Clerical Personnel	Other Personnel
		Public Health	Other Graduate	Other	Graduate Engineers	Sanitarians	Other								
NATIONAL															
Argentina.....	32	150	...	...	6	30	...	...	40	...	...	6	...	...	...
Bolivia.....	11	1	...	...	...	25	68	1	1	7	1	...	...	58	25
Brazil (a).....	265	99	20	340	b)74	17	453	8	-	178	6	10	-	460	1 120
Chile.....	769	c) 441	d)1 922	7 122	38	242	...	e)542	219	395	f)650	22	567	3 151	8 843
Colombia (c)....	32	...	...	...	9	4	...	2	...	...	2	5	...	...	...
Costa Rica (g)..	4	30	26	110	10	79	73	27	5	38	5	2	6	140	...
Dominican Rep...	90	3	14	54	4	141	...	10	...	22	1	...	...	215	875
El Salvador (h).	16	85	...	140	8	...	205	21	1	3	2	30	...	200	135
Mexico.....	1 032	1 955	...	48	19	444	...	44	47	423	34	...	251	1 975	5 394
Nicaragua.....	51	16	8	41	2	36	80	1	1	36	10	17	...	49	117
Panama.....	159	85	296	346	2	56	50	32	5	116	1	1	4	282	1 056
Paraguay.....	203	16	i) 72	108	1	3	58	33	7	j) 42	36	17	20	567	k) 43
Peru (c).....	152	41	-	-	12	22	-	-	-	-	-	21	-	1 230	6
United States (l)	1 405	m) 128	1 260	1 441	341	...	...	217	96	1 601	131	17	35	...	...
Venezuela.....	856	407	236	2 516	43	492	103	12	37	300	4	7	150	2 052	5 343
STATE OR PROVINCE															
Bolivia.....	...	...	...	37	...	24	...	...	4	52	27	...	...	51	145
Colombia (c)....	42	52	...	...	15	30	...	28	...	17	...	16	...	26	...
Mexico.....	644	565	...	30	22	555	...	57	...	66	31	...	18	645	1 117
Nicaragua.....	40	19	...	26	...	35	27	5	1	19	...	48	...	3	31
Paraguay (n)....	58	13	65	112	...	...	160	10	...	9	6	...	3	157	35
United States...	632	1 319	120	...	664	1 194	...	100	133	1 697	191	225	163	7 496	3 596
LOCAL															
Bolivia.....	10	25	82	264	...	...	...	17	...	...	...	...	9	250	401
Colombia (c)....	867	1 059	...	...	5	1 694	126	210	...	12	...	...	...	216	...
Mexico.....	78	141	...	...	3	13	...	4	...	42	13	...	2	67	255
Nicaragua.....	5	2	...	3	...	4	2	...	...	9	...	6	...	...	7
United States...	1 502	12 492	621	...	407	6 810	...	234	106	1 301	213	272	177	8 280	4 233

(a) Personnel engaged in special or internationally agreed health program or sanitary campaign, undertaken by the Government. Government personnel has a 6-hour work day whereas state or municipal service does not employ full-time ("tempo integral") personnel.
(b) Including 19 topographers, 2 agriculturists and 3 chemists.
(c) Revised report.
(d) Including 573 "matronas." Revised report.
(e) Only 15 served 6 working hours daily.
(f) Including 30 statisticians and 620 officials.
(g) In addition there are 65 part-time.
(h) Municipal contributions are made exclusively in payment of wages and material used in basic sanitary projects.
(i) Including 17 midwives.
(j) Including 10 auxiliary employees.
(k) Including 8 pharmacists and 9 X-ray technicians.
(l) Revised by U.S. Health Service to include only personnel in public health services.
(m) Including 28 in foreign service and 30 on loan to state or local services.
(n) Included in the group "Other Graduate Nursing Personnel" are 48 midwives; in the group "Other Personnel," 30 pharmacists and 1 X-ray technician; in general, auxiliary personnel are included.

TABLE 55

FULL-TIME PERSONNEL EMPLOYED IN STATE OR TERRITORIAL AND LOCAL HEALTH SERVICES IN PUERTO RICO AND 21 TERRITORIES OF THE AMERICAS, 1953

Level of service and area	Physicians	Nursing Personnel			Sanitation Personnel			Dentists	Nutritionists	Laboratory Personnel	Statisticians	Health Educators	Social Workers	Clerical Personnel	Other Personnel
		Public Health	Other Graduates	Other	Graduate Engineers	Sanitarians	Other								
STATE OR TERRITORIAL															
Alaska (a)	11	31	4	...	5	5		1	-	7	-	4	2	55	15
Bahama Islands	14	6	41	100	-	9	5	-	-	3	-	-	-	3	65
Barbados	18	4	134	91	-	9	5	-	-	6	-	-	-	36	440
Bermuda	4	6	-	12	-	8	-	2	1	4	-	-	-	2	1
Br. Guiana	8	44	-	b) 41	-	61	77	2	-	24	-	-	2	12	-
Br. Honduras	1	5	16	-	-	11	-	-	1	2	-	-	4	1	-
Fr. Guiana (c)	7	1	-	-	-	-	-	-	2	4	-	-	-	-	1
Guadeloupe (d)	9	-	-	2	-	12	-	-	-	9	-	-	-	7	76
Hawaii (e)	25	59	1	-	7	68		-	1	17	3	4	8	96	55
Jamaica	168	88	999	400	-	-	263	7	-	123	-	1	25	136	f)963
Leeward Islands:															
Antigua	9	35	36	6	-	16	-	1	-	2	-	-	-	2	...
Montserrat	2	3	1	24	-	-	3	1	-	1	-	-	-	1	5
St. Kitts - Nevis	10	12	30	50	-	14	1	2	-	3	-	-	-	4	-
Virgin Islands	2	-	7	5	-	-	-	-	-	1	-	-	-	-	7
Martinique (g)	4	23	57	28	-	25	-	-	-	3	-	-	5	-	1
Puerto Rico	160	377	383	678	5	39	225	7	35	135	7	29	62	67	2 879
Trinidad and Tobago	125	79	-	h)839	-	80	137	18	2	58	-	1	5	-	-
Virgin Islands (U.S.) (i)	18	51	2	...	1	27		2	1	8	4	1	-	26	166
Windward Islands:															
Dominica	8	4	-	69	-	-	16	1	1	2	-	-	-	8	11
Grenada	12	5	2	107	-	1	17	1	1	3	-	1	-	11	160
St. Lucia	10	3	24	32	-	11	12	1	-	2	-	-	-	4	90
St. Vincent	11	21	32	28	-	-	-	1	-	4	-	-	1	7	...
LOCAL															
Alaska	1	7	-	-	-	1		-	-	-	-	-	-	2	-
Barbados	13	9	-	-	-	-	-	-	-	-	-	-	-	-	-
Br. Guiana	1	10	-	-	-	23	316	-	-	-	-	-	-	2	-
Br. Honduras	-	-	-	-	-	-	80	-	-	-	-	-	4	-	-
Fr. Guiana	2	-	5	5	-	-	-	-	-	-	-	-	-	-	-
Guadeloupe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Hawaii	15	87	1	-	7	88		-	1	18	2	4	10	126	113
Jamaica	1	17	-	219	-	-	178	14	-	-	-	-	-	-	-
Martinique	-	-	11	53	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	102	-	197	856	-	-	-	-	11	36	-	-	8	19	587
Virgin Islands (U.S.)	15	14	2	...	1	21		2	-	1	1	1	-	6	14

(a) Including 4 federal government physicians; the number of other federal government personnel not available.
(b) Including subsidized midwives in private practice.
(c) Including state personnel: 1 physician, 1 pharmacist and 2 nutritionists.
(d) Including state personnel: 1 physician and 7 administrative personnel; also included were hospital physicians.
(e) Including 12 federal government physicians; the number of other federal government personnel not available.
(f) Including 73 pharmacists.
(g) Including state personnel: 3 physicians, 1 pharmacist and 5 sanitary agents (frontier service).
(h) Including 86 ward sisters, 417 staff nurses and 336 student nurses.
(i) Including 2 federal government physicians; the number of other federal government personnel not available.

CHAPTER V

ORGANIZATION OF HEALTH SERVICES

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

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

Brazil

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

Chile

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

The "Sub-Dirección Normativa" correlates and coordinates the activities of the Departments, Subdepartments, and Technical Normative Sections. The "Sub-Dirección General" performs equivalent functions with respect to the executive activities of the Service, through the health zones and centers. The "Sub-Dirección

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

Mexico

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

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

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

Puerto Rico

The Island of Puerto Rico functions as a public health district. The Department of Health comprises one Central Departmental Office under the direction of the Secretary of Health, and four divisions: Administration, Public Health, Hospital, and Public Welfare. The Central Departmental Office includes the following sections: Demographic Registration and Statistics; Census and Hospital Construction; Medico-Social Work; Health Education; Cancer Control; Nutrition and Dietetics; Mental Health, Pathology; and Medical Education.

The Division of Public Health consists of a central office, under the direction of one director and three auxiliary directors, and of the following sections: Administrative Services, Communicable Diseases, Environmental Sanitation, Tuberculosis Control, Venereal Disease Control (also in charge of the heart disease services), Public Health Laboratories, Malaria and Insect Control, Crippled Children, Maternal and Child Health, Oral Hygiene, and Public Health Nursing.

There is a public health unit in each one of the 76 municipalities into which the island is divided. These municipalities have been grouped in 33 jurisdictions with 129 urban and rural subunits. Each jurisdiction is under one medical officer, who is assisted by one or more physicians in addition to the nurses, dentists, health inspectors, medico-social workers, public health educators, and other auxiliary personnel, all of whom constitute the health corps in such jurisdictions. At the health centers in 17 municipalities there are also first-aid hospital units, public health units, and public welfare units. The hospital units have available approximately one bed per thousand inhabitants in each jurisdiction they serve.

The Division of Hospitals has under its jurisdiction five general hospitals, six tuberculosis hospitals, one psychiatric hospital, one for leprous patient, and four schools for nurses, all having a total of over 5,000 beds. The schools for nurses are equipped for 330 students.

The Division of Public Welfare is divided into three sections (Public Assistance, Child Welfare, and Institutions) and five offices (for the Handicapped, Inter-agency Services, Public Relations, Personnel Training and Statistics, Social Investigations and Education). On a local level, the Division maintains 78 public welfare units, which are supervised by five district offices.

United States

There are three distinct levels of health organization in the United States: Federal, state and local. Federal official agencies are responsible for controlling interstate health hazards and protecting the country from the communicable diseases from abroad. The Federal Government sponsors research and demonstration into the cause, prevention and control of disease and allots grants-in-aid for the expansion of state and local health services. The United States Public Health Service is the chief Federal Health Agency, but numerous other agencies have certain health interests and responsibilities directly related to their broader functions. Health functions of state official agencies range from regulatory authority or advisory services only, to the operation of complex direct service units. More adequate local health service is stimulated through promotional, advisory, and supervisory activities and through financial aid from state and Federal sources for approved health projects. Generally, protection of community health is a public responsibility discharged through official agencies of local government.

Venezuela

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

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Fifteen countries, Puerto Rico and 4 territories provided information regarding the responsibility for specific functions. Information regarding the agency or subdivision of the National Health Service responsible for 12 specific activities is presented in brief form in Table 56. Although this table gives only limited information, the individual reports of several areas give more complete descriptions. In this table the divisions, departments, services are considered to be under the

direction of the National Health Service except when another agency is specified and an asterisk indicates that this was not a part of the National Health Service.

Of the 20 areas providing data all stated that responsibility for communicable diseases was in the National Health Service, usually in a division or department of communicable diseases or epidemiology. The control of tuberculosis and venereal diseases was frequently in this same division or department or a section of it. In a few areas, there were in addition services designated with responsibility for some of the important communicable diseases such as malaria, yellow fever and leprosy.

Environmental sanitation was the responsibility of a major unit of the National Health Service in several areas; however, this service was not known to have been included in the structure of National Health Services in 3 countries. In 5 countries, Puerto Rico and 1 territory, the National Health Service contained a unit with responsibility for industrial hygiene. In many areas maternal and infant hygiene services were included in the structure of the National Health Services; however, in two countries this activity was assigned in whole or in part to a separate agency, in one to the local level, and in two others no provision for this activity was stated.

All except two countries and one territory showed provision for biostatistics in the organizational structure of the National Health Service.

In many areas medical care was not a responsibility of the National Health Service; some other agency or no centralized agency was responsible. However, in 6 countries and 2 territories a Division of Hospitals or other administrative subdivision of the National Health Service was assigned this responsibility to various degrees. In one country medical care is an integral function of the National Health Service.

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

TABLE 56

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

Area	Communicable Diseases	Tuberculosis Control	Venereal Disease Control	Environmental Sanitation	Industrial Hygiene	Vital and Health Statistics
Bolivia	Div. of Com. Diseases	Serv. in Div. of Com. Diseases	Serv. in Div. of Com. Diseases	Limited scale	SCISP	Natl. Dept. of Biostatistics
Brazil	Div. of Public Health Org.; Specialized Serv.	Natl. Tuberculosis Serv.	Div. of Public Health Org.	*Min. of Communications and Public Works	*Min. of Labor, Industry and Commerce	Federal Biostatistics Serv.
Canada	Epidemiology Div. Laboratory of Hygiene; *Dept. of Agriculture	...	Directorate of Health Serv.	Public Health Engineering; *Dept. of Agriculture	Occupational Health, Div. *Dept. of Labor	*Dominion Bur. of Statistics
Chile	Dept. of Epidemiology	Sub-Dept. of Tuberculosis	Sub-Dept. of Venereal Diseases	Dept. of Environmental Health	Sub-Dept. of Indus. Hygiene	Sub-Dept. of Biostatistics
Colombia	Natl. Epidemiology Sect.	Natl. Administrative Sect.	Local level; Antivenereal Inst. and Public Health Org.	Natl. San Eng. Sect.	*Min. of Labor	Natl. Sect.
Costa Rica	Epidemiology Dept.	Antituberculosis Campaign	Antivenereal Campaign	Environmental Sanitation	None	Dept. of Biostatistics
Dominican Republic	Natl. Serv.	Tuberculosis Div.	Com. Disease Div.	San. Eng. Sect.	None	*General Statistics Div.
Ecuador	Div. of Epidemiology and Control of Com. Diseases	Natl. Antituberculosis Serv.	Antivenereal Campaign	San. Eng. Dept.	...	Div. of Health and Demographic Statistics
Haiti	Div. of Public Health	...	Div. of Public Health	Div. of Public Health	None	Div. of Public Health
Mexico	Dir. of Epidemiology	Antituberculosis Campaign	Antivenereal Disease Campaign	San. Eng. Dir.; *Sec. of Hydraulic Resources	Indus. Hygiene Dir.	Biostatistics Dir.
Panama	Sect.	Campaign	Epidemiological Serv.	Sect.	...	Public Health Dept.; *Office of Statistics and Census
Paraguay	Dept. of Epidemiology	Inst. for Individual and Community Health	...	SCISP	Dept. of Indus. Hygiene	Div. of Biostatistics
Peru	Div. of Com. Diseases	Div. of Tuberculosis	Dept. of Venereology	...	Dept. of Indus. Hygiene	Dept. of Biostatistics
United States	Public Health Serv.; *Dept. of Agriculture	Public Health Serv.	Public Health Serv.	Public Health Serv.	Public Health Serv.; *Dept. of Labor	Public Health Serv.
Venezuela	Div. of Environmental Health and Com. Diseases	Div. of Tuberculosis	Div. of Venereology	Div. of Malariology; Div. of San. Eng.	*Min. of Labor	Div. of Epidemiology and Vital Statistics
Alaska	Sect. of Preventive Medicine	Div. of Tuberculosis Control	Sect. of Preventive Medicine	Sect. of Sanitation and Engineering	Sect. of Sanitation and Engineering	Bur. of Vital Statistics
Hawaii	Div. of Preventive Medicine, Bur. of Epidemiology	Div. of Preventive Medicine, Bur. of Tuberculosis Control	Div. of Preventive Medicine, Bur. of Venereal Diseases	Div. of Sanitation, Bur. of San. Eng.	Div. of Sanitation, Bur. of Indus. Hygiene	Div. of Health Statistics
Puerto Rico	Div. of Com. Diseases	Div. of Tuberculosis Control	Div. of Venereal Disease Control	Div. of Sanitation	Div. of Sanitation, Sect. of Indus. Hygiene	Div. of Demographic Registration and Statistics
Trinidad and Tobago	Div. of Disease Control	Div. of Tuberculosis	Div. of Venereal Diseases	Unit of Endemic Diseases	...	No special unit. Work by Health Education Office
Virgin Islands (U.S.)	Div. of Com. Diseases	Div. of Com. Diseases	Div. of Com. Diseases	Div. of Sanitation	...	*Bur. of General Serv., Vital Records and Statistical Serv.

*Organization other than the National Public Health Service.

Abbreviations:

Bur. - Bureau
B.P.H.S. - Bureau of Public Health Services
Com. - Communicable
Dept. - Department
Dir. - "Dirección" (Directorate)
Div. - Division
Indus. - Industrial
Inst. - Institute
Min. - Ministry
San. Eng. - Sanitary Engineering
Sec. - Secretariat
Sect. - Section
SCISP - Inter-American Cooperative Public Health Service

TABLE 56

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

Area	Maternal and Child Health	Dental Health	Nutrition	Health Education	Diagnostic Laboratory	Medical Care
Bolivia	Serv. established	Limited scale	Dept. of Nutrition	SCISP	Initial stages	*State agencies; *Natl. Social Security Fund
Brazil	*Natl Children's Dept.	State and local	Nutrition Sect.; *Min. of Labor; *Inst. of Nutrition of the Univ. of Brazil	Natl. Health Education Serv.	State and local	Div. of Hospital Org. *Others
Canada	Child and Maternal Health Div.	Dental Health Div.	Nutrition Div. *Dept. of Agriculture	...	Laboratories of Hygiene, Food and Drugs	Provincial activity
Chile	Dept. of Maternal and Child Care	Dental Health Sub-Dept.	Nutrition Sub-Dept.	Health Education Sub-Dept.	Central Laboratory Dept.	Medical Care Dept.
Colombia	Natl. Sect.	Natl. Sect.	Natl. Inst.	Central Sect.	Local level	Local activity
Costa Rica	Dept. of Maternal and Child Health	Dept. of Dental Health	Dept. of Nutrition	Dept. of Health Education	Public Health Laboratories	*General Welfare Div.
Dominican Republic	None	Local level	None	None	Public Health Lab. and Natl. Bromotology Lab.	Div. of Hospitals
Ecuador	Div. of Public Health Units and Health Centers	Div. of Public Health Units and Health Centers	Natl. Inst. of Nutrition	Div. of Health Education	Natl. Inst. of Health	...
Haiti	Local level	Div. of Health	Planning stage	Div. of Public Health	General Hospital	Hospitals and Dispensaries
Mexico	Dir. of Maternal and Child Health and Care	State and local	*Natl. Nutrition Committee	Dir. of Health Education	Central Laboratory and local laboratories	Dir. of Social Welfare
Panama	Serv. of the Public Health Units Sect.	Serv. of the Public Health Units Sect.	Serv.	Sect.	Central Public Health Laboratory	Hospital Div.
Paraguay	...	...	Local level	Dept.	...	...
Peru	Dept. of Maternal and Child Care	Dept. of Odontology	Dept. of Nutrition	Div. of Health Education	Natl. Inst. of Health	*General Dir. of Social Welfare and Hospitals
United States	*Children's Bur.; Public Health Serv.	Public Health Serv.	*Children's Bur.; Public Health Serv.; *Dept. of Agriculture	Public Health Serv.; *Children's Bur.; *Office of Education	Public Health Serv.	Public Health Serv.; *Social Security Administration; *Other Depts.
Venezuela	Div. of Maternal and Child Health	Div. of Dental Health	Natl. Inst. of Nutrition	Div. of Health Education	Div. of Laboratories	Hospital Inst. and Others
Alaska	Sect. of Maternal and Child Hygiene	...	Unit of Nutrition	Div. of Health Education	Div. of Public Health Laboratories	...
Hawaii	Div. of Preventive Medicine, Bur. of Maternal and Child Health	Div. of Dental Health	Div. of Preventive Medicine, Bur. of Nutrition	Div. of Health Education	Div. of Preventive Medicine, Bur. of Laboratories	Div. of Hospital and Medical Care
Puerto Rico	Div. of Maternal Health and Child Hygiene	Div. of Dental Hygiene	Div. of Nutrition and Dietetics	Div. of Health Education	Div. of Public Health Laboratories	...
Trinidad and Tobago	Maternity and Welfare Serv.	Div. of Dental Hygiene	Unit of Nutrition	Unit of Health Education	...	...
Virgin Islands (U.S.)	Div. of Maternal and Child Hygiene	Div. of Dental Serv.	Div. of Nutrition	*Bur. of General Serv., Health Education	*Bur. of Medical care, Div. of Laboratories	*Bur. of Medical Care

*Organization other than the National Public Health Service.

CHAPTER VI

SANITATION PROGRAMS

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

Sixteen countries and 18 other areas provided some information regarding water supply systems (Table 57). The percentage of the urban population served by these systems varied considerably. Efforts must be directed to providing water supply systems to the entire urban populations in the Americas. The provision of water which is free from disease-producing organisms is essential for the reduction in death rates from the gastro-intestinal diseases. As to be expected, in the rural areas the percentages were low.

Sewerage systems are in operation in many urban areas (Table 58) and the percentage of the urban population served varied considerably. As with water supply systems, the provisions of sewage disposal systems are a primary health need for all urban centers.

Since the countries and territories of the Americas are essentially rural, environmental sanitation programs are being extended to large rural areas. Although the provision of water supply and sewerage systems would logically be developed first for urban population, there are increasing needs and opportunities for promotion by the health services of satisfactory water supplies and the safe disposal of sewage in rural areas. The rural sanitation programs, as given in Table 59, usually included the construction of sanitary privies. Also in several countries they included the control of water supplies and control of insects and the improvement of housing.

The program for elimination of waste is given in Table 60. In general, the responsibility for this program appeared to belong to the local areas, cities, provinces or states.

It was stated that the control of milk was in many areas at least partially a responsibility of the local or national health services (Table 61). Also several countries exercised control over food in markets and slaughterhouses.

The programs of control of insect vectors were principally for control of anopheline mosquitoes and Aëdes aegypti by application of DDT to houses (Table 62). The status of programs in these fields were described in Chapter III under Malaria and Yellow Fever. However, in a few countries programs against rats, fleas and lice were also carried on.

Housing is a relatively new program in health services. Although the activities in this field in the Americas in health services were limited, Table 63 provides some data regarding this problem and indicates that this activity is being considered by health authorities.

TABLE 57

NUMBER OF WATER SUPPLY SYSTEMS AND POPULATION SERVED[a] IN URBAN AND RURAL AREAS OF THE AMERICAS, 1953

Country, state or territory	Total			Urban areas			Rural areas		
	Number of water systems	Population		Number of water systems	Population		Number of water systems	Population	
		Number	Per cent		Number	Per cent		Number	Per cent
Argentina.....	395	7 876 000	43	132	7 707 000	67	263	167 500	2
Bolivia.....	...	...	...	123	596 350	57	...	...	...
Brazil.....	...	...	...	b) 763	...	...	...	...	...
Canada (c).....	...	8 800 000	64	...	...	...	...	...	...
Chile.....	...	...	...	...	2 593 500	72	...	...	...
Colombia.....	407	2 823 000	23	316	2 723 000	62	91	100 000	1
Cuba.....	112	...	30-75	112	...	30-75	...	...	...
Dominican Rep....	292	652 000	28	77	482 000	88	215	170 000	10
El Salvador.....	...	...	...	151	594 550	85	...	...	...
Haiti.....	19	...	...	15	...	...	4	...	...
Mexico.....	...	11 532 660	41	...	...	...	...	...	...
Nicaragua.....	13	109 550	9	12	109 300	27	1	250	0
Panama.....	219	415 368	52	12	232 357	75	d) 207	183 011	37
Peru.....	...	...	30	...	...	60	...	...	10
United States....	16 747	93 500 000	59	2 267	76 700 000	89	e)14 480	16 800 000	23
Venezuela.....	...	...	...	f) 133	...	...	...	...	...
Alaska.....	39	50 000	24	5	31 000	57	34	19 000	13
Bahama Islands...	1	35 000	41	1	35 000	...	-	-	-
Barbados.....	4	208 000	94	1	88 000	100	3	120 000	90
British Guiana...	193	386 412	88	1	86 412	68	g) 192	300 000	96
British Honduras.	1	26 000	34	1	26 000	62	-	-	-
French Guiana....	2	11 000	37	2	11 000	100	-	-	-
Guadeloupe.....	3	55 000	18	3	55 000	72	-	-	-
Hawaii.....	89	499 794	96	17	344 869	96	72	154 925	96
Jamaica.....	62	312 000	21	1	265 000	98	61	47 000	4
Leeward Islands:									
Montserrat.....	15	14 000	100	5	2 000	100	10	12 000	100
St. Kitts-Nevis	9	40 000	77	4	20 000	...	5	20 000	...
Martinique.....	27	86 796	30	2	53 423	54	25	33 373	17
Puerto Rico (h)..	167	987 545	45	i) 56	807 545	90	111	180 000	14
Trinidad & Tobago	3	660 000	97	2	149 000	95	1	511 000	98
Virgin Islands (j)	4	3 500	14	1	3 500	24	-	-	-
Windward Islands:									
Dominica.....	1	12 000	21	1	12 000	...	-	-	-
St. Lucia.....	9	26 000	31	3	15 400	100	6	6 000	9
St. Vincent....	15	38 622	53	1	5 314	31	14	33 308	60

(a) Percentages of population are calculated using total population living in area.
(b) Number of cities with a total of 1 332 560 dwellings served in 1950.
(c) Excluding Nova Scotia, Yukon and Northwest Territories.
(d) Including 38 aqueducts for 61,020 and 169 wells for 121,991 population.
(e) Communities of less than 5,000 population with water supply system.
(f) Of 152 communities of 2,500 or more population, 133 had water supply systems.
(g) Artesian wells.
(h) Estimate based on number of customers; about 70 per cent of the total population may use the systems of aqueducts.
(i) The 76 municipalities are served by aqueducts.
(j) Individual homes are required by law to have private cisterns because of limited raw water supplies.

TABLE 58

NUMBER OF SEWERAGE SYSTEMS AND POPULATION SERVED[a] IN URBAN AND RURAL AREAS OF THE AMERICAS, 1953

Country, state or territory	Total			Urban areas			Rural areas		
	Number of sewerage systems	Population		Number of sewerage systems	Population		Number of sewerage systems	Population	
		Number	Per cent		Number	Per cent		Number	Per cent
Argentina.....	39	5 298 000	29	39	5 298 000	46	-	-	-
Bolivia.....	...	...	...	7	352 000	33	...	...	...
Brazil.....	...	...	...	b) 371	...	...	...	...	...
Canada (c).....	...	8 090 000	58	...	...	...	...	...	...
Chile.....	...	...	...	...	1 488 000	41	...	...	...
Colombia.....	281	2 500 000	21	281	2 500 000	57	-	-	-
Cuba.....	10	...	70	10	...	...	-	-	-
El Salvador.....	...	...	...	23	199 764	28	...	...	...
Haiti.....	2	180 000	6	2	180 000	43	-	-	-
Nicaragua.....	5	24 360	2	5	24 360	6	-	-	-
Panama.....	12	232 357	29	12	232 357	75	-	-	-
Peru.....	...	...	20	...	...	40	...	...	...
United States.....	11 811	91 800 000	58	...	...	...	...	...	...
Venezuela.....	...	...	...	d) 56	...	30	...	...	...
Alaska.....	30	36 000	18	5	30 000	55	25	6 000	4
Bahama Islands....	1	9 000	11	1	9 000	...	-	-	-
Bermuda.....	2	3 500	9	2	3 500	...	-	-	-
British Guiana....	1	86 412	20	1	86 412	68	-	-	-
British Honduras..	1	26 000	34	1	26 000	62	-	-	-
French Guiana.....	1	11 000	37	1	11 000	100	-	-	-
Guadeloupe.....	2	49 000	16	2	49 000	64	-	-	-
Hawaii.....	15	324 042	62	9	315 668	88	6	8 374	5
Jamaica.....	1	85 000	6	1	85 000	31	-	-	-
Martinique.....	1	576	0	1	576	1	-	-	-
Puerto Rico.....	55	359 000	16	55	359 000	40	-	-	-
Trinidad and Tobago	1	110 000	16	1	110 000	70	-	-	-
Virgin Islands (US)	3	3 500	14	3	3 500	24	-	-	-
Windward Islands:									
St. Lucia.....	1	10 000	12	1	10 000	65	-	-	-
St. Vincent.....	8	3 891	5	2	1 641	9	6	2 250	4

(a) Percentages of population are calculated using total population living in area.

(b) Number of cities with a total of 800,204 dwellings served in 1950.

(c) Excluding Nova Scotia and Yukon and Northwest Territories.

(d) Of 152 communities of 2,500 or more populations, 56 had sewerage system.

TABLE 59

RURAL SANITATION PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	A department has been established to lay down operating policies in coping with numerous problems, and a "Public Health Manual" was published to define standard procedures to govern activities with respect to: potable water supply, household sewage, garbage, urban hygiene, air pollution, industrial liquid wastes, contamination of streams, the house fly, rodents, city planning, slaughterhouses, markets and fairs, cemeteries, meeting halls and public shows, swimming pools, public baths, eating places and lodging houses. Teams for environmental sanitation work were formed in 1953 and the activities of these groups are coordinated with those of the municipalities. The National Department of Sanitation Works, an autonomous department, is in charge of water supply and sewerage services in the country, but in those areas not included in its plans, studies are being made in collaboration with the State railways to promote the establishment of local cooperatives for water supply services. Regulations have been issued for the construction of rural slaughterhouses, including recommendations on location and distribution of premises. A "Legajo Sanitario" (Sanitary Register) of villages and cities has been prepared, and presentation of periodic data from the municipalities is required in order to keep this register up to date. An epidemiological map is being prepared as the basis for statistical studies on water-borne diseases, so that action against such diseases can be planned. The First Argentine Congress of City Hygiene, held in 1953, was attended by the municipal authorities of the country, government officials, and representatives of professional and technical institutions. At that meeting bases were laid down for collaboration between the municipalities throughout the country and the Department of Urban and Rural Hygiene in the work of environmental sanitation, especially in rural and semi-urban areas.
Bolivia	Program operates on a small scale. There is one mobile unit equipped to install privies. This unit, which in the last four years has built 1013 blind shaft privies, also encourages the inhabitants themselves to construct privies. The Ministry of Hygiene has no sanitary engineering service of its own. The Division of Sanitary Engineering of SCISP, under the expanded cooperative program of the United States Government and the Government of Bolivia is carrying out water supply and environmental sanitation projects in the provinces situated north of the city of Santa Cruz. This work forms part of a joint program of education and agricultural development being carried out by both governments.
Brazil	The Ministry of Communications and Public Works, through the National Department of Sanitation Works, is the agency chiefly responsible for sanitation, soil recovery, and land development. An example of its activities is the recovery and sanitation of the so-called "Baixada Fluminense" area near the Federal Capital. The Special Public Health Service of the Ministry of Health is carrying on extensive rural sanitation work in the greater part of the Amazon Valley and in the valleys of the Dôce and São Francisco rivers.

TABLE 59

RURAL SANITATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Brazil (Cont.)	The Division of Public Health Organization, of the National Department of Health, conducts activities for the improvement of water supply and waste disposal, and also for housing improvement in rural areas. Instructions for the construction of sanitary wells have been widely distributed. In the northeast region of the country, this Division constructed 228 collective septic tanks and is endeavoring to carry forward in rural areas the installation of privies, principally of the type "surface absorbent pit with sanitary receptacle." In the rural area in the south of the country, 554 artesian wells were drilled and are in operation. (Condensed from the Report to the XIV PASC, page 87.)
Canada	Individual systems of water supply and sewage disposal in rural areas contribute to the problem of maintaining proper protection in pure water and adequate disposal systems. The lack of knowledge of standard requirements and scarcity of skilled personnel for inspection in rural areas are also factors in retarding the extension of effective sanitary protection. For Canada as a whole, the average number of persons served by each sanitary inspector in municipal health departments was 11,500, while for primarily rural units, the ratio was 21,200 persons to each inspector.
Chile	Programs for water supply and excreta disposal are being continued in the provinces of Aconcagua, Santiago, and O'Higgins-Colchagua. Studies were completed for a vast program of rural sanitation linked with a plan for the promotion of farm and livestock production and rural health in the provinces of Maule, Ñuble, and Concepción.
Colombia	Soil sanitation through construction of privies, some sewers. Water protection. Proper sewage disposal.
Costa Rica	There is no separate program. The work is done by the Inspectors and the Sanitary Engineering Department (aqueducts, privies, drains, etc.).
Cuba	This type of work is done sporadically. Attention is given to points where topographical conditions create a danger, and the work is intensified in certain circumstances, as sanitary needs require.
Dominican Rep.	Rural sanitation froms part of the programs operated under the Public Health Section, e.g.: construction of sanitary privies; insect control campaign; recommendations and notifications regarding the improvement and conditioning of dwellings; control of potable water supply. The construction and improvement of potable water facilities are activities of the National Department of Aqueducts.
El Salvador	The National Department of Public Health has initiated a program for the protection of river waters in the country, and is enforcing a prohibition on the river dumping of waste water from coffee-washing establishments and similar industries. At the same time it operates a limited program to protect drinking-water wells by sanitary installation of hand pumps. The Health Department has a plan in the capital city for the construction of cement privies, which are distributed to communities throughout the country for sale at low cost, the present demand being about 8,000 units per year.

TABLE 59

RURAL SANITATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Mexico	The rural sanitation activities conducted by the Sanitary Engineering Department of the Public Health and Welfare Ministry are part of the rural social welfare program, which has the aim of improving community organization from the social, economic, and cultural viewpoints and includes, as one of its specific projects, the promotion of environmental sanitation. It is estimated that primitive and inadequate sanitary practices exist in over 90% of the communities. According to the number of inhabitants, the type of social organization, and the economic resources of the community, the following activities will be carried out in the order listed: Water Supply: Taking into account the limited water resources in the region, water supply installations will be constructed with due attention to sanitary protection, priority being given to collective service at the point where the water source is located if the distance to the community is not over one kilometer, and to collective services through gravity or more elaborate conduction to the community if the source is more than one kilometer away. Excreta Disposal: Construction of privies at rural schools, where these are found; construction of privies at schools and in the community; installation of sanitary facilities and septic tank at the school, and privies in the community; construction of privies in the community, sewage system to serve public buildings, and septic tank. House Sanitation: Minimum improvement: separation of the kitchen and isolation of animals; in addition to the above enlargement of the dwellings and improvement of floors, walls, and roofs.
Panama	The rural sanitation program is now being initiated. These activities will be intensified in the Chorrera area with the assistance of UNICEF. Included in the general plan of work of the health units.
Peru	Rural sanitation programs are conducted in small communities for the harnessing of springs and the building of wells with simply constructed facilities and basins in the public squares in the Department of Ica, Arequipa, and Lima, and in the Lima, Pativilca, Huarás demonstration areas in collaboration with WHO and UNICEF.
United States	At present, slightly more than 1,600 of the 3,071 counties in the Nation have public health organizations. Most of these provide some health services to the approximately 73 million persons residing therein. The Public Health Service offers technical guidance and consultation to states, issues publications and sponsors research that is designed to improve the sanitation of the rural environment. However, the advancement of rural sanitation is handicapped both by lack of awareness of the need and by lack of professional health workers in rural areas.
Venezuela	Of the estimated 435,000 dwellings in rural areas of the country in 1950, 90% lacked privies or other adequate facilities for excreta disposal, 85% had dirt floors, 75% had roofs of thatch or other inadequate material, and 90% were supplied with water from contaminated or doubtful sources. The Ministry of Health and Welfare is promoting the construction of privies in rural areas and during the past 7 years some 70,000 were built, a figure that represents only 16% of the requirements. With respect to water supply, the Government is conducting a program, with the assistance of the Institute of Inter-American

TABLE 59

RURAL SANITATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Venezuela (Cont.)	Affairs, for the construction of aqueducts in small communities (500 to 5,000 inhabitants) and has completed 81 aqueducts serving 107 communities with a total of 106,984 inhabitants. In recent years improvement has been observed in the roofing of many rural dwellings, the thatch being replaced by corrugated aluminum sheets. The inhabitants made the change on their own initiative.
	. . . . .
Alaska	Considerable work has been done in establishing services for the outlying areas where provisions for direct or trained service are impractical. Initial surveys of four native villages have been completed as a preliminary step in setting up programs for training native sanitation aids, who will be assigned to these communities. This program has been developed in cooperation with the Alaska Native Service, Alaska Department of Health, and Arctic Research Center. The sanitation aids have been selected and the first school will be started in May or June.
Barbados	The local government is supporting a program of installation of latrines.
Bermuda	There is no greater sanitary need than an adequate water supply, and no single factor so threatens to curtail the future of the territory as the existing inadequacy. Most of the buildings now have adequate tanks, but the older buildings do not always fulfill the household requirement of 1,000 gallons of tankage for every 100 square feet of roof by horizontal measurement. There was a moderate demand for good well-water, which had to be chlorinated. There are two wells that supply most of this water: that of the Salisbury Construction Company, with a sale of 430,000 gallons a year, and another under the care of the health authorities. Since 1951, a vigorous rat extermination project brought rodents under strict control. Started in the cities of Hamilton and St. George, it is being extended to the farms and by 1956 the Island should have been systematically covered. In 1953, it was estimated that 41,000 rats and 9,400 mice were killed.
British Guiana	The sanitation of the rural areas was fairly well maintained during 1953, special attention being paid to sewage disposal in new settlements and to measures for the control of communicable diseases.
British Honduras	Rural sanitation is under the supervision of the District Sanitary Inspectors. The district town boards are responsible for scavenging and sewage disposal.
Guadeloupe	The most important problem is that of supplying rural settlements with potable water. No attempt will be made to supply water to each dwelling, which is impossible owing to existing conditions in Guadeloupe; instead, sources of supply will be constructed as strategic points. The Health Service collaborates with the Departmental Service of Rural Engineering in this work.
Hawaii	This program is carried out effectively on all the islands under the jurisdiction of the Department of Health, Territory of Hawaii. Public potable water supplies are developed wherever possible. Private potable water supplies are developed by the sugar and pineapple plantations where public potable water supplies are not available. Most of the potable water supplies are surface supplies. A small number of private individually owned wells are used in the rural areas.

TABLE 59

RURAL SANITATION PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Hawaii (Cont.)	A large percentage of the rural residences are served by a private sewage disposal system in the nature of cesspools. Septic tanks are used in many of the rural sugar and pineapple plantation villages. Running water and water flush toilets are found in most of the residences in the rural area. Privies are used only in areas where there is no running water supply. Food establishments, eating and drinking establishments, and markets are properly supervised in the rural areas.
Jamaica	Rural sanitation is supervised by local health departments, through sanitary inspectors.
Leeward Islands Antigua	Mostly pit latrines are used; some of the larger houses have septic tanks.
Leeward Islands Montserrat	Mostly pit latrines are used.
Leeward Islands St. Kitts	Over 3,000 private latrines of the bored hole type have been installed in St. Kitts in the last four years, in connection with the Private Latrine Program of the Department. Progress in Nevis and Anguilla, which are unsuitable for boring, has been slow. The provision of water supply system has greatly improved.
Martinique	The so-called "Southern Network" potable water supply program has been extended; four additional communes will receive this service by the end of 1954. The water supply works for the Morne-Vert and Carbet communes have been completed.
Puerto Rico	Under the rural sanitation program, sanitation of the soil is carried out in order to prevent intestinal parasitosis. With this objective, a program is under way for the construction and distribution of privies among the indigent population of rural areas and for the application of medical treatment. Sanitation of water bodies and supply of potable water to the rural population are also part of this program.
Surinam	The capital has had an excellent water supply since 1933. Escherichia coli has never been found in the water. The number of bacteria is from 2 to 6 per ml. However, the fluorine content is not sufficient. Steps have been taken to improve this condition. At the bauxite plants and in some estates, the water supply is also good. In the remaining rural areas the water is still inadequate. There, rain, ground, or surface water is used.
Trinidad and Tobago	The program includes community health education, general environment sanitation, and surveys.
Virgin Islands (U. S.)	Because of the population characteristics of the Virgin Islands the rural areas and populated communities are more or less considered synonymous and consequently receive like attention in many respects. Individual houses are required by law to have private cisterns because of limited raw water resources.
Windward Islands Dominica	Sanitary inspectors are in charge of supervision.
Windward Islands St. Lucia	The work is under the supervision of sanitary inspectors. A few septic tanks and septic privies are built, but bored hole and pit latrines are most widely used.
Windward Islands St. Vincent	District sanitary inspectors carry out routine inspections.

TABLE 60

GARBAGE AND REFUSE DISPOSAL IN THE AMERICAS

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

TABLE 60

GARBAGE AND REFUSE DISPOSAL IN THE AMERICAS (Continued)

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

TABLE 60

GARBAGE AND REFUSE DISPOSAL IN THE AMERICAS (Continued)

Area	Status of problem
Venezuela	Waste collection and disposal is a municipal service. In the principal cities, dwellings have quite satisfactory collection service when they can be reached easily by the vhicles, but service is practically non-existent in the poor districts, which have grown irregularly, especially those on hills and highlands. Waste disposal is usually done by dumping or heaping, sometimes at a short distance from inhabited areas. The city of Maracaibo is an exception, as the Public Health and Welfare Ministry is collaborating with the municipality on an experimental basis; it assumes responsibility for collection and disposal and is providing good service to nearly all dwellings, using the sanitary earth fill method for the disposal of waste. The Sanitary Engineering Division provides technical advisory services to municipalities that wish to improve their waste collection and disposal systems.
	. . . . .
Alaska	The cities of Fairbanks and Anchorage have just started sanitary landfill operations, which are of a somewhat experimental nature in this area. Juneau and Ketchikan have excellent collection services, but use open dumps for disposal purposes.
Bahama Islands	A garbage collection and disposal service is maintained in New Providence and some of the Out Island Settlements.
Bermuda	Garbage and refuse service is given twice weekly throughout the Island, and daily except Sunday in part of the towns. The northern half of the city of Hamilton remains unsewered. Recommendations on this large subject have already been made. The new building regulations have prevented the drainage problem of North Village from becoming worse. Wherever the congestion of buildings has already become too great in this section, it will no doubt be better to condemn and demolish a few cottages rather than attempt to install a most expensive sewer. The sewer in the town of St. George was completed in 1944. Since then, 142 house connections with it have been made, leaving 47 still to be done. Scavenging service is maintained with two large trucks and two 3-ton trucks in service. A light van cleared the roadsides and public beaches. About 3 acres of marsh were reclaimed. The average rate for collecting and disposing of a large load of rubbish was 30 shillings. The cesspit emptier which went into commission at the beginning of the year did 68 jobs and earned £ 345.
British Guiana	In the urban areas and in one rural district, the local sanitary authorities continued to remove and dispose of garbage and refuse. In all other areas disposal is effected by individual householders under the supervision of the Sanitary Department.
British Honduras	Garbage and refuse disposal is under the control of the Belize City Council and District Town Boards.
French Guiana	Garbage and refuse service is given in Cayenne and in St. Laurent du Maroni.
Guadeloupe	In large communities, the collection of waste is made every morning in wagons equipped with drums covered with movable panel lids and operated by specialized personnel. The inhabitants deposit the waste in garbage containers closed with airtight lids. Generally,

TABLE 60

GARBAGE AND REFUSE DISPOSAL IN THE AMERICAS (Continued)

Area	Status of program
Guadeloupe (Cont.)	the collection is made with motorized vehicles. The waste usually is dumped at spots far from dwellings, the so-called "simple dumping" system being used. The Health Service is endeavoring to replace this system with "controlled dumping."
Hawaii	The individual is required to dispose of his own garbage by feeding, incinerating or burial. Garbage in the rural areas is cooked and fed to the hogs. Refuse is collected by the County government in many rural areas and disposed of in open dump where they are incinerated. No large public-operated incinerator is found in the rural areas. Little or no sanitary-fill dumps are operated in the rural areas. Where public collections are not available, the individual is required to dispose of his refuse material either by incineration or burial.
Jamaica	In the Corporate Area tipping is done. The refuse is used to reclaim eroded land. Parish capitals arrange daily collection and dumping of refuse. Incineration is used in one parish.
Leeward Islands Antigua	Incineration and dumping are used but are not satisfactory.
Leeward Islands Montserrat	Waste is deposited as field manure.
Leeward Islands St. Kitts	The old system in St. Kitts of collection and removal of refuse by estates is being gradually given up and, with a few set backs, there is improvement in rural cleansing.
Leeward Islands Virgin Islands	Garbage is collected in Roadtown, twice weekly, in an open truck.
Martinique	At present waste is disposed of by the "controlled dumping" system; incineration is being planned. An incineration program is under way at Fort-de-France.
Puerto Rico	The collection and disposal of refuse and garbage is the responsibility of the municipal governments. The Department of Health is making studies to plan a more effective and economical system of collection and disposal, and is making the pertinent recommendations. The municipal authorities receive from the Department of Health all the guidance and technical assistance necessary for this work.
Trinidad and Tobago	The program includes sanitation of dumping grounds, incineration, and maintenance of adequate scavenging service.
Virgin Islands (U. S.)	The Public Works Departments provide garbage collection and disposal services. Supervision and sanitary control is exercised by the Department of Health. Approximately 1500 houses are furnished with soil cans and collection service.
Windward Islands Dominica	Garbage is collected and incinerated in Roseau; elsewhere, either incineration or burial is used.
Windward Islands St. Lucia	In Castries garbage is collected in vans from bins and is dumped at sea. In other areas controlled dumping grounds are employed.
Windward Islands St. Vincent	Garbage is collected by motor van and incinerated in Kingstown; incineration or disposal by burial is used in small towns.

TABLE 61

MILK AND FOOD CONTROL PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	The National Milk Service was established in December 1951. The greatest problem encountered is that of supplying safe milk to distant localities. In the large cities this is not a problem, because the milk is transported in refrigerator-tank cars and trucks, and mechanized equipment is available for purifying and pasteurizing milk. But the periodic health inspections of dairies must be intensified further, and continued efforts must be made to have all milk dispensed in bottles. Special arrangements were made with railways and automotive carriers to transport milk for distances ranging from 300 to 1,000 kilometers (190 to 620 miles); at times, this is done by cooperatives or the dairymen themselves. This transportation is provided regularly and permanently and, with its low cost—one centavo per kilogram—it brings great benefit to the people. Also of great importance is the manufacture of powdered and condensed milk, which is available in all parts of the country and is exported in large quantities.
Bolivia	There is little or no control over milk. Control of other foods is limited to certain bromatological analyses, some surveillance over food-handlers, and occasional visits to dispensers. The two pasteurization plants in operation are out-dated and not subject to sanitary inspection.
Brazil	Control over inter-state marketing and exporting of certain products of animal and vegetable origin is carried out by the Ministry of Agriculture through the Animal Health Protection Service, the National Department of Animal Production, and the Department of Agricultural Development. These agencies make inspections to check on the health of animals, as well as on installations and transportation facilities used, etc. Sales to the public are under the control of the state health services. The Ministry of Health, National Department of Health, through its Nutrition Section (Division of Public Health Organization) surveys sanitary conditions as regards milk supplied to the state capitals, making weekly examinations of milk samples. Bills covering the Organic Health Law and the National Food Code are before the National Congress for approval. (Condensed from the Report to the XIV PASC, page 86.)
Canada	Milk: Sanitation standards concerning the production, processing and sale of milk are created and administered by Departments of Health with Departments of Agriculture co-operating in certain phases of supervision. Standards are maintained through inspection and certification of producers' premises, pasteurization plants and other processing industries. Routine quality tests are made of raw milk delivered to pasteurization plants. It is estimated that in 1952 over 80 per cent of all milk marketed in Canada was pasteurized. Two provinces have enacted legislation requiring pasteurization of all marketed milk in specified areas; in other provinces pasteurization services are undertaken through local initiative. Food: Control over other foods includes the supervision of food handling establishments such as butcher shops, eating places, canning or frosted food locker plants, bottling plants, public markets and slaughterhouses. Supervision of restaurant sanitation included such measures as swabbing of utensils and the registration and X-ray of food handlers.

TABLE 61

MILK AND FOOD CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Chile	Regulations for the protection of foods continue to be enforced, from the production to the dispensing stages.
Colombia	Local programs covering milk and foods, animal herds, dispensing and transportation of products, and hygiene of the personnel, are carried out by public health agencies.
Costa Rica	In the control of both domestic and imported foodstuffs, the office in charge of this work is assisted by the sanitary inspectors, the chemical and bacteriological laboratories, the Customs Office personnel, the Animal Health Section, and the juridical agencies. Before imported products are given clearance, samples are taken to determine whether they meet the legal sanitary requirements. In the case of national products, all foods, and also the processes used in preparing some of them, are subject to control by sanitary inspectors. Samples of milk are taken to ensure that the product meets the legal requirements, and control is maintained also over pasteurization and sterilization plants and over dairies in general.
Cuba	Milk, food, and beverages are subject to control through periodic bacteriological examinations and by inspection of the industries by sanitary inspectors and specialists.
Dominican Rep.	Control over milk and other foods is the responsibility of the Public Health Ministry, which has a food section for this purpose. Public health physicians and sanitary inspectors are responsible for checking on the conditions under which food is sold in markets, milk stations, butcher shops, etc. In addition, a check is maintained on conditions in stables or barns, slaughterhouses, canneries or bottling plants, and carriers, as well as on the health of dairy animals and beef cattle. The services of the National Public Health Laboratories are utilized for on-the-spot investigations.
Honduras	The Bromatological Department of the National Health Department is responsible for the analysis of food intended for consumption, as well as for the study of food composition and conditions under which foodstuffs are sold.
Mexico	Control measures are applied with respect to the health of dairy animals, sanitary milking methods, equipment and machinery used for pasteurization, conditions on the premises (stables, pasteurization plants, dairies, milk trucks, etc.). All persons handling or transporting milk must pass physical examinations. Clandestine sales and adulteration in all its forms are combatted, and pasteurization plants are subject to control. Records are kept for all stables and pasteurization plants, suppliers or transporters of milk, distributors and dispensers. Physio-chemical and bacteriological analyses are made periodically. Further efforts will be made to improve sanitary conditions in slaughterhouses and markets, waste disposal methods, and treatment of manure for fertilizing purposes. Other foods, such as milk derivatives, meat and meat products, fish, and canned and bulk foodstuffs are periodically examined by means of samples taken by inspectors of the food and beverage service. The samples are analyzed by the Central Laboratory of the Public Health and Welfare Ministry, whose findings serve as the basis for withdrawing altered or adulterated foods from the market. All personnel preparing or handling foods and beverages undergo clinical examinations, so as to prevent the spread of communicable diseases by infected persons.

TABLE 61

MILK AND FOOD CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Panama	This control work is conducted pursuant to the provisions of the Public Health Code and other pertinent regulations. The program is carried out principally in the country's urban areas. At present the work is being extended to the semi-urban and rural districts. Included in the general plan of activities of the health units.
Peru	Control measures are carried out by the Ministry of Agriculture and the municipalities, under the supervision of the Ministry of Public Health, Sanitary Engineering Department. A Project for Control of Milk and Milk Products (Regulations) is pending approval.
United States	All of the states have milk sanitation programs, some of which are administered by the state departments of health, some by state departments of agriculture, and a few by other state departments. The adequacy of the state milk sanitation regulations and the effectiveness of these programs is not known in all of the states; however, the Milk Ordinance and Code--1953 Recommendations of the Public Health Service--has been adopted as the basic standard for the sanitary control of milk in 34 states and 2 territories, and as local ordinances in 1571 municipalities and 405 counties. The total population of the areas covered by this Ordinance and Code is approximately 70,000,000 persons. It is estimated that 94% of the market milk sold to urban populations is protected by pasteurization. All of the states have food sanitation programs varying from broad laws dealing primarily with wholesomeness, adulteration and labeling of food products, to detailed sanitation standards for the various types of food processing and food service establishments. The Ordinance and Code Regulating Eating and Drinking Establishments--1943 Recommendations of the Public Health Service--has been adopted as the basic standard in 30 states, 2 territories and the District of Columbia, and as local ordinances in 685 municipalities and 348 counties. The total population of the areas covered by this Ordinance and Code is approximately 90,000,000 persons.
Uruguay	A monopoly for the pasteurization of milk, using the rapid method, was established in Uruguay in 1936. The total figure for pasteurized milk is 400,000 liters daily and that for inspected raw milk, 50,000 liters daily. An ordinance of the municipal authorities of Montevideo makes the sealing of milk bottles compulsory. In addition, the Sanitary Milk Control Service makes a daily inspection of milk in Montevideo hospitals and maintains control over dairy farms that supply milk to aid centers (Centros Auxiliares) and hospitals in the Republic. (Condensed from Report to the XIV PASC, page 26.)
Venezuela	The staffs of the health units are entrusted with the control of milk and other foods, since the Ministry of Public Health and Welfare is the responsible central agency, by national law. There are six modern pasteurization plants in the country which supply milk to the most important cities. These plants are under constant inspection. In the rest of the country milk is sold raw, but it is the custom to boil it when received in the home, so as to preserve it. The majority of the slaughterhouses are municipal industries. In cities where there are health units, meats are inspected, after quartering, by veterinarians or specialized inspectors. Samples of all types of foods must be submitted for bromatological

TABLE 61

MILK AND FOOD CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Venezuela (Cont.)	examination before they are approved for sale. This measure is enforced, but periodic examinations are undertaken only occasionally. All food handlers must carry a health certificate issued by the public health authority and subject to renewal each year.
	. . . . .
Alaska	Regulations have been adopted by the Territorial Board of Health governing the sanitary control of milk supplies, frozen desserts, and all types of food establishments and shellfish. These regulations are based on the various ordinances and codes recommended by the Public Health Service. Inspection services have not been extended to the entire population because of the great distances involved. The Territorial Health Department is endeavoring to induce the larger communities to provide, or contract with them for adequate local inspection services.
Bahama Islands	Regular inspections of food establishments are carried out, including bacteriological and other analyses of milk and water.
Barbados	The local government is sampling and testing milk and other foods.
Bermuda	Since 1938, all the milk that is sold has been pasteurized. Of the three pasteurizers, one is a well-equipped modern plant. Twenty-two farmers sent 1,984,000 quarts of milk to the pasteurizers and received £ 132,570 for it. In general, the producers, most of them tenants on short leases, have worked hard. The Legislature has continued a protective measure to save the dairy-men from the competition of reconstituted milk.
	Ice cream is manufactured at 8 places, with a production at mid-summer of about 3,200 quarts a day.
British Guiana	The sanitary control of milk and other food continues, under the provisions of the Public Health Ordinance. The recently enacted regulations for improved sanitary manufacture of frozen sweets and coconut oil were brought into force during 1953.
British Honduras	There is practically no local supply of milk. All meat is inspected after slaughter and passed by the Health Department. Sanitation of the Belize and district markets is supervised by the Health Department.
French Guiana	A special committee was created to study a program for the sanitary control of milk and food products.
Guadeloupe	A program for the production and distribution of bacteriologically certified pure milk, guaranteed as to its nutritive qualities, in mechanically sealed bottles, is being carried out by a private concern, with the approval of the Health Service. Tests for the most sanitary preparation of bread and of meats are being studied.
Hawaii	Personnel of the Division of Sanitation enforce the public health regulations relating to milk and milk products.
	Milk specimens are daily collected for examination by the Department of Health's laboratory. Each day the dairy inspectors make official inspections of milk producers, distributors and milk pasteurization plants. During each six-month period, each milk supplier and his product are graded. Grades are given on the basis of their fulfilling sanitary and/or chemical and bacterial standards.
	Control of other foods is maintained through a continuing program of food establishment inspection and examination of various food items. Different types of foods are collected each day and submitted

TABLE 61

MILK AND FOOD CONTROL PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Hawaii (Cont.)	to the laboratory for examination. This examination may be physical, chemical and/or bacterial. The Division of Sanitation has a group of sanitarians who daily visit eating places, and food manufacturing and storaging establishments, to check on their conformity with sanitary regulations. Perishable foods, are embargoed or condemned and other remedial measures are undertaken when insanitary conditions or practices are observed in the field.
Jamaica	Milk, meat, and other foods are controlled by the local health department, through medical officers and sanitary inspectors.
Leeward Islands	Meat is inspected and milk is subject to analysis. Bakeries and markets are inspected. Improvements are expected when the Public Health Ordinance for the whole Presidency is passed.
Leeward Islands Montserrat	Milk and foods are subject to laboratory tests.
Leeward Islands St. Kitts	Milk and food regulations have recently been passed by the Central Board of Health, but are not yet fully enforced. A sanitary inspector is being trained in Jamaica in the inspection of meat and other foods. Food sanitation has priority in the future work of the Health Department.
Martinique	Milk and food production is controlled by the veterinarian of the city of Fort-de-France and by the inspectors. Fresh milk is protected against adulteration with reconstituted dried milk. The milk station program is about to be successfully completed.
Puerto Rico	The program for the control of milk and other foodstuffs is carried out by means of direct inspection and supervision of places where such products are produced, transported, and handled. All persons engaged in the production of milk must possess a health certificate. The physical condition of dairies and production places must meet the minimum sanitary requirements established by the regulations governing production, sale, and transportation of milk in Puerto Rico. The U. S. Department of Agriculture (Bureau of Animal Industry) is responsible for the control of tuberculosis and brucellosis in milk cattle.
Trinidad and Tobago	Sanitation of dairies, markets, and slaughterhouses is supervised. Milk is pasteurized. Food by-laws regulate the control.
Virgin Islands (U. S.)	Dairies are licensed and inspected by the Department of Health. A law prescribes minimum standards for the production and sale of either raw or pasteurized milk. Although the health department requires the use of pasteurized milk in hospitals and government institutions, the use of raw milk by the general population is extensive. However, with the recent establishment of 2 pasteurization plants, the use of pasteurized milk is increasing. Routine inspection of food handling establishments, slaughterhouses, markets, and institutions is made. The original and annual licensing of food handling establishments is made under health department approval.
Windward Islands Grenada	Medical certificates are required from food handlers. Sanitary inspectors inspect products and take samples.
Windward Islands St. Lucia	Milk and food, canned and fresh, are regularly inspected by sanitary inspectors, and when necessary are condemned. Milk is tested regularly, as is water, at the government laboratory.
Windward Islands St. Vincent	Milk and foods are regularly inspected by sanitary inspectors.

TABLE 62

PROGRAMS FOR INSECT VECTOR CONTROL IN THE AMERICAS

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

TABLE 62

PROGRAMS FOR INSECT VECTOR CONTROL IN THE AMERICAS (Continued)

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

TABLE 62

PROGRAMS FOR INSECT VECTOR CONTROL IN THE AMERICAS (Continued)

Area	Status of program
United States	In its environmental health program, the Public Health Service conducts a special campaign to determine how diseases are transmitted, what are the specific and important vectors, and what are the best practical methods for controlling the vectors. Research laboratories gather facts about disease, vectors, and controls; next, research laboratory findings are listed on a small scale in field studies; third, if the findings prove sound, they are broadened into large-scale control operations carried on by state and local health departments.
Venezuela	The Anopheles control work is conducted by the Malariology Division. The figures reached in 1953 were 548,304 houses (87% of the total in the malaria zone) and 2,172,500 persons protected with residual-action insecticides. The Aëdes aegypti control work under the Division of Malariology was extended to 296 localities in the non-malarious zones, and only 8 localities remained positive for this vector at the end of 1953. The Malariology Division also has undertaken an extensive campaign against Triatomidae with the use of Dieldrin. Rodent control is entrusted to two Divisions. The first, the Yellow Fever Division, conducts activities in the sylvatic plague zone, where 869 kilograms of 10% DDT and 350 kilograms of bait with Warfarin were used in 1953. The Malariology Division, operating outside the plague zone, carries on campaigns against domestic rodents.
	. . . . .
Alaska	This program is carried on only on a complaint basis, although considerable research has been done on insects and their control by Arctic Health Research Center. Rodent control programs have been carried on from time to time in the larger communities. Apparently, this program is being continued only at Fairbanks.
Bahama Islands	An Aëdes aegypti eradication program has been started this year with the help of the Pan American Sanitary Bureau.
Barbados	A program for eradication of the Aëdes aegypti is under way.
Bermuda	The outstanding event of 1953 was the investigation made on behalf of Pan American Sanitary Bureau to see if any traces of Aëdes aegypti could be found. The mosquito had not been seen since 1951. In a two-week search and in subsequent investigations, no evidence of its presence has been found. The routine mosquito control measures were maintained. Ten miles of trenches were cleared, and 600 yards were filled as no longer needed. About 3 acres of marsh were reclaimed. Nevertheless, 1,654 breeding places were found, mostly of Culex fatigans. The Aëdes sollicitans and taeniorhynchus are ordinarily combatted by means of trenches supplied with larvae-eating fish. This year, the Works Department raised the embankment and improved the installations.
British Guiana	British Guiana is not included in the Pan American Sanitary Bureau Caribbean program. In addition to routine residual control for malaria and urban yellow fever, encouraging results have been recorded against Culex fatigans with Dieldrin.
British Honduras	Spraying of houses with DDT in Xylol has been undertaken twice yearly. All vats and water containers are oiled with kerosene

TABLE 62

PROGRAMS FOR INSECT VECTOR CONTROL IN THE AMERICAS (Continued)

Area	Status of program
British Honduras (Cont.)	and DDT. Survey of breeding places of mosquitoes was undertaken in 1953.
French Guiana	There are annual sprayings of dwellings with residual insecticides, and also measures to combat the Culex fatigans larvae. The campaign for eradication of Aëdes aegypti and Anopheles darlingi is kept active.
Guadeloupe	Every year the Departmental Service of the Antimalaria Campaign carries out a disinsectization campaign, efforts being concentrated against the Anopheles, vector of malaria, and the Aëdes aegypti.
Hawaii	The mosquito control program of the Division of Sanitation is carried out by the Bureau of Mosquito Control. It is the function of the Bureau to: provide for the control of mosquitoes as they are vectors of diseases as well as pests; maintain a nucleus of well-trained workers which can direct an expanded program; carry out a regular program of reducing Aëdes mosquitoes to a low breeding index; conduct surveillance against the introduction of new species of mosquitoes; perform research for more effective control methods; provide technical advisory service; conduct continuous education of the public. Investigational, inspectional, educational and correctional activities of all premises within the cities of Honolulu and Hilo. A spray crew undertakes the spraying of storm drains, potential breeding places on the waterfront and airport, as well as ground water such as streams, ditches, swamps, and ground pools in the city area. In the rural areas of Oahu as well as the suburban districts of Honolulu, inspectors operate the Tifa fogging machine for aerosol space spraying at night, as well as to undertake survey work on Culex breeding. There is a danger of the introduction of Japanese B Encephalitis as well as the spread of filariasis on the island, both of which may be carried by the Culex mosquito. Research and Investigations: Testing of new insecticides which are continuously coming into the market is carried on. Their effectiveness under local conditions and with our local species of mosquitoes is being ascertained. Testing of different methods of application of larvicides and adulticides under different conditions is undertaken.
Jamaica	Residual spraying has been in progress for some years now, as have larvicidal measures in Kingston and Montego Bay, the latter recently superseded by residual spraying.
Leeward Islands Antigua	Residual spraying and antimalaria measures have been so far very successful. Aëdes aegypti surveys were completed in 1953.
Leeward Islands Montserrat	Antimosquito measures are taken by the Sanitary Department.
Leeward Islands St. Kitts	Malaria has been eradicated from Nevis by DDT residual spraying. In cooperation with UNICEF, an insect control program for

TABLE 62

PROGRAMS FOR INSECT VECTOR CONTROL IN THE AMERICAS (Continued)

Area	Status of program
Leeward Islands St. Kitts (Cont.)	eradication of the Aëdes aegypti was commenced on 2 April 1954. DDT residual spraying in St. Kitts and Anguilla will be the main feature of this program. The Aëdes aegypti has been eradicated from Nevis. The fly control program is based mainly on sanitary work.
Leeward Islands Virgin Islands	An Aëdes aegypti eradication program is planned for 1954.
Martinique	The campaign against Aëdes, Anopheles, and Culex continues.
Puerto Rico	The Department of Health is using 5% DDT for the control of malaria and other insect vectors. Measures to control insect vectors such as flies, lice, ticks, etc., are limited to offering technical assistance to the governmental and private agencies concerned with insect problems.
Surinam	Residual house spraying with 5% DDT in kerosene was introduced in 1949. In some parts of the country the Aëdes aegypti has been eradicated and has not been found again. In 1952 a regulation was passed by the Legislative Council making it compulsory to submit to all measures prescribed for destroying mosquitoes. In January, 1953, UNICEF offered assistance for the insect control program for a period of two years.
Trinidad and Tobago	The DDT residual-spraying program against malaria, yellow fever, and flies is active.
Virgin Islands (U. S.)	The sanitation service of the Virgin Islands Health Department engages in direct operations to control mosquitoes by larviciding, placing of fish in cisterns, and inspection of premises to control mosquito breeding in artificial containers. Efforts are made through routine inspections to reduce fly breeding sources. Rat control activities are limited to advisory service and enforcement of regulations regarding control of garbage and premise, eating and drinking establishment sanitation. A special DDT spraying project in St. Croix is operated to control filariasis.
Windward Islands Dominica	A residual-spraying program is in progress.
Windward Islands Grenada	A WHO and UNICEF-assisted program is under way.
Windward Islands St. Lucia	The insect vector control program is directed almost entirely against mosquitoes and the house fly. Regular oiling of water bodies has been carried out. In 1953, an insect control program, directed in the main against Aëdes aegypti and Anopheles aguasalis, was started.
Windward Islands St. Vincent	A program for eradication of the Aëdes aegypti is carried out in ports and airports; control measures are undertaken elsewhere.

TABLE 63

HOUSING PROGRAMS IN THE AMERICAS

Area	Status of program
Argentina	During recent years, an intensive educational campaign for the promotion of hygienic housing has been conducted in the country. Through the coordination of State action and private initiative, the volume of hygienic, adequate, comfortable, and economical housing has been increased considerably. A national agency has been set up within the Ministry of Social Welfare and Public Health to perform advisory services with respect to types of regional housing, better utilization of local construction materials, and factors affecting public health and hygiene.
Bolivia	Although the 1950 census figures on the number of home-owning inhabitants are not yet available, the figure is estimated to be between 80 and 90%. Houses range from the most primitive type, in the rural tropical area, to the most modern styles. The Federal Government, through the Social Security Funds, is endeavoring to raise housing standards by constructing low-cost units in populated centers for the benefit of laborers and persons in low-income brackets.
Brazil	Proper house construction is a problem attended to by the municipal authorities. The question of habitability of houses is the concern of the state services, which, through the Health Posts and Centers, make inspections and issue permits to new occupants, when houses have undergone alterations to meet sanitary regulations. The license granted usually bears the title "For Occupancy." The same license is required for new constructions, which are passed for occupancy after inspection by the local sanitary authorities. Such requirements are less strict in rural areas because of special conditions found in that environment. (Condensed from the Report to the XIV PASC, page 88.)
Canada	Under the National Housing Act, the principal legislation of the federal government in the field of housing, minimum requirements are set for planning, construction and materials for building projects assisted under the terms of the Act. During the eight-year period, 1945-1952, homes completed under this and other government-sponsored plans accounted for about one third of the new permanent dwellings built in Canada.
Chile	Support and advisory services are given for the improvement or renovation of rural housing in the Provinces of Aconcagua, Valparaíso, and O'Higgins. Nation-wide surveys of crowded temporary housing centers are undertaken with a view to solving the problems of housing for needy people. Cooperation is given in the programs of the Housing Corporation, a body that carries out town development projects.
Colombia	Sanitation and control at the local level.
Costa Rica	Housing sanitation comes under the supervision of the sanitary inspectors, but there is little activity in this field. The Engineering Department reviews plans for new urban constructions from the sanitary point of view.
Cuba	The sanitary inspectors maintain surveillance over sanitary conditions in urban dwellings, especially apartment buildings. In the case of rural housing, efforts are being made to have dwellings meet the minimum sanitary requirements, such as cement floors, potable water, sanitary privies, etc.

TABLE 63

HOUSING PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Dominican Rep.	The Sanitary Engineering Service of the Public Health Section is responsible for reviewing all construction plans in the country for the following sanitary points, as required by present health legislation: ventilation of dwellings; area of dwellings; area of yards; sanitary installations; final inspection.
El Salvador	In its three years' existence, the Urban Housing Institute, with state funds, has constructed an average of 1,000 houses per year, including the "Worker" type, "Low Income" type, and some schools, markets, and "Residential" type houses, all of which were turned over to the future occupants to be paid for in monthly installments over a 20-year period. The Rural Colonization Institute in the past two years has built three schools, 3 civic centers, and 120 houses for rural dwellers. During 1953, some 500 permits were granted for the construction of privately-owned houses in the capital city and another 500 for constructions in other principal cities. These constructions ranged from the smallest dwellings to commercial buildings with several stories. No statistics are available on houses for rural dwellers built by private enterprise during 1953.
Haiti	Construction of housing developments for workers in Port-au-Prince and Gonaïves.
Mexico	The most complete housing survey was made in Mexico City in 1952, with the dwellings classified as follows: huts 13%; cabins 10%; worker type 21%, decadent 21%. The hut and cabin type dwellings are considered to require over-all improvement and the worker and decadent type to need partial improvement. The 1940 census figures on dwellings in the country showed that 45% are huts, cabins, or shanties, and that 72% lack water service.
Panama	Included in the general plan of activities of the health units. The Public Health Department is collaborating with the Ministry of Agriculture and the Institute for Economic Development in a plan for improving housing. This plan will also include rural housing.
Peru	The housing shortage is felt strongly in all capitals because of the influx of country dwellers into the main cities. This has given rise to a problem of unhealthful neighborhoods which the Government is now endeavoring to correct. The National Housing Corporation and the Public Health Ministry, through the National Health and Welfare Fund, have begun the large-scale construction of Neighborhood Units, or low-cost housing developments, to alleviate the serious health problem resulting from the growth of these unhealthful districts in the suburbs of the capitals.
United States	The Public Health Service is concerned with the environmental effects of shelter on communicable disease, or chronic disease, on safety, and on mental health. Studies of design, structure, lighting, heating, ventilation, and sanitation of housing, undertaken by more than 50 universities and privately endowed institutions, help in the attack on these problems. It is estimated that approximately 100 health departments have programs concerned primarily with the hygiene of housing. There are also demonstration programs in home accident prevention carried on by eight state health departments and four local health departments on a cooperative, private, federal, state, and local basis.
Uruguay	In the period 1950-1953 the National Institute for Low-Cost Housing constructed 811 dwellings and completed several studies and

TABLE 63

HOUSING PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Uruguay (Cont.)	experiments designed to lower the cost of the constructions. On an experimental basis it built 200 prefabricated houses. The Institute has also been seeking how to help the rural laborer and his family to build their dwellings themselves.
	. . . . .
Alaska	Assistance is rendered to housing authorities by a review of plans for individual Federal Housing Authority (FHA) financed homes. Housing sanitation, in general, is handled through routine health department activities such as handling of nuisance complaints. Juneau has started what appears to be a good program by achieving rehabilitation of houses that can be rehabilitated and condemning those that cannot.
Bahama Islands	There are no general housing projects, but conditions indicate some improvement in the general situation.
Barbados	The local government is supporting a housing scheme.
Bermuda	During 1953, 296 residences were built and 40 more received additions. Of the new buildings, 197 are for the owner's occupation and 99 are for rent or speculation. Since January 1946, no fewer than 1,775 houses or apartments have been built and the number of additions, conversions and reconversions is about 150.
British Guiana	During 1953, there was a marked advance in the erection of dwelling houses on sanitary lines in the villages, suburban areas near to the city of Georgetown, and outlying settlements on sugar estates.
British Honduras	Slum clearance schemes are now under way in Belize.
French Guiana	A commission has been set up to study the housing problem in French Guiana.
Guadeloupe	Guadeloupe has a city planning expert (as is the case in each French Department), an architect with a government diploma, who acts as the State Representative and Technical Advisor to the Prefect. His function is to ensure that the future development of cities and communities will proceed according to a rational plan. All projects for the construction of dwellings, of buildings for use in the production or sale of foodstuffs, etc., are subject to control by this officer, who, through the Director of Health, sends notification of the requirements as regards sanitation of dwellings and the correction of noxious conditions. The crude dwellings used in Guadeloupe, mounted on stone pillars, are considered "goods and chattels," and escape practically any control. The efforts of certain agricultural industrial companies to provide their rural workers with good housing are noteworthy.
Hawaii	The program of the Bureau of Housing in 1953 placed emphasis on new construction and maintaining contact with recent trends in the improvement of existing housing. Its activities included the following: urban redevelopment; review of plans for major subdivisions, public housing, hotels, apartments, hospitals, schools and public buildings; review of plans for building permit applications; plantation housing. During 1953, a total of 12,178 building permits was approved in the Territory of Hawaii. By island, they were as follows: Oahu - 8,369, Hawaii - 1,401, Maui - 2,259 and Kauai - 149.

TABLE 63

HOUSING PROGRAMS IN THE AMERICAS (Continued)

Area	Status of program
Jamaica	There are about 325,000 dwellings throughout the Island, of which it is said that 46% are rated to be in bad condition due in large measure to poor construction, inadequate maintenance, and the ravages of termites; a fair proportion is considered unfit for human habitation. It was estimated that some 50,000 cottages had been swept away in the 1951 hurricane. Four organizations--Central Housing authority, Hurricane Housing Organization, the Sugar Welfare Board, and the Lands and Agricultural Departments—share the responsibility for organizing housing schemes.
Leeward Islands Antigua	An active program of slum clearance is maintained by the Central Housing and Planning Authority. Many "self-help" and "aided self-help" houses were built, in addition to slum clearance. New houses are built of timber or concrete. It is hoped to eliminate the few remaining poorly built houses.
Leeward Islands Montserrat	There is an aided self-help housing scheme.
Leeward Islands St. Kitts	The head of the Health Department is a member of the Central Housing and Planning Authority, and this fact ensures that health considerations enter into the provision of new housing, in which there has been considerable progress during the past four years.
Martinique	Gradual progress is being made as regards housing conditions. More concentrated efforts must still be made, as the problem is aggravated by overpopulated conditions on the Island.
Puerto Rico	Under the housing sanitation program being carried out by the public health units, through the Health Department, inspection is made of deficient housing that is in violation of the sanitary regulations. In addition, a program for slum clearance and the construction of low-cost dwellings is being carried out jointly by the Housing Authorities and the Planning Board, with which the Department of Health works in close collaboration.
Surinam	An increasing number of new houses are being constructed in the suburbs. Several new sections are being added to the capital since 1950. Many slum dwellings are being cleared and replaced with larger and better houses. The Government has built numerous workers' houses. The aided self-help building project in Surinam started in 1952 and serves as a model for neighboring countries. A great advance in the tendency to erect concrete instead of wood buildings. The bauxite plants build houses of a good standard. In the remaining rural areas the houses are of primitive construction.
Trinidad and Tobago	The type of structure of business and dwelling houses has improved. Estate barracks were demolished.
Virgin Islands (U. S.)	The Virgin Islands has a housing authority which the health department assists by furnishing useful data upon request. Housing sanitation is handled through routine inspection of premises; nuisance complaints are investigated by the Department of Health.
Windward Islands Dominica	The Central Housing and Planning Authority is in charge of these activities.
Windward Islands St. Lucia	Housing is controlled by the Central Housing Authority.
Windward Islands St. Vincent	The Central Housing and Planning Authority acts under Ordinances Nos. 1 and 2 of 1946 in specified areas; the Sanitary Authority acts in all other areas.