



*Quadrennial report*

**OF THE DIRECTOR**

**1958-1961**



**PAN AMERICAN HEALTH ORGANIZATION**  
Pan American Sanitary Bureau - Regional Office of the  
**WORLD HEALTH ORGANIZATION**

**INDEXED**

**QUADRENNIAL REPORT OF THE DIRECTOR**

**of the**

**PAN AMERICAN SANITARY BUREAU  
REGIONAL OFFICE FOR THE AMERICAS**

**of the**

**WORLD HEALTH ORGANIZATION**

**1958-1961**

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1501 New Hampshire Ave., N.W.  
Washington 6, D. C.**

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To the  
States Members  
of the  
Pan American Health Organization

I have the honor to transmit herewith the Quadrennial Report on the work of the Pan American Sanitary Bureau, Regional Office for the Americas of the World Health Organization, for the years 1958-1961. This Report summarizes the activities at Headquarters and in the countries; greater detail is presented in the Annual Report for 1961, which is submitted separately, and in the Annual Reports for the first three years of the quadrennium.

Respectfully,

A handwritten signature in cursive script, appearing to read "A. Horwitz", with a horizontal line underneath.

Abraham Horwitz  
Director

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## ABBREVIATIONS

AID (ICA)	Agency for International Development
APHA	American Public Health Association
CINVA	Inter-American Housing and Planning Center
FAO	Food and Agriculture Organization
IADB	Inter-American Development Bank
ICN	International Council of Nurses
INCAP	Institute of Nutrition of Central America and Panama
MEIC	Medical Education Information Center
NIH	National Institutes of Health
OAS	Organization of American States
PAHO	Pan American Health Organization
PASB	Pan American Sanitary Bureau
PAU	Pan American Union
PAZC	Pan American Zoonoses Center
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund
UNTAB	United Nations Technical Assistance Board
USPHS	U. S. Public Health Service
WHO	World Health Organization
WHO/TA	World Health Organization/Technical Assistance



# **PART I**

*Charter of Punta del Este*

[HEALTH OBJECTIVES FOR THE DECADE OF THE 1960's]

*To increase life expectancy at birth by a minimum of five years, and to increase the ability to learn and produce, by improving individual and public health. To attain this goal it will be necessary, among other measures:*

*to provide adequate potable water supply and sewage disposal to not less than 70 per cent of the urban and 50 per cent of the rural population;*

*to reduce the present mortality rate of children less than five years of age by at least one-half;*

*to control the more serious communicable diseases, according to their importance as a cause of sickness, disability, and death;*

*to eradicate those illnesses, especially malaria, for which effective techniques are known;*

*to improve nutrition;*

*to train medical and health personnel to meet at least minimum requirements;*

*to improve basic health services at national and local levels; and*

*to intensify scientific research and apply its results more fully and effectively to the prevention and cure of illness.*

## GENERAL VIEW OF THE PERIOD AND FUTURE PROSPECTS

**WITHOUT DOCTRINE, PRINCIPLES, AND METHODS** no organization can be efficient. An institution's doctrine expresses its *raison d'être*, its ultimate goal, its principles of action; it is the motivating force of everything that is accomplished or contemplated, the framework of its ideas and efforts, the spirit that animates and governs its activities; it is expressed in tenets and principles, and these in turn in policies, guidelines, and methods, each of which reveals the essential purpose of the institution.

On such foundations is an organization built, and its growth is fostered by sound intentions and experience. The more dynamic and diversified its objectives, the greater the responsibility of its sponsors to keep abreast of new knowledge and be alert to the conditions that cause problems to arise, so that they can perfect policies or incorporate those that are justified by needs.

The doctrine of the Pan American Health Organization and of the World Health Organization is charted in the Constitution. Their aims are the prolongation of life, the prevention of disease, and the promotion of health. Those aims are embodied in the advisory services they extend to the Governments, and the fields in which they are given—individual and collective medicine—are services provided by the Governments for the common good.

Although health problems do not change their nature with the passage of time, they appear in different guises in different societies and environments. What has changed is the theory of their origin and their implications, the methods of identifying them and, with the growth of knowledge and experience, of solving them. Because the factors that determine health and disease are essentially biological and social, they reflect the social life and cultural values of a given society, the importance it attributes to them, and the resources it possesses. That is why in every age the marshalling of measures to prevent or cure diseases—health policy—reveals its theory of disease and the importance it attaches to health as a social function. Evident at all times have been the complexity of the process and, in order to understand its deepest implica-

tions, the necessity of reckoning with the many factors in play.

In the Americas, overriding emphasis has been laid in recent years on the necessity of harmonizing development and welfare, needs with resources, economic growth with social progress. In the definition of the Economic Commission for Latin America: "The problem of economic development is essentially that of rapidly assimilating the vast resources of modern technology in order to raise the living standards of the broad masses. Considerable difficulties stand in the way of solving this problem, both because of the magnitude of the process of transferring technology and because of the special circumstances in which the problem arises."<sup>1</sup> Equally important is a substantial change of attitude on the part of those who participate in and benefit from development. If indifference or pessimism prevails, it will be difficult, if not impossible, to stimulate production and redistribute the national income more equitably, even though all the necessary technical and financial resources are available. Because it is impossible today to conceive of an economic system without humanitarian purposes, one which is not aimed at improving the living conditions of the people and creating in them a feeling of responsibility and participation, a sense of national purpose. That social progress stimulates and is stimulated by economic growth is now an accepted tenet in the Americas, which are seeking to translate it into practice. The dominant policy, both nationally and internationally, is to accelerate development and to abolish the enormous disparities in the distribution of income, in order to raise standards of living. Those are but two phases of a single process which should be brought about simultaneously, step by step.

Colm and Geiger view development as a social process that produces results which can be described and measured in economic terms. In Asia, Africa, and Latin America, development requires social and cultural change as well as economic growth; that is to say, qualitative transformations must occur concurrently with quantitative increases. There is, in fact, a reciprocal relation between the two, and neither process is likely to continue

<sup>1</sup> E/CN.12/582/Rev.1 (Eng.), p. 1.

for long or go very far without the other. Hence, "development means change plus growth."<sup>1</sup>

It cannot be stated that in Latin America today an increase in the national product brings with it an automatic increase in per-capita real income and, consequently, increased well-being. For a number of reasons, that phenomenon has not been demonstrated in this century. The rate of development—where development has occurred—has not been sufficient to meet the basic needs of a population that has grown more rapidly. Economic policy has not had the vigor and consistency that the pressure of problems and the anxieties of human beings demanded. Oversimplified formulas that merely call for the distribution of existing wealth among a larger number of persons and ignore the need to increase production and the rate of investment have no place today in Latin America, where countries are gaining an increasingly clearer insight into the ways of achieving progress and well-being.

The responsibility for the attainment of this goal rests principally with those who have had an opportunity of acquiring knowledge and experience and who are aware of the momentum of change in their countries and in the Hemisphere. Whether in government, the universities, or in public or private institutions, they are the ones who must create a strong public opinion that will guide efforts toward definite objectives—the establishment of a broadly-based economy, the improvement of living conditions, and increased opportunities for physical or intellectual employment as varied as each country's progress requires.

International organizations, and especially agencies like the World Health Organization and the Pan American Health Organization that were established by Governments to work for the common good, have a similar responsibility. The application of the precepts that govern them to this phase of the Continent's development and to the factors that determine existing social and health problems, according to the pace of the development process, explains the active part played by the Organization at the meetings of the so-called "Committee of Twenty-One," the Special Committee of the Organization of American States to Study the Formulation of New Measures for Economic Cooperation. At its second meeting in Buenos Aires in April 1959, Resolution VII was approved: "To recommend to the governments that, in programming and negotiating the financing of economic development, they include public health programs, inasmuch as they are essential to, and supplement, economic

<sup>1</sup> Colm, G. and Geiger, T. "Country Programming as a Guide to Development" (1961). In: *Development of the Emerging Countries, An Agenda for Research* 45-71 (239) Brookings Institution, Washington, D.C. (February 1962).

programs." Also, "To recommend to governments that they seek technical advice from the Pan American Sanitary Bureau for the formulation of the above-mentioned programs."<sup>2</sup>

The third meeting was held in Bogotá in September 1960. Out of that meeting was to come an historic document, the Act of Bogotá, which situates measures for social progress and development within the framework of "Operation Pan-America." Its preamble is a lucid statement of the interrelation of the interests of the American republics and the mutual dependence of economic and social problems. That is why activities must be carried out in both spheres mentioned in the document. The Organization had an active part in drawing up the section on health activities. That section calls for a re-examination of programs and policies, special regard being had to the strengthening of campaigns for the control or elimination of communicable disease, in particular malaria, and the progressive development of measures for the promotion, protection, and restoration of health.

The philosophy of the Act of Bogotá is reaffirmed and expanded in the Charter of Punta del Este, a new historic document resulting from the Special Meeting of the Inter-American Economic and Social Council at the Ministerial Level, held in Punta del Este, Uruguay, from 5 to 17 August 1961. The Charter of Punta del Este establishes the objectives of the Alliance for Progress within the framework of "Operation Pan-America."

In that document health is acknowledged as a social function and an economic investment of itself and in relation to the other components of human welfare. The objectives the Governments have committed themselves to achieve during the decade are: "To increase life expectancy at birth by a minimum of five years, and to increase the ability to learn and produce, by improving individual and public health. To attain this goal it will be necessary, among other measures, to provide adequate potable water supply and sewage disposal to not less than 70 per cent of the urban and 50 per cent of the rural population; to reduce the present mortality rate of children less than five years of age by at least one half; to control the more serious communicable diseases, according to their importance as a cause of sickness, disability, and death; to eradicate those illnesses, especially malaria, for which effective techniques are known; to improve nutrition; to train medical and health personnel to meet at least minimum requirements; to improve basic health services at national and local levels; and to intensify scientific research and apply its results more fully and effectively to the prevention and cure of illness."<sup>3</sup>

<sup>2</sup> OAS, *Council Series. C-sa-331* (Approved) 8 July 1959 (Original: Spanish).

<sup>3</sup> OAS *Official Records, OEA/Ser. H/X.II.1* (Eng.), 1961, p. 11.

The Ten-Year Public Health Program of the Alliance for Progress, Resolution A.2, of the Charter of Punta del Este, sets forth the measures the Governments are recommended to adopt in order to achieve those goals. In doctrine, it reaffirms the reciprocal relationship between health, economic development, living standards and well-being, and consequently the need to foster economic development simultaneously with social progress. It draws a distinction between long-term methods and those that produce immediate results, in the sense that they represent the continuation and expansion of all activities that are being directed at the solution of urgent problems.

There is now general agreement on the need for each country to prepare a national health plan for the next decade as a long-range measure that will ensure the orderly development of activities for the protection, promotion, and restoration of health. A health plan is a method, a tool, and not an end in itself; it is a dynamic process which must be simple in its beginnings and which must be improved as time goes on by making successive evaluations of the results in relation to the precise objectives in view. The plan should indicate the direction to be followed, that is, policy, rather than overelaborate formulas that are divorced from reality in their disregard for existing resources, economic possibilities, and the administrative experience of the country. It should contain a straightforward presentation of the problems and their priorities, the goals to be attained within a given period of time, the available resources and their mobilization, the cost of the whole undertaking, and the methods of financing.

The formulation of a national health plan is a complex task, particularly in countries where vital statistics are very incomplete. Nevertheless, imperfections in that regard should not be a deterrent. There will always be ways of estimating or projecting the available data, no matter how inadequate, so as to establish definite objectives for a certain period of time. The preparation of such a health plan is an educational process which will benefit all public health officials. The work follows a specific orientation along lines that lead to significant achievement.

"More specifically, planning seeks directly or indirectly to influence those factors believed to determine the rate and direction of development. Hence, every development plan either consciously or unconsciously implies some particular theory of development and some notion of the specific ways in which the factors considered relevant can be stimulated to produce their effects. Development planning is, explicitly or implicitly, a strategy for development."<sup>1</sup>

When the health plan for the country has been pre-

<sup>1</sup> Colm and Geiger, *op. cit.*

pared and specific priorities are determined, their incorporation into the different programs for economic development and social welfare will have to be effected. Obviously, large-scale undertakings, whether private or governmental, have not always considered health functions indispensable. In the mobilization of domestic resources, the relationship between the prevention and cure of diseases and the labor force is obvious. That explains why the Ten-Year Public Health Program of the Alliance for Progress includes the following recommendations: "To adopt legal and institutional measures to ensure compliance with the principles and standards of individual and collective medicine for the execution of projects of industrialization, urbanization, housing, rural development, education, tourism, and others."<sup>2</sup> At a later date, after special studies are made, it will be possible to prepare, by region, sector programs that consider the most widespread economic and social problems and the way to solve them through balanced development.

The first need is to formulate health plans, programs, and projects in accordance with the characteristics of each country and possibilities for financing. To that end, the Charter of Punta del Este suggests, among other measures, the establishment within the health ministries of planning and evaluation units; these would have proper representation in the national development agencies, so as to ensure the necessary coordination. However, there is a shortage of experts in the field of health planning, and measures to remedy that situation must be urgently considered by the Governments, universities, and international organizations. Under the auspices of the Latin American Institute of Development Planning and the Pan American Health Organization, the first course for the training of such experts will be inaugurated in 1962. Plans have been made to train one hundred experts in the next five years for Latin American countries.

A committee of experts has made recommendations on health planning which the Organization will put into practice. The Center for Development Studies of the University of Caracas has undertaken, in collaboration with the Pan American Sanitary Bureau, the preparation of a detailed guide for the formulation of national or regional health programs. All these efforts will obviously benefit from the activities of Governments and the universities of each country, both for the training of experts and for the periodic review of plans and their improvement.

From another standpoint, health plans will permit Governments to determine the areas where the collaboration of international organizations is needed. They may need advisory services on specific problems or opportunities for the training and improvement of the professional and auxiliary personnel that are indispensable

<sup>2</sup> OAS Official Records, OEA/Ser. H/X.II.1 (Eng.), 1961, p. 31.

for the achievement of the proposed objectives. Thus health plans will make it easier for international agencies to implement their policy of coordinating activities and making more productive use of available resources.

What is proposed is the logical way of harmonizing resources and their growth with needs and their extent. This in no way implies the undervaluing of what has been accomplished and of what is being done. On the contrary, if the plan is to meet with success, it must be based on past experience and profit from past mistakes so as to promote greater progress. As stated before, a health plan is a means but not an end. This explains why the Charter of Punta del Este contained the recommendation that Governments complete the projects under way, particularly those related most directly to development. They are certain to be included in a long-term plan as social priorities. The Charter makes special mention of the control or eradication of communicable diseases, sanitation, nutrition, medical care, maternal and child health, and health education. Activities in these fields have already been of benefit to the people of the Americas and continue to benefit an increasing number of them, and therein lies their greatest justification. To proceed with them is to make the past a prelude to the future, both at the national and at the international level. The purpose of this Report is to describe what the Pan American Health Organization and the World Health Organization have done in the service of the Governments in the past four years.

The period under review is characterized by certain general facts. The principles that govern the Organization were adapted to the current circumstances in the Americas and the need to incorporate health methods and concepts into programs of development and social progress was emphasized. The Governing Bodies of the Organization expressed their approval of this policy in several resolutions and promoted its application in the programs conducted with the assistance of the Organization. Great progress has been made in the Pan American Sanitary Bureau's traditional task—the control or eradication of communicable diseases, according to the nature of each disease, experience acquired as to the most effective techniques, the wishes of the Governments, and the existing resources. Malaria eradication stands out among these diseases, for in the period under review it has become a world-wide undertaking.

Substantial progress was made in the control of all the common infectious diseases in the Americas, as is shown in the summary of the statistics appearing in the Report.

Comparable progress is also evident in what have become known as the tools that public health uses in the control of diseases: the organization and administration

of services, the education and training of personnel, planning, and research.

The Organization has provided advisory services at the national or local level, or both, to most of the countries of the Hemisphere on problems relating to the organization and administration of health services, the formulation of general and specific programs, in-service training of personnel, and the revision of health legislation. Increased activities in medical care, nutrition, statistics, mental health, and radiation protection, to mention but a few, have constituted a fundamental part of this effort.

The importance of training the professional and auxiliary personnel necessary to allow health services to discharge their social function was recognized. Even though the funds allotted to those activities steadily increased, they still fell short of the real needs of the countries. Two expert committees defined the problem and the role that the Organization can play in the successive stages of its solution. The Governing Bodies have suggested that the large sums of money the plan calls for should be obtained from extrabudgetary funds, if possible in the form of voluntary contributions. In any event, as the Report reveals, advisory services to professional schools, assistance with the training of auxiliaries, and the award of fellowships for the training of specialists have yielded positive results.

The need to formulate health plans has come to the fore in recent years. Reference has already been made to the decisions of the Governments of the Americas in that connection, and to the steps the Organization is taking to help them incorporate health in the economic growth process.

The investigation of medico-social problems connected with the major diseases prevailing in the Hemisphere also assumed great importance. Steps were taken to formulate a long-term program for which, in view of its value, it is hoped to obtain financing.

**THE FOLLOWING PAGES** deal with the most important activities carried out during the period 1958-1961. As they are related to the most important problems in the Hemisphere, they form part of the general program of work of the Organization as established by the Governing Bodies. An attempt has been made to bring out the reality of the situation and, wherever possible, to express achievements in figures. In reading the Report, it should be borne in mind that, because the functions of the Organization are primarily advisory, the results obtained cannot always be expressed numerically. Sometimes, experience—the results obtained under similar circumstances in the past—is the only measure of a given

activity. Fellowships for the education and training of health workers are a good example. Today no one can doubt the benefits this method of international cooperation has brought to the Americas in the past thirty years. Progress in public health largely depends on the number and caliber of the technicians trained. Although it is not possible to assess the end results of the fellowship program while it is in operation, the returns received from it to date are the best justification for expanding it.

The general situation in the Hemisphere justifies the policy pursued by all the Governments, namely that of not concentrating on the solution of a limited number of problems, but on the contrary of simultaneously carrying out activities for the protection, promotion, and restoration of health. There is no doubt that, even in the absence of general plans, the largest investments have been devoted to the problems most clearly meriting priority. But neither is there any doubt that soundly formulated plans will secure, to the extent the Governments so decide, the better application of resources to problems of major economic and social significance. In any event, successes have been and are being achieved in the Americas.

The solid foundations on which to build for greater progress have been laid. Bearing witness to this are the health workers who have acquired experience and improved their knowledge in the university, and who are the most valuable assets of that public service which is individual and collective medicine. In addition there are the other professionals and related auxiliary workers who are indispensable for a task so complex because of its diversity that it can only be accomplished through concerted action animated by common ideals. Because it mirrors this process, the sixty years of continuous life of the Pan American Health Organization must be singled out, as must be the harmonious relations that have been maintained with the World Health Organization since its creation. Mention must also be made of the work of other international organizations, and of the many public, private, bilateral, and multilateral agencies. Much remains to be done, yet the morbidity and mortality rates for common diseases, the increase in life expectancy in this century, and the quality and quantity of the resources available are evidence that much has already been accomplished. There is thus every reason to believe that, provided development is accelerated, present conditions are propitious to the attainment, within this decade, of all or most of the health objectives of the Charter of Punta del Este.

IN ACCORDANCE WITH the instructions of the Governments, the Organization is providing assistance in the eradication of malaria, smallpox, yaws, and urban yellow

fever. For all of these, there is a well-trying and tested method of eliminating the disease or, in the case of the last mentioned, the vector. Where they are prevalent, they are an important health problem which is of concern to public opinion, both national and international. To the extent that they have a major effect on human resources, these diseases directly or indirectly influence production and the national economy. Yet the cost of eradication is far less than the real or potential income it creates or the loss of revenue the diseases entail. Finally, all the Governments are agreed upon eradication, and that is the reason why the international organizations they have formed, and private organizations as well, are engaged in this struggle.

To the elimination of a disease Nature offers her counter challenge, which is reinforced by the human failings that appear when great undertakings are organized. On occasion, insect species become resistant to the elements man uses to eliminate them or to reduce their baneful activity. No little part is played in this struggle by the lack of interest and the complacency of those who impede eradication by not making use of known preventive methods. And so it is with those officials who fail to apply meticulously long-established and proven procedures. Interfering in the appointment of qualified technicians for the various phases of the campaign and in its financing are other negative factors. Nevertheless, in the Americas the balance is positive; and it may safely be said that, as far as the elimination of the above-mentioned diseases is concerned, far more has been achieved than remains to be done.

At the end of 1961, all the countries of the Americas in which **malaria** is prevalent had an active program under way. Eradication has been shown to be technically feasible; success hinges on completion of the programs planned and, at the same time, elucidation of the causes of residual foci of transmission in certain countries.

By mid-1961 the disease had been eliminated in areas inhabited by 5,156,000 persons, whereas in 1958 only 3,835,000 enjoyed the benefits of eradication. The areas in the consolidation phase in 1961 had a population of 17,665,000; in 1958 it was only 1,157,000. During the quadrennium, as the attack phase was completed, the population in areas under attack fell from 44,634,000 in 1958 to 38,700,000 in 1961.

The progress achieved becomes clear on examining the data on spraying and on evaluation operations, including both active and passive case-finding. The number of recorded cases naturally varies from country to country, depending on the vigor with which case-detection is pursued and on laboratory confirmation. An apparent increase in prevalence is normally recorded in the early stages of evaluation operations, especially when they are

begun during the attack phase. Yet the fact of the matter is that persons suffering from malaria are being observed less and less frequently in the large urban centers of the Continent and only exceptionally in the capital cities.

The fact that it has been possible to pinpoint the problems that impede eradication exemplified the progress made. The foci of vector resistance to insecticides—DDT, dieldrin, or both—have been much more accurately delimited. Exceptionally, cases of resistance of the malaria parasites to 4-aminoquinolines have also been recorded, but those findings have only led to an intensification of epidemiological studies aimed at discovering why malaria transmission persists in the face of the operations that have been carried out. All this opens up a vast field of research. In addition to the problems mentioned, there are those of changes in the behavior of anophelines, extradomestic transmission, genetic variations in susceptibility to toxic substances, and the existence of asymptomatic carriers. The role played by nomads, migrant workers, and inaccessible groups must also be explored. These are only some of the problems that require major studies, but of these the problem of vector resistance to insecticides is clearly of the most immediate practical importance. However, it must be emphasized that, by and large, these problems are encountered only in limited foci; the program must therefore be continued until eradication is achieved, for not only will it benefit more than eighty million human beings, but it will also open up vast tracts of fertile lands to agriculture. Meanwhile research will, we are confident, solve those problems and provide us with methods which will make it possible in due course to eliminate the residual foci of malaria in the Hemisphere.

All the conditions are present for each phase of the program to be carried to completion. The training of professional and auxiliary workers has been intensified, the necessary meetings to enable national and international experts to compare results and exchange experiences have been held and, most important of all, the Governments are resolved that the undertaking shall succeed. This undertaking has not only the support of the Organization, but also the harmonious cooperation of other national and international agencies, among them the International Development Association, through its large financial and technical contribution, and the United Nations Children's Fund, with its indispensable contribution of supplies and equipment. Although administrative difficulties have arisen in some countries, they will, we trust, soon be satisfactorily solved, so that progress may continue unhindered.

Between 1954 and 1957, ten countries of the Continent reported a total of 32,936 cases of **smallpox**. In the period under review—1958-1961—the Organiza-

tion received reports of 16,187 cases from nine countries. The highest annual number of cases in the four-year period was 5,158 in 1960, owing to an epidemic in one country; in 1961 only 1,923 cases were reported.

Smallpox can be eradicated in the Americas. The countries in which the disease is still prevalent are producing a sufficient quantity of both dried and glycerinated vaccines, and have the experience needed to organize smallpox eradication programs. Perhaps the problem is one of funds, especially for personnel and transport, but that fact should not interfere with the repeated resolutions of the Governing Bodies of the Organization recommending the acceleration of efforts to eliminate this pestilence from the Continent.

The criteria for smallpox eradication approved by the XIII Meeting of the Directing Council of the Pan American Health Organization, in 1961, state that "it is generally accepted that the correct vaccination of 80 per cent of each of the sectors of the population, within not more than five years, will result in the disappearance of smallpox." A glance at the number of vaccinations given in the Americas in the period 1958-1961—Table 14 of the Report<sup>1</sup>—shows that the level of immunity in the countries is far below the necessary minimum. Until such time as the disease is eradicated, it is essential to maintain suitable levels of immunity in the population so as to avert epidemics which, because of the rapidity of modern means of communication, may be spread from other countries of the world.

As in the past, the Organization is complying with the directions of its Governing Bodies. It has given assistance in the production of vaccine, in the training of technicians, in the provision of essential supplies, and in the organization of eradication programs. And it has taken the necessary steps to continue this undertaking until the disease is eliminated from the Continent.

The XV Pan American Sanitary Conference in 1958 declared *Aedes aegypti* to be eliminated in eleven countries and other political units. By the end of 1961, the vector had been formally declared eradicated in sixteen countries and several territories.

Wherever the vector of urban yellow fever is found, the Governments are conducting eradication programs of varying degrees of intensity. These programs will, it is hoped, be accelerated as much as possible, not only because it has been the general desire since 1947 to reach the objective of eradication, but because foci of vector resistance to insecticides have appeared in the Caribbean region.

The Pan American Sanitary Bureau has continued to discharge its function as coordinator of these programs and to provide the Governments with advisory services in accordance with established policy. Joint efforts will, it

<sup>1</sup> See page 51.



is hoped, make it possible to eradicate *Aedes aegypti* from the Continent by 1967.

The Oswaldo Cruz Institute of Rio de Janeiro and the Carlos J. Finlay Institute of Bogotá continued to produce sufficient amounts of 17D virus vaccine to meet the needs of the countries. A study on the duration of immunity showed that neutralizing antibodies were present in 97.1 per cent of 108 vaccinees seventeen years after vaccination. Although the sample studied was small, the finding is significant.

In the countries in which the Organization collaborated in yaws eradication programs, substantial progress was made. In Haiti infectious forms decreased, per 100,000 persons, from 100 in 1959 to 1.3 in 1961. It is now evident that diagnostic methods that differentiate tropical ulcers from those produced by *Treponema pertenue* need to be refined.

In the Dominican Republic the prevalence, per 100,000 persons examined, fell from 200 in 1958 to 30 in 1961. Similar findings are reported from various Caribbean islands. An evaluation of this program has therefore become necessary and will be made in the countries mentioned, as well as in others whose Governments have obtained similar results, with or without international assistance, in 1962.

**THE ORGANIZATION ADVISES** Governments in the control of a group of communicable diseases frequently found in the Americas; some of the diseases are common to all the countries while others are not. For biological and economic reasons and because research has yet to yield effective methods for eradicating those diseases, it has been agreed to carry out only control programs, intended to reduce as much as possible the risk of illness and death. A few general comments that complement the information contained in the Report follow.

The work of the Pan American Sanitary Bureau in trials of live attenuated **poliovirus** vaccines has been significant. Two international conferences—in 1959 and 1960—were sponsored by the Pan American Health Organization and the World Health Organization, and assisted by the Sister Elizabeth Kenny Foundation. They made it possible for outstanding research workers from many countries of the world to exchange experiences and examine biological, immunological, and epidemiological problems connected with the disease, to present their assessment of the value of live attenuated poliovirus vaccines, and to reach conclusions that stimulated field trials of benefit to tens of millions of persons.

Our Organization was able to collaborate on immunization studies covering about one million children in Latin America.

The importance of the two above-mentioned confer-

ences is shown by the wide notice they received and the interest they aroused in these immunizations. In accordance with established policy, it is for Governments to decide in due course on the type of vaccine they wish to use for poliomyelitis control. It is clear that methods guaranteeing immunization are now available, and that reduced cost justifies large-scale production. Nevertheless, there are still some unknown factors in the pathogeny and epidemiology of this disease.

**Tuberculosis** is one of the main causes of death in certain countries in the Continent. A marked decline in mortality occurred between 1945 and 1955. However, the rate of decline has fallen off in recent years. As Frost said in 1937, "the balance is against the survival of the tuberculosis bacillus,"<sup>1</sup> and its disappearance may now be accelerated by using the new drugs available for the effective treatment of patients and the protection of contacts. For that reason, control activities should be included in the general health plan of a country whenever the disease is a major problem. The Directing Council of the Pan American Health Organization at its XIII Meeting examined the financial outlay that would be required for a continental plan to combat tuberculosis, prepared by the Pan American Sanitary Bureau. It is proposed to trace and to treat at least half of the unknown active cases, or approximately 900,000 cases, and to extend case-finding to the goal of five cases per death per year. The cost estimate is based on the discovery and treatment of 1,900,000 active cases in the decade. The data compiled by the Bureau, excluding data from several large countries, which were lacking, show that more than twenty million dollars were being spent on tuberculosis control programs in 1957.

The estimate, which includes the cost of diagnosis and treatment, of prevention (four contacts of each case), and of assistance to be provided by the Organization, totals sixty-three million dollars a year, or three times more than the amount at present being invested by the Governments.

Naturally, modern tendencies in tuberculosis control, namely, emphasis on ambulatory and domiciliary treatment and hospitalization only for those patients requiring in-patient treatment for a short period, were taken into consideration in the plan.

If the Governments decide to carry out this program, the Organization will give more of the same type of assistance it has given during the past four years. That includes assistance with the training of specialists, especially epidemiologists, to permit tuberculosis control to be incorporated into the local health services; the formulation of standards for the application of curative and preventive measures; the evaluation of programs

<sup>1</sup> Frost, W. M. "How Much Control of Tuberculosis?" *Amer J Public Health* 27:VIII, 1937, pp. 759-766.

under way; and the collection and analysis of incidence and prevalence data. The Report summarizes the growth of antituberculosis activities in the period under review. In a good number of countries the foundations have been laid for carrying out the continental program approved by the Governments.

**Leprosy** control measures have become truly humane; only those cases whose lesions make it necessary are now being segregated in leprosaria. Most leprosy cases may today be given ambulatory treatment and live in their communities side by side with their fellow men. Although there is still no very efficacious short-term therapy for the acute forms of leprosy, modern drugs, in particular the sulphones, have proved very effective in the common forms of the disease. This development has led to the expansion of control programs throughout the world. There is now a more accurate knowledge of the leprosy prevalence in the Americas. In the period 1958-1961 the Governments, with the assistance of the Organization and of the United Nations Children's Fund, intensified case-detection activities, a development that explains why there has been an increase in the number of cases in many countries. The treatment of leprosy patients and their contacts was also initiated. A series of courses on the diagnosis and epidemiology of the disease was held, and program organization was improved. These activities make it possible to state that there will be a decline in prevalence in the years to come. In the period under review, the Organization provided all the countries in which leprosy is a serious medical and social problem with long-term or short-term consultants.

The Organization devoted less attention to certain other communicable diseases because they were less prevalent. Seven countries of the Continent reported a total of 791 cases of sylvatic **plague**, two epidemic outbreaks having occurred in 1960 and 1961. Nearly all the countries were provided with advisory services for epidemiological and ecological surveys in the known foci. It is clear that studies to determine the characteristics of the disease more accurately and the possibilities of reducing its prevalence are needed.

Mention should be made of the Latin American Congress on **Chagas' disease** held in July 1959. It was organized by the Government of Brazil and the University of Rio de Janeiro, with the assistance of the World Health Organization and the Pan American Health Organization.

A Study Group designated by the Organization met in Washington in 1960. It considered the importance of Chagas' disease in public health, diagnostic procedures, survey methods, available methods of treatment, control and prevention, and recommended investigations in certain directions. The report of the Study Group, which was widely distributed, has reawakened the interest of

Governments in extending control programs. In response to requests from some countries, the Pan American Sanitary Bureau has provided advisory services and has taken the necessary steps to draw up a research program on various aspects of the disease. Regardless of the incidence of the disease, it is in any case a welfare problem which is aggravated by insanitary housing. This fact makes it more than ever necessary to find more efficient procedures for controlling the vector and lessening the risk of sickness.

The Report also touches on activities carried out in **schistosomiasis, onchocerciasis, filariasis, and hydatidosis**. Their main aim has been to determine the characteristics of these diseases in foci in some countries so as to organize or extend control programs.

Also worth mentioning is the work done in **rabies** along the United States-Mexican border, where epidemic outbreaks occurred during the period under review. Assistance was given to various countries in vaccine production and testing, strain identification, the elimination of wildlife reservoirs, and the training of personnel. Some progress was made in the notification of rabies in man and in animals, as shown in the relevant table of the Report.

**THE ORGANIZATION AND ADMINISTRATION** of services is one of the fundamental tools for preventing or treating diseases, promoting health, and prolonging life. The modern tendency is to coordinate or, preferably, to integrate all activities conducive to those aims. These activities have been increasing in proportion as life in society has become more complex and more diversified; hence the need to systematize them, in other words to organize and administer resources in order to solve those problems of public concern that have the greatest social and economic importance.

This process is occurring in the Americas, whose Governments are trying to coordinate the services for the protection, promotion, and restoration of health. To separate care of the sick from prevention of disease is an anachronism that should not be allowed to subsist, especially in countries where because the problems are vast and the means limited these means must be made to give a maximum return. It is even less justified if the natural history of diseases is considered, for it shows that the separation of prevention and cure is artificial and not found in nature. All the more reason, then, why it is essential to promote well-being by solving the problems that are most urgent and for which there are time-tested methods, efficient techniques, adequate funds, and effective organization. The characteristics of organization vary from country to country depending on the type and frequency of the problems, the quantity and quality

of the resources—especially well-trained professional and auxiliary personnel—and the administrative tradition.

The countries have now accumulated considerable experience in organizing and administering local health services. Although these services do not yet cover the whole territory, there are sufficient of them in which to demonstrate well-established procedures and to test new techniques. Coordination of health protection and health promotion activities is normal, as is the establishment of a definite system of priorities. Not so frequent is the integration of hospital, ambulatory, and domiciliary care. It is in this field that efforts must be redoubled to organize all services of the country under the aegis of an integrated administration, in which policy-making is centralized and operations are decentralized. Regardless of what local health units are called, and where they are situated, it is essential that they have the responsibility to deal with all problems, including medical care problems. It is on this conceptual basis that each country should build the organization it considers most efficient.

The Organization has been contributing to this process, especially in the last four years. Of the sixteen programs in operation at the end of 1961, only those in El Salvador, Mexico, and Uruguay were being operated exclusively at the local level. Assistance given to the Governments of ten countries covered sixty-three health centers serving a population of slightly more than three million.

Some Governments showed particular interest in reorganizing the ministries of health and their agencies and in bringing their health legislation up to date, and all of them, in the in-service training of health workers and in university studies abroad. Of the various activities undertaken by the Organization, this is one in which, because of its nature and its aims, the assistance given is more difficult to measure. Nevertheless, the very extension of organized services to new regions within a country, which has frequently happened in the last four years, is a good evidence of what has been achieved.

Once the policy of integrating curative and preventive activities is adopted, it becomes even more important to review the organization and administration of medical care services, especially hospitals, their cost and financing, and the techniques being used. Experience in some countries of the Americas shows that the efficiency of hospitals—in outpatient departments or wards—can be increased by as much as 25 per cent. Although statistics show that new institutions are needed, it seems advisable to use modern therapeutic methods to treat as many patients as possible in those already available. Tuberculosis and leprosy are pertinent examples, as are acute mental diseases. In addition to technical reasons there are financial reasons for doing so. Surveys conducted by the Organization showed that the average cost of providing

a hospital bed in the Americas today is \$8,000-\$10,000. The number of beds needed for acute and chronic cases is about one million. Figures of this magnitude make it necessary to limit new construction to what is absolutely indispensable.

It is on these facts that the policy pursued in the last four years is based. Consultants have advised Governments on the training of personnel, medical accountancy in hospitals, and the formulation of programs for new establishments. The work that remains to be done in this fundamental field is enormous. The fact that 80 per cent of the budgets of the ministries of health is devoted to medical care justifies the intention of the Organization to increase steadily its assistance to Governments in this field.

**AMONG FUNDAMENTAL HEALTH ACTIVITIES** in the Americas sanitation and nutrition hold a special place. Among other things, they both affect mortality in infants and in children under five years of age and also have a very great bearing on economic and social progress.

In the matter of **sanitation**, emphasis has been placed on the provision of water services. It is estimated that more than 110 million persons in urban and rural areas lack water services in their homes. It should also be borne in mind that in Latin America more than 50 per cent of industry is located in the capital cities or in large towns, and that water is essential for production and development. The Twelfth World Health Assembly, and the XI Meeting of the Directing Council of the Pan American Health Organization in 1959, assigned priority to the program, created a special fund for the expansion of these activities, and recognized that attention would have to be given to the financial, administrative, and legal aspects of the services if the problem was to be solved. The Act of Bogotá and the Charter of Punta del Este include sanitation among the fundamental health activities. The Charter sets as the target for the next ten years the provision of water supply and sewage disposal services to 70 per cent of the urban and 50 per cent of the rural population of Latin America. The Inter-American Development Bank, which began operations in 1961, the Export-Import Bank, the International Development Association, and the Development Loan Fund of the United States Department of State, among others, have made it their policy to grant long-term, low-interest loans for water services.

The voluntary contributions of the United States of America and of Venezuela to the Special Community Water-Supply Fund have made it possible to expand the sanitation program of the Organization, especially during

the last two years. All aspects of the problem have been carefully examined in seminars and short courses sponsored by the Organization. The training of engineers and other technicians has been fostered by means of fellowships. Consultants services both in sanitary engineering aspects and in legal and administrative aspects have enabled the Governments to recognize the magnitude of the problem, to select the areas on which to concentrate activities, to enact legislation on the organization of water agencies, to prepare requests for loans from the international capital market, to arouse community interest in the problem, and to obtain greater revenue by raising water rates. The last-mentioned development is especially material to the solution of a problem whose magnitude and financial implications used to make it virtually unapproachable. A new climate of opinion has been created in the Hemisphere and shows itself in the determination of the Governments and the desire of individuals and communities to obtain essential water services. Although enormous capital investments will be necessary, the countries are well aware that it is one of the most productive economic investments.

To illustrate the new way of thinking about the solution of these problems, the report of the President of the Inter-American Development Bank to the Third Annual Meeting of the Board of Governors held in Buenos Aires in April 1962, may be cited: "In our first fourteen months we have approved loans for projects which help meet the requirements for either water or sewerage, or both together, in the following cities: Concepción, Talcahuano, Cali, Cúcuta, Medellín, Cartagena, Quito, Puerto Barrios, Arequipa, Montevideo, San Salvador, Rio de Janeiro and six state capitals in northeastern Brazil (Salvador, Recife, Natal, Maceió, San Luis and Terezina). In addition, we have helped fill these same needs in over 500 small communities and rural districts in the following countries: Mexico, El Salvador, Guatemala, Brazil and Venezuela. In the preparation and evaluation of these projects, we have found a valuable collaborator in the Pan American Sanitary Bureau, whose technical assistance is well known to all our member countries." This report also states, "In short, we have contributed to twenty-three projects totaling US\$127 million and benefiting ten million persons in Latin America."<sup>1</sup> It should be noted that the investments the countries made in local currency amounted, on the average, to two thirds of the capital from abroad.

An agreement between the Inter-American Development Bank and the Pan American Health Organization enunciates the bases on which assistance is to be given to Governments in the formulation of projects to be submitted to the Bank, either directly or through the Pan

American Sanitary Bureau. Extremely cordial relations have been established with the Bank, and their effects will be increasingly seen in the years to come. In the past four years other international credit institutions, in particular the Export-Import Bank and the Development Loan Fund, also approved loans for the construction of new water systems and the purchase of equipment. The loans made to Colombia, Costa Rica, Ecuador, Mexico, Paraguay, and Uruguay total forty million dollars.

In some countries plans for the construction or expansion of sewage disposal systems were prepared simultaneously with those of water services, even though for reasons of cost such facilities could not always be installed at the same time. However, the Inter-American Development Bank did approve loans for some countries for the construction or expansion of both systems, in urban and in rural areas alike.

The Report also deals with activities in other fields of environmental sanitation such as food hygiene, housing, refuse disposal, and occupational health. Because of budgetary limitations the Organization has limited itself in these fields to gathering information, providing advisory services to some Governments on specific problems, and laying the foundations for larger-scale activities, for example in occupational health and housing.

The Report states that "In no other period in the history of the Pan American Health Organization has there been such a growth of environmental sanitation activities as during the four years 1958-1961".<sup>2</sup>

What has been done up to now is due to the clearly expressed desire of communities and the interest of Governments in a fundamental problem of health and development. This tendency will, it is hoped, continue in the years to come, and the doctrine that inspires it will be extended to other aspects of the prevention and cure of diseases. Both for the Pan American Health Organization and for the World Health Organization, assistance to Governments in this field is a guiding principle.

Research has shown that **malnutrition** is the immediate cause of one out of every four deaths of children under five years of age, and a contributing factor in many of the others. Lessened resistance to environmental factors explains the high mortality rates for enteric diseases and common communicable diseases. The problem is a social as well as a medical one, in that it reflects the mores of communities, their customs, traditions, beliefs and superstitions, and the elements they have available for organizing community life. Ignorance, insanitary housing, lack of water supply and sewage disposal services, infectious diseases, and other environmental factors are likewise of moment in infant mortality. If, in addition, the lack or low level of preventive and curative

<sup>1</sup> Inter-American Development Bank, AG-III/4.

<sup>2</sup> See page 37.

activities is borne in mind, it is not difficult to understand the preponderance of deaths in children under one year of age and of infants in Latin America. A study<sup>1</sup> covering eight countries shows a correlation between, on the one hand, the total number of deaths of children under one year of age and of those in the age group one to four and, on the other, four variables of development—average per capita income, daily intake of animal proteins, water supply, and illiteracy. The relationship is inverse, so that the highest mortality figures correspond to the lowest values for the above-mentioned social and economic factors. Although correlation is not synonymous with causation, these data show that a joint effort covering the most important factors will be needed if this problem is to be solved. Consequently, it will not be possible to reduce infant mortality rates to any appreciable extent merely by treating the sick or even by preventing common diseases; it will in all cases be necessary to improve nutrition and thus to improve the biological substratum so that it can respond positively to environmental stimuli. It will also be necessary to educate mothers and to provide housing equipped with the necessary services for a healthy life.

The Organization's nutrition activities were considerably increased in the period 1958-1961. They included direct advisory services provided by permanent and by short-term consultants, the training of personnel, and the organization of expanded nutrition programs. These programs have been a cooperative effort of the Governments and international organizations, including the United Nations Children's Fund, the United Nations Food and Agriculture Organization and, in some cases, the United Nations Educational, Scientific, and Cultural Organization. At the end of 1961 expanded nutrition programs were in operation in eleven countries. Their aim is to raise the nutritional level of rural families by means of educational programs linked up with programs for the production of foodstuffs in school and family gardens.

Because of its cardinal importance, attention must be drawn to research on the preparation of vegetable-protein mixtures, high in nutritive value and cheap to produce, which the Organization has fostered in recent years. The research done at the Institute of Nutrition of Central America and Panama came to fruition in the production of INCAPARINA, a preparation based on cottonseed, maize, and vitamins. It has been thoroughly tested and has been shown to have a nutritive value comparable to that of milk and to cost three or four times less for the same protein content. Commercial production began in Guatemala in 1960, in El Salvador in 1961, and by the end

<sup>1</sup>Horwitz, A.: "Recent Developments in Maternal and Child Health in the Americas," *Amer J Public Health*, 50:6, 1960 (Supplement to June—Part II).

of that year arrangements had been made to produce it commercially in another four countries of the Continent.

The amount and quality of the Institute's work in training personnel, in research, and in providing advisory services to the countries of Central America and Panama have made it one of the most outstanding centers in the world for nutrition studies.

**IN OTHER FIELDS OF HEALTH PROMOTION**, such as mental health, health education, dental hygiene, and radiation protection, the work done in the period under review is outlined in the Report. In some of these basic fields, mental health for example, policy has been spelled out and prevalent problems and existing resources have been determined. The basic philosophy of the Organization is that mental health should not concern itself solely with specific problems but with the potential productive capacity of individuals as well. Although mankind now has a much longer life expectancy than in the past, it is also exposed to greater stresses. Not only industrialization and mechanization but also changes in scales of values induced by economic and social change create new pressures, which are reflected in more homicides, more suicides, and more alcoholism. In consequence, a long-term program for incorporating mental health activities into basic health services has been framed, and a start has already been made on the program.

Radiation protection, perhaps the most recent field for international collaboration in individual and collective medicine, has received great impetus in the last four years. The Organization is cooperating with national health services to encourage them to adopt international standards for radiation protection in using X rays and handling radioisotopes and for the disposal of radioactive wastes; to promote the teaching of radiobiology and radiation protection in medical, dental, veterinary, and other professional schools; and to foster the use of radioisotopes for diagnosis, treatment, and research. For this purpose a unit was established and began work in 1960. It has already provided some Governments with advisory services in the use of X rays and radioisotopes, the training of personnel, and the organization of radiation protection services in health departments.

**THE RECOGNITION THAT** it is necessary to frame health plans in order to reach certain objectives in the decade—as laid down in the Charter of Punta del Este—has underscored the importance of vital and health statistics. In order to determine the magnitude of problems, their frequency, and their degree of priority, and to ascertain

the amount of material resources and the caliber of the manpower available for solving them, it is essential to have a system for the collection and analysis of basic data that build an authentic picture of reality. With even incomplete statistical information, it is possible to formulate a minimum program. However, it will not be possible to improve it unless arrangements are made to obtain more and more accurate data, including vital, demographic, and health statistics.

Statistical services buttress the whole medicosocial organization of a country and have a place in all its activities; accordingly, and in conformity with the decision of the Member Governments, the Organization has given statistical services due importance in the last four years. Consultants stationed in all the Zones and in certain countries have assisted in organizing statistical departments and in analyzing data that enable programs to be improved and extended. Statistics are a means, an essential tool in preventive and curative activities. Programs for the preparation or training of personnel in various branches of this discipline have been expanded.

The results of all these efforts are visible in the quality of the data compiled and published in various statistical publications of the Organization. The *Summary of Four-Year Reports on Health Conditions in the Americas—1957-1960*<sup>1</sup> is a good example, as are *Health in the Americas and the Pan American Health Organization*,<sup>2</sup> which appeared in 1960, and *Facts on Health Problems*,<sup>3</sup> which was presented at the Special Meeting of the Inter-American Economic and Social Council at the Ministerial Level held in Punta del Este in 1961.

Because of its importance, mention must be made of the study on causes of death in selected cities in ten Latin American countries. It is proposed to make a detailed study of 40,000 death certificates with a view to ascertaining the most probable cause of death and obtaining data that will make it possible to establish variations in the prevalence of common diseases. This study, which is being planned and coordinated by the Pan American Sanitary Bureau, is financed by a grant from the National Institutes of Health of the United States Public Health Service. From it will spring another series of investigations aimed at explaining the prevalence of certain diseases in the countries, in other words, studies in comparative epidemiology.

**DEVELOPMENT IN LATIN AMERICA** will be achieved if the countries prepare professionals and train auxiliaries that can make sound use of the available resources. What

<sup>1</sup> *Scientific Publication PAHO 64*, 1962.

<sup>2</sup> *Miscellaneous Publication PAHO 53*, 1960.

<sup>3</sup> *Miscellaneous Publication PAHO 63*, 1961.

this implies is a concerted movement of modern science and technology to promote well-being in proportion as the economy expands. Such an undertaking can only be tackled by those who have the knowledge, the experience, the sense of responsibility, and the concern to perfect existing methods and explore more efficient and more economical procedures. For that reason education and training are basic disciplines in development and have as their purpose the improvement of human resources, the widening of opportunities, and the better utilization of natural resources. They should be among the activities of all national and international organizations, and constitute a harmonious plan supported by the necessary funds for preparing or training the personnel needed by each profession.

In the Americas today the problem is more one of quantity than of quality. Real advances have been made in the last thirty years in the education of the various professions concerned with the prevention and treatment of diseases and the promotion of health. There is a better understanding today of the aims to be pursued in education in general and in various types of health training, education being understood as the ability to form judgments and training as the process by which skill and dexterity in an art or trade are acquired. Of course, the way in which these ideas are applied varies in different teaching institutions both within a country and abroad. A good number of these institutions—medical, engineering, and nursing schools, to cite but a few—have been recently organized, not more than ten or twenty years ago, a relatively short period of time in the complex process of personnel training. This fact has been taken into account in the policy of international assistance to improve teaching by applying the experience of outstanding persons and institutions with a similar cultural background. Much has been done along these lines, especially in recent years. Seminars and similar meetings, opportunities for refresher training for professors and their assistants, and the distribution of educational publications are some of the methods that have been employed. These make it possible to state that the objectives of education and training are better known. The problem is quantitative rather than qualitative. The World Health Organization and the Pan American Health Organization have taken an active part in this type of collaboration in the four years under consideration.

It is clear that there is a shortage of professional and auxiliary health workers in the Americas. Production has not kept pace with the growth of population;<sup>4, 5</sup>

<sup>4</sup> *Scientific Publication PAHO 64*, 1962.

<sup>5</sup> *Miscellaneous Publication PAHO 53*, 1960.

nor have the resources necessary to permit health workers to practice their professions increased proportionally. In addition, their distribution as between urban and rural areas in each country is very uneven. The proportion of professionals to population is far higher in the capital cities and in large towns than in the rural areas. In some countries there is one physician for every 1,000 inhabitants in the capital and one for every 50,000 in some rural areas. Similar disparities may be observed in the distribution of other professions as well as in the distribution of facilities.

On the other hand, the indices adopted in countries in other regions of the world are not always applicable to the Americas. What must be done, then, is to determine the number of professional and auxiliary health workers needed for specific activities, bearing in mind the prevalent problems and the policy of each Government. A study of this kind would throw light on the situation in each country, regardless of the criteria established. It would also make it possible to find out whether educational centers needed to be established or expanded, both those to provide in-service training to present officials and those to train others in the shortest possible time. To sum up, what must be done is to fulfill the commitments of the Ten-Year Public Health Program of the Alliance for Progress (Resolution A.2 of the Charter of Punta del Este).

The preparation of personnel must be adjusted to the capacity of Governments and private institutions to absorb them, which depends on their financial possibilities. As in other sectors of development, the correlation between economic growth and training must be carefully studied. In principle, it is possible to accelerate the production of technicians and of specialists in individual and collective medicine. It clearly needs to be done throughout the Region. However, it is important to plan the number of officials required, to carefully define their responsibilities, and to establish attractive salary scales. In sum, education and training is one of the basic parts of the general health plan of a country.

While the general program of education and training is being drawn up, current activities designed to improve existing institutions, to give their faculty members opportunities for refresher courses, and to train auxiliary workers must be vigorously pursued. It is an accepted fact in the Hemisphere that many health activities can only be performed, at the lowest levels, by auxiliaries and that professionals must devote themselves more and more to supervising, organizing, and directing services. In the field of nursing this approach has made considerable headway in recent years, both in medical care and in health protection and promotion. It has led to a clearer definition of the responsibilities of professional and of

auxiliary personnel and the expansion of training programs for various categories of health workers. The Report bears witness to the work of the Pan American Sanitary Bureau in this field.

It is illustrated by the award of 2,098 fellowships, 70 per cent more than in the preceding four-year period. Of these, 804 were for advanced studies leading to a specialist qualification in public health or its equivalent. Six hundred and ninety eight were for special or non-academic courses, and 596 were for travel grants to enable senior officials of health departments and professors to go abroad to visit preventive and curative services or teaching centers. In addition, the Organization was responsible for the study programs of 544 professional staff sent to the Americas from other Regions.

The medical education policy approved by the Governing Bodies lays special emphasis on preventive medicine and kindred subjects, the basic sciences, and the organization and administration of teaching institutions and clinical departments, especially those connected with major social problems—for example, pediatrics.

Even with its limited resources the Organization was able to assist certain departments in forty-eight medical schools in fifteen countries. These activities were usually carried out jointly with other international organizations and were aimed at raising the standard of medical education. The needs have become clearer during the period under review, thanks to the ideas and experiences exchanged in a series of seminars on various aspects of medical education. Collaboration between different medical schools, both within countries and in the Continent as a whole, was also fostered. The Rockefeller Foundation and the W. K. Kellogg Foundation continued to play their unique and traditional role in this field. Nevertheless, it remains clear that greater investments are needed, in particular financial aid to the most recently established among the ninety-six medical schools in the Americas at the end of 1961. It is this fact that should stamp the medical education policy of the Pan American Sanitary Bureau.

In 1958, fourteen nursing education programs were conducted with the assistance of the Organization; in 1961 their number had risen to twenty-one, and emphasis was being placed on advanced studies in the organization and supervision of services and the training of professional and auxiliary personnel. Mention has already been made of the growing number of technicians, including auxiliary nurses, being trained in integrated health programs in sixteen countries of the Americas. The experience acquired will make it possible to substantially increase the collaboration of the Pan American Sanitary Bureau at various levels of nursing education. That collaboration will supplement the increasing activities which Governments

have been carrying out in recent years and which constitute a recognition of the essential role of this profession in public health.

Advisory services continued to be furnished to all the schools of public health of the Continent. Mention should be made of the conference held in 1959 to discuss teaching methods in general, and that in 1961 to examine the teaching of biostatistics.

The education and training of engineers, sanitary inspectors, and veterinarians is dealt with in the Report.

In 1959 an expert committee met to examine the problem of training health workers in the Americas for the next ten years. It recommended that \$4,000,000 be assigned annually to improve the various disciplines. Since the Organization has spent an average of \$2,000,000 a year in direct support of education and training activities, the recommendation of the expert committee does not appear unreasonable; for the Member Governments themselves have suggested that efforts be made to obtain extrabudgetary funds to implement the plan.

**RESEARCH** in biology, medicine, and the social sciences, directly related to the most prevalent health problems, has been steadily developed by the Organization. Preference has been given to projects of truly international significance because they interest different countries of the Continent and because, on occasion, they have called for concerted efforts. This research has primarily been ecological, for example that carried out by the Institute of Nutrition of Central America and Panama to determine the interrelation of acute infections, nutritional status, and sanitation as factors conditioning infant mortality, the study on the role of Simuliidae as vectors of onchocerciasis, and the investigation of the part played by migratory birds in the spread of pathogenic viruses. In other cases the studies have been of a biological nature with a social overtone, for example the preparation of vegetable proteins with a high nutritive value, the most conspicuous example of which is INCAPARINA. Trials of new drugs for the treatment of malaria, and of residual insecticides for the control of anophelines, may also be included among these public health research programs of great practical importance. The use of live attenuated poliovirus vaccine is an example of an epidemiological study aimed at controlling a specific disease. Another research project, also an essentially biological one, must be mentioned because of its enormous importance for the agricultural economy of the Americas: the production of a live attenuated virus vaccine against foot-and-mouth disease, which has been carried out at the Pan American Foot-and-Mouth Disease Center. The search for a simpli-

fied technique for iodizing salt and preventing endemic goiter is another example of research relating to a prevalent problem. In comparative epidemiology, the frequency of atherosclerosis in various ethnic groups in several continents is worthy of notice.

It is now evident that a long-range research program coordinated by the Pan American Health Organization is needed. This plan must be built on the policy outlined above, and must constitute a single scientific operation with the research program of the World Health Organization. With this in mind, an agreement was concluded with the United States Public Health Service in 1960. As a result a grant was received in 1961, enabling this plan to be put into practice and an office for research coordination to be established in the Pan American Sanitary Bureau. Medical and social problems characteristic of the Americas will be given priority in this project, as will other problems which, although they affect different regions of the world, are characteristic of the American Continent and are thus of importance for comparative studies. Other criteria for the selection of the research projects to be carried out are that the problems affect various countries, are of frequent occurrence and of social and economic importance, and that the anticipated results may be related to practical measures for solving the problems. This does not imply any lower regard for basic research; on the contrary, the application of its results to human beings and communities is a fundamental responsibility of the Organization.

While this long-range plan is being formulated, the submission of specific projects in line with the policy already enunciated has been encouraged. The first two projects for which a grant has been obtained from the National Institutes of Health are worth mentioning: they are a study on the economic impact of malaria eradication in various countries in the Americas, which will be made by the School of Public Health of the University of Michigan, with the collaboration of the Pan American Sanitary Bureau; and the study, mentioned earlier, of causes of death in ten large cities in the Americas, which will be coordinated by the Bureau.

It is the complexities of nature that stimulate and at the same time limit human knowledge, and make man's search for truth so difficult. Scientific research is but humanism in its purest form; it is not possible to conceive of research that is not exclusively aimed at the good of humanity.

**THE REPORT DESCRIBES** changes in the structure and administration of the Pan American Sanitary Bureau during the four years under review. Efforts have been



made to rationalize procedures so as to make them more effective, less expensive, and more closely related to the general and specific objectives of the Organization. Administration is a fundamental tool, not an end; it must be as dynamic as is required by the objectives and work methods of each institution.

An account is given of the evolution of the budget during the period under review—which testifies to the understanding and interest of the Governments in the destiny of the Organization—and of increases in the number of staff and the distribution of personnel among the various units, special emphasis being placed on their assignment to where problems exist, projects are being carried out, and the Governments wish to have them; as well as of other important administrative functions, for example supplies. The work being done with regard to the new headquarters building for the Pan American Health Organization deserves special attention. During the period under review a site was obtained, thanks to the generous contribution of the Government of the United States of America. An open competition for the design of the building was held, and funds for construction were secured. As stated in the Report, the W. K. Kellogg Foundation has awarded the Organization an original loan of \$3,750,000 that is to be repaid over a period of twenty years in health programs, an arrangement which explains the expressions of gratitude of the Directing Council at its XIII Meeting in October 1961. This gesture of the Kellogg Foundation exemplifies the exalted ideals that guide it for the good of the peoples of the Americas.

**TO SUM UP, IN THE FOUR-YEAR PERIOD 1958-1961** the Organization has taken the necessary steps to make health a basic component of development and, in doing so, has interpreted the doctrine that governs it in the light of the social evolution of the Continent. At the same time it has expanded its traditional activities and has initiated or extended them in other fields where justified by the circumstances of each country. The results of these concerted endeavors, which are the endeavors of the Governments themselves, will surely be reflected in the reports to be presented at the XVI Pan American Sanitary Conference on the advances made in individual and collective health in the period under review. It should be pointed out, however, with regard to the fundamental policy

regarding health and development established by the Governments, that the road ahead is long and the exertions called for intense. Statesmen, economists, and health specialists, who in recent years have succeeded in more clearly defining their respective spheres of action and influence for the common good, must deepen their knowledge of that organized undertaking which is the government of a country. That health is investment and not expenditure, that its techniques must be a part of all development programs, and that it is a fundamental factor in stimulating production and consumption, that there is no scientific evidence that it leads to an absolute increase in population—these are facts that have been established during the four-year period and which today are accepted by Governments and the majority of experts. The most conspicuous expressions of this assertion are the Act of Bogotá, the Charter of Punta del Este, and the Alliance for Progress. Nevertheless, efforts must be vigorously pursued to make this policy an ever more tangible reality for the peoples of the Americas.

To plan development and social progress and to fuse the natural and the human resources of the Americas into an harmonious whole is the immediate task. Health as a concept and a methodology must be given its rightful place in plans and programs, in keeping with the magnitude of the problems, their social and economic importance, and the concrete possibilities for solving them. While such health programs are being drawn up, preventive and curative activities must be intensified—they must be integrated—in order to increase the capacity of the peoples of the Americas to learn and produce. It is these basic concepts which in our opinion must inform the future policy and activities of the Pan American Health Organization and the World Health Organization in the Hemisphere.

This pivotal period in the development of community life, the anxiety and impatience that dominate the minds of many, the difficulties in finding just solutions to social problems and opportunities to contribute to the common good justify today, as they did four centuries ago, the counsel of Descartes:

If any means can ever be found to render men wiser and more ingenious than hitherto, I believe that it is in Medicine they must be sought . . . and that we could free ourselves from an infinity of maladies, of body as well as mind, and perhaps also even from the debility of age, if we had sufficiently ample knowledge of their causes and of all remedies provided for us by Nature.<sup>1</sup>

<sup>1</sup> Descartes, René. *Discours de la méthode*.



## **PART II**



# I. PLANNING AND RESEARCH

## PLANNING

The long-standing interest of PAHO in promoting national health planning by Member Governments reached a new level of intensity during the period under review. The planning and evaluation of health programs had been the subjects of the Technical Discussions at the 1956 and 1957 meetings of the Directing Council, and in 1961 the concern and intentions of the Organization to assist in this area were translated into concrete measures and a firm commitment for the future. The steps taken by PAHO to strengthen its work in the field of planning were stimulated by the attention that had increasingly been directed to development planning, as manifested by the Act of Bogotá in 1960 and by the Charter of Punta del Este in 1961.

During the last four years some of the countries of the Americas took measures to establish planning units within their national health services. This constituted a basis on which to build, but a much more comprehensive type of endeavor was needed to develop the long-range, coordinated health plans at the highest level as a component of the plans for national development as a whole, called for by the Charter of Punta del Este.

Analysis by the Organization disclosed certain basic requirements which had to be satisfied before the obligations entailed in long-range planning for health could be met. One of the requirements was for a cadre of top-level health administrators to assist the national agencies in preparing their comprehensive, coordinated health plans. Attention also had to be given to the training in the principles and techniques of planning, not only for program personnel but also for teachers in training centers for the health professions, so that future graduates of these centers would possess an essential minimum background in planning. Many countries still needed to develop effective planning structures within their national health agencies, and even more countries needed to promote optimum intragovernmental functional relationships in developing national planning bodies for carrying out the required activities. The role of international collaboration in health planning needed to be more sharply defined, and internal preparations were required to ensure that PAHO would

be able to contribute effectively. Finally, bibliographic materials and guides for comprehensive health planning had to be developed.

In order to assist in planning for the mobilization of health efforts throughout the Americas along the general guidelines recommended in the Charter of Punta del Este, the Organization took the following steps:

1. Meetings of advisory groups in the fields of sanitation and nutrition were held in 1961, and others on medical education, health planning, medical care, and research were planned for early 1962. The reports and recommendations of the advisory groups, supplemented by others prepared by the headquarters staff in the more clearly defined areas of statistics, maternal and child care, malaria eradication, and communicable disease control were to provide a comprehensive working framework of expert judgment to guide PAHO in furnishing assistance.

2. Measures to promote the development of centers for training in health planning for the Hemisphere were initiated and 100 fellowships were committed for this purpose over the following five years.

3. A Planning Office was established at PAHO Headquarters to lead this effort and to ensure the necessary staff coordination to support most effectively health planning by Member Governments. While the main emphasis was on the development and refinement of the methodology for health planning, steps were also taken to adapt existing manuals prepared for guidance in health planning for more widespread use in support of the planning activities carried out in conformity with the Charter of Punta del Este.

## RESEARCH

Biomedical research and improvement of the health of people go hand in hand with the dramatic advances of science in general. Every field of science, from nuclear physics and chemistry to the sciences and technologies of outer space, involves medicine and health. Our revolutionary century, in large measure, is a reflection of the dynamics of scientific discoveries and of their application

the world over. The Organization is part of this historic revolutionary process, participating in it and disseminating newer knowledge through expert consultants, through educational and training programs, and by stimulating and assisting in the development of national and international research institutions which mobilize the skills and facilities needed to solve health problems.

The Institute of Nutrition of Central America and Panama (INCAP), for example, is well known for its contributions to the knowledge and treatment of protein malnutrition, the assessment of nutritional status of infants and children, and the interrelationships of acute infections and nutritional status, as well as for studies of diets and their effects on chronic diseases, and of nutritional requirements in general.

The Pan American Zoonoses Center has pursued investigations on the preparation and testing of the Sterne anthrax vaccine, developed a new technique for carrying out the Ascoli precipitation test for anthrax, improved diagnostic procedures for hydatid disease, made serological surveys of Q fever in animals and man, and studied the relationship between animal reservoirs of salmonella and infant diarrheas and the epizootiology and epidemiology and control of leptospirosis.

The Pan American Foot-and-Mouth Disease Center is another important research center that draws on international resources looking toward the control of this disease, which has devastating effects on the economy of Argentina, Brazil, and other countries.

While these centers receive support from the Organization, other research activities, such as the continuing studies of insect resistance to insecticides and other aspects of malaria eradication, are undertaken directly. The pioneering field-trial studies on oral poliovirus vaccine in the Americas represented a successful effort of great importance. The study of comparative mortality rates by causes in 10 cities of the Americas, begun in 1961, promises to provide valuable data for future epidemiological studies on geographical differences in the distribution of fatal diseases.

In these and other studies, the country focus varies but each contributes to the dynamics and total output of new knowledge and skills. The spectrum of unsolved problems, however, is so broad and diverse, and the biomedical research resources vary so greatly throughout the Americas, that collaboration of scientists and public health officials across national boundaries is an everyday occurrence. Sometimes such cooperation is a person-to-person arrangement; in other cases it is a coordinated inter-institutional and intergovernmental effort.

To assist national biomedical research development and to facilitate international cooperation and collaboration among scientists, the Organization established an Office

of Research Coordination in 1961.<sup>1</sup> It maintains communication and coordination with the Office of Research Planning and Coordination at WHO Headquarters in Geneva in order to achieve the greatest possible mutual cooperation between headquarters offices as well as among field projects.

The new Office is making an inventory of the biomedical research resources in the Americas, including research institutions and personnel and their interests and projects, the better to assist each country in the development of its full potential for solving health problems. Meanwhile, countries which are better developed in these respects share their skills and resources in cooperative programs.

The developing and still tentative guidelines and policies of the Office of Research Coordination are:

1. To stimulate and develop research activities related to the program effort of the Organization;
2. To give high priority to the solution of problems which require a multicountry cooperative effort;
3. To stimulate and assist the development of national biomedical research institutions and organizations; and
4. To advance the development of biomedical research in the Americas by promoting the training of research workers in national institutions and through cooperative efforts internationally.

Among the subjects which have been identified as requiring research efforts on a more intensive basis are ARBO viruses, Chagas' disease, foot-and-mouth disease, leprosy, malaria, plague, and schistosomiasis. Wider areas where intensified research is required are the zoonoses in general, dental health, mental health, radiation health, environmental health, and public health practice.

While there is much to learn about the human being in disease as in health, a great deal that is known is inadequately applied in practice. There is need for more experimentation in systems of public health practice and medical care in the Americas. Systems of practice which work well in one country may fail in another. No one doctrine or system of medical care has universal applicability. What appears to be needed is an eclectic approach which begins with an analysis of how a community, be it rural or urban, lives—an analysis of its systems of communication and of the cultural institutions and patterns and physical environment within which its medical services function. From these basic data, which can be obtained only through biomedical and social science investigation, plans can be developed to encompass not merely the needed medical care services but also the necessary participation of the community itself in all

<sup>1</sup>The National Institutes of Health of the United States Public Health Service made a grant in support of the Office.

aspects of preventive medicine and disease control. There is no greater challenge to the Americas and to the Organization.

To assist the Organization in charting its course and in developing the pertinent policies and specific programs, an Advisory Committee on Medical Research, comprising 12 distinguished scientists, educators, and administrators in the Americas, has been appointed. It will meet periodically with the officers of the Organization and expert consultants to review the research program and give its advice.

## HEALTH ECONOMICS

Although health economics as a formal discipline was still in its infancy in the period 1958-1961, the Organization gave increasing recognition to the close relationship between health, welfare, and economic and social development.

From the original proposal of the Government of Brazil for "Operation Pan-America" in 1958, through the subsequent meetings of the "Committee of 21" American Republics which culminated in the launching of the Alliance for Progress in 1961, the Organization was regularly represented in the deliberations and took a major

initiative in the formulation of the sections on health in the Act of Bogotá (1960) and in the Charter of Punta del Este (1961).

The subject "Methods of Evaluation of the Contribution of Health Programs to Economic Development" was chosen by the XII Meeting of the Directing Council (1960) to be the theme for the Technical Discussions at the XIII Meeting (see report on page 77). A mixed working group of economists and public health specialists was convened in 1961 to advise the Organization on an interdisciplinary approach to the subject. In the same year, a grant was made to the Bureau of Public Health Economics of the University of Michigan, U. S. A., in support of a study on the economic impact of malaria eradication, and an economist was assigned part time at Headquarters to study questions of interest to health programs in the Americas.

In 1960 a general introduction to the subject, *On Health and Wealth*,<sup>1</sup> was published, followed in 1961 by *Health—A Basic Component of Economic Development*<sup>2</sup> and *Salud—Crecimiento Económico y Progreso Social en la América Latina*,<sup>3</sup> a compilation of material relating to the Punta del Este Meeting of the Inter-American Economic and Social Council.

<sup>1</sup> *Miscellaneous Publication PAHO 57*, 1960.

<sup>2</sup> *Miscellaneous Publication PAHO 66*, 1961.

<sup>3</sup> *Miscellaneous Publication PAHO 68*, 1961.

## II. PUBLIC HEALTH ADMINISTRATION

### INTEGRATED HEALTH SERVICES

From the very beginning of PAHO assistance to countries in the organization and strengthening of public health services, the Bureau has emphasized the need for coordination among the basic services concerned. During the four years under review, there was a shift from the concept of simple coordination to that of integration. The increase in both preventive and curative activities made clear both the need for and the practical advantages of integrating all health activities so far as possible. Integration became a working philosophy based on the principle that health is an indivisible whole, with the general objective of providing a balanced group of services so as to assure the best possible level of health for the individual and the community.

This philosophy was reflected in the 16 programs of development and organization of health services in which the Bureau collaborated with the Member Governments. Most programs begun prior to 1958 were broadened in scope, many expanding from local or regional to national coverage. In the period 1958-1961 new programs of integrated health services were begun in Argentina (Province of San Juan), Brazil (Mato Grosso), Cuba (first stage of a country-wide program in the Province of Pinar del Río), and Mexico (nine states).

The assistance provided by the Organization was adapted to the differing requirements of the individual countries—in some cases stressing pilot demonstration projects at the local level and in others concentrating at regional or national levels. Of the 16 programs active by the end of 1961, only those in El Salvador, Mexico, and Uruguay were operating wholly at the local level. In all, integrated health services programs at the local level were operating in 10 countries by the end of 1961, comprising some 63 health centers serving a population of slightly more than 3,000,000.

In Colombia, Cuba, the Dominican Republic, Guatemala, Honduras, and Panama, assistance was given at both local and national levels, and in Argentina at both the local and the provincial level, with the national health services cooperating with provincial authorities. In Brazil,

in addition to work in the Mato Grosso area, the Northeast—which was also treated as a separate entity for purposes of economic development planning—was the site of a project in integrated health services which began in the State of Rio Grande do Norte, extended to Piauí and Sergipe by 1961, and was planned eventually to cover nine states.

The Organization's assistance to Bolivia, Ecuador, Haiti, Paraguay, and Peru has been concentrated at the national level.

In a number of the programs, there was a restructuring of health services at the national level so as to permit decentralized operation of local services with centralized administration and development of standards. The work of the Bureau in integrated health services also stimulated planning activities (see Planning, page 21).

Many Governments felt the need for an evaluation of work already accomplished, and in 1960 and 1961 a general evaluation of health services in Paraguay was made by a Bureau consultant and the basic field work for the evaluation of health services in Nicaragua was completed. All the countries of Central America and Panama requested a similar evaluation, which is now in process. One of the main contributions of the evaluation work already completed was the establishment of a standard methodology.

The Bureau also promoted both formal courses and in-service training for personnel of integrated health services. Local demonstration projects were particularly well adapted to practical and field training of medical and paramedical personnel, although formal and theoretical courses, sometimes using the facilities of schools of public health, were also organized.

At the requests of the Governments concerned the Bureau assisted in drafting health legislation in Argentina (1959-1961), Bolivia (1959), Costa Rica and El Salvador (1961), Paraguay (1958), and Trinidad (1958-1961).

Since the appointment of a Regional Adviser in Medical Care in 1960, the Bureau has also been active in promoting the integration of medical care with preventive health services (see below).



## MEDICAL CARE

The Pan American Health Organization has been increasingly concerned with problems of medical care, particularly in the last two years of the period under review. The Act of Bogotá (1960) and the Charter of Punta del Este (1961) pointed up the growing recognition of medical care as an integral part of public health, as well as the role of public health in over-all social and economic development. This growing recognition underlies the choice of medical care as the theme for the Technical Discussions at the XVI Pan American Sanitary Conference.

Largely for historical and traditional reasons, medical care and public health have been separated more sharply in the Americas than in other regions of the world. This separation deepened with the spread of social-insurance systems which in a number of countries provided medical care independently of the health activity of ministries of health.

In 1960 and 1961 the Organization oriented its activities in technical assistance and training of personnel in the field of medical care toward the concept of continent-wide health planning in terms of the following policy: Medical care should be considered one of the basic services of an integrated program of health and social welfare. Its relationship with other services such as maternal and child health, control of communicable diseases, nutrition, mental health, etc., should be reflected in effective coordination and integration. In planning medical care, ambulatory, outpatient, and home care should not be neglected as means of extending preventive and curative services. The new concept of medical care requires the reorientation of personnel as well as improvement in the quantity and quality of staff. The sociopsychological aspects of medical care should be investigated thoroughly both to improve planning and service and to strengthen community support and understanding.

The principal steps taken by the Organization during the period under review included the following:

Medical care was included as a basic service in integrated health plans in the most recent agreements for assistance to Governments by the Organization.

A Regional Adviser in Medical Care was appointed in 1960.

Work was begun on the organization of medical care services within the framework of the national health program in El Salvador.

A study was made of the relationship between medical care services and health services in the Americas.

Assistance was given to rehabilitation programs in Brazil and Chile.

The consultant providing services in the field of hospital administration in Argentina also aided in planning for the reconstruction of earthquake-damaged facilities in Chile.

## NURSING SERVICES

In order to help countries improve and expand nursing services, the nurses assigned by PAHO to integrated health services projects, as well as those at Headquarters and the Zone Offices, assisted national and local health authorities to establish, strengthen, and enlarge units, sections, or departments of nursing. In addition, minimum ratios of nursing personnel to population were worked out and recommended for use in determining the adequacy of existing nursing services and as a basis for long-range planning for nursing training and education.

During the four years under review, emphasis changed from concern with purely preventive services to the consideration of both curative and preventive aspects of health work, and it was recognized that such change must be reflected in the services provided to countries. For this reason, the Regional Adviser in Public Health Nursing was re-titled Regional Adviser in Nursing Services. This change reflected the increased emphasis on hospital and outpatient nursing needs as well as the continuing advisory services for public health nursing.

Interest increased in the preparation and utilization of midwifery personnel, and as a result recruitment was begun of nurse-midwife consultants with broad experience in maternal and child health services to participate in planning for and promoting the best utilization of such personnel throughout the Americas.

In 1961 a nurse was assigned to the El Paso Field Office to participate in activities designed to promote better health services in the U.S.-Mexico border region.

As numbers of nursing personnel increased in the Americas and graduate nurses were increasingly assigned to newly created supervisory and administrative posts in hospital and public health services, it became evident that this group needed orientation to their new activities. The first seminar for nurses in such positions was held in El Salvador in 1961.

The increase in the demands on nursing service personnel pointed up the need to determine what duties nurses and auxiliaries actually perform and whether their activities can rightfully be called nursing. Two studies undertaken with PAHO assistance revealed that much of the nurse's time is devoted to activities which could be carried out by non-nursing personnel.

A study of the activities of nursing and sanitation per-

sonnel in Jamaica was carried out in 1961, and the analysis is to be completed in 1962. The study was designed to provide data to aid in improving the training of each group to carry out its assigned functions. Similar studies are to be made in other countries.

## MATERNAL AND CHILD HEALTH

The infant and young child, as the most sensitive indicators of and focal point for improvement of the health of society, may be considered the major beneficiaries of the total health program of the Organization. The decennial goal of reducing the mortality of children under five years of age by 50 per cent, established by the Charter of Punta del Este, represents a recognition of this fact.

For Latin America as a whole it is estimated that about one out of every seven live-born infants dies before reaching the fifth year of life. The major causes of death stem from the nutritional status of the child and the impaired reaction of his body to pathogens as a result of malnutrition. The vast majority of children who die from this interacting complex of forces come slowly to their death, leaving behind them months of stunted growth, bouts of repeated illness, and high demands for medical care as signposts for the actions which could have prevented death.

During the quadrennium, major expansion in the Organization's nutrition program has occurred. Research has documented the significance of nutritional deprivation as the immediate (though officially unreported) cause of one in every four deaths in early childhood and/or a contributing factor in many of the remainder. Assistance to Member Governments and educational activities by the expanded staff of the Organization have made possible the beginning of the process of putting new knowledge about the significance of proteins at the disposal of child health services so that realistic advice and treatment may be provided. The production of INCAPARINA<sup>1</sup> and of other cheap sources of protein using indigenous agricultural and fisheries products is an achievement which opens new vistas for the improvement of child health.

Pathogens entering the body may be counteracted by increasing individual resistance to them, interrupting their channels of spread, or by treating the disease which they produce. Communicable disease control activities in the quadrennium, the results of which are shown by hemisphere-wide reductions in the prevalence of malaria, poliomyelitis, smallpox, and tuberculosis, are of predominant benefit to young children.

<sup>1</sup> See p. 27.

The priority given to the Organization's programs to assist Member Governments to improve the quality and quantity of potable water, and the results of these activities during the quadrennium, are closely linked with the fact that diarrhea is the leading reported cause of death in early childhood in Latin America. It is well known that hand washing, simple excreta-disposal systems, and home food sanitation are means of interrupting the major channel of spread of the enteric pathogens which cause diarrheal death in young children. An adequate water supply is the primary element in the reduction of enteric diseases and should be supplemented by measures for excreta disposal.

The third element in this three-pronged attack against pathogens—medical care services—can be improved by expansion (increased coverage), by reorganization (increased efficiency), and by improvement in the technical quality of services rendered. During the quadrennium, extension of the coverage of integrated or basic health services, whose predominant clientele are mothers and children, occurred in the 16 countries which the Organization has been assisting, and new programs were begun in four countries. Movement toward the goal of increased efficiency in the provision of health services was evident in the beginnings of regionalization and the integration of curative (medical care) services for children with conventional services of child health promotion and protection.

Efforts to improve the quality of service have taken several forms. The seminars on diarrheal disease begun in the previous quadrennium led to considerable expansion of the program of use of simple rehydrating methods within the framework of existing child health services in most countries of the Region. Research in diarrheal disease and nutrition, supported by the Organization, was begun, and is still under way in Guatemala (INCAP) and Peru. Research in Mexico, also supported by the Organization, has established the practicality of simple oral rehydrating treatment measures. Medical education activities begun in the previous quadrennium culminated in a seminar on the undergraduate teaching of pediatrics oriented to strengthening the preventive and social aspects of this field as an undergraduate discipline. Plans were developed for the first regional postgraduate refresher course in social pediatrics aimed at improving the quality of field health service practice, which is to be held in Chile. The fellowship program continued to assist countries to strengthen services by better preparation of personnel. A Regional Adviser in Maternal and Child Health was added to the headquarters staff so that it may better fulfill its role in helping to attain a 50-per-cent reduction of mortality in children under five during the decade of the 1960's.

Mother and infant form an inseparable unit. In addition to the assistance to Member Governments in developing and improving child health activities of the integrated health programs promoted by the Organization, increasing emphasis has been given to the development of prenatal clinics as an important element of health service. Increased contacts with and instruction of the traditional birth attendants have also been developed as an element of health service. These attendants must be relied upon to assist at childbirth until sufficient professionals are available to replace them. The expansion of the Organization's role in assisting countries in the field of maternal care is evident in the fact that by the end of the quadrennium five experienced public health nurse-midwives occupied field positions strategically situated to serve three quarters of the Member Governments, and plans had been made to attain 100-per-cent coverage. Plans were also developed to strengthen maternal and child health nursing services by the appointment of an additional nurse-midwife to headquarters staff, so as to supplement the efforts of the Regional Adviser in Nursing Services, who is also a qualified nurse-midwife. These developments are a response to the increasing numbers of requests for assistance in the improvement of maternity care service.

## NUTRITION

During the period 1958-1961, the activities of PAHO in the field of nutrition increased substantially. In 1958 the Bureau had only one Regional Nutrition Adviser who served simultaneously as Director of the Institute of Nutrition of Central America and Panama (INCAP). In 1961, in addition to the Director of INCAP, there was a Regional Nutrition Adviser at Headquarters and Zone Advisers had been appointed in Zones I, II, and III. This increase in staff enabled the Organization to expand substantially its assistance to Governments.

The training of personnel was given high priority, and the number of fellowships for training in nutrition increased from five in 1958 to 31 in 1961.

The Expanded Nutrition Program began in 1958 as a cooperative effort of the Governments, PAHO/WHO, the United Nations Food and Agriculture Organization (FAO), the United Nations Children's Fund (UNICEF), and in some cases the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The goal of the program was to raise the nutritional level of rural families by intensive educational activity and by stimulating the production of foods at the family level. Government participation entailed the coordinated efforts of ministries of health, education, and agriculture. The program began in Chile and Guatemala in 1958, and by

the end of 1961 Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Nicaragua, Paraguay, and Peru had also established expanded nutrition programs.

Since deficiencies of high-quality protein were the most important nutritional problem in many countries of the Hemisphere, the Organization encouraged Governments to make better use of local resources, complementing the development of milk, egg, meat, and fish production with the use of locally available protein-rich products not currently used for human food. In this connection, the research undertaken at INCAP in Guatemala resulted in the development of a low-cost vegetable-protein concentrate known as INCAPARINA, which was first produced commercially in 1960. Production rose from 678,000 75-gram packets in 1960 to 1,021,000 in 1961, with each packet providing a child's total daily protein requirement. Production began in Guatemala in 1960 and in El Salvador in 1961, and by the end of 1961 six commercial firms in Colombia, Mexico, Nicaragua, and the United States had also been authorized to produce INCAPARINA.

In addition to INCAPARINA, the Organization promoted the study of other mixtures of high nutritive value, based principally on fish meal, "chocho" (*Lupinus mutabilis*), peanuts, and soya beans. In this process, maximum emphasis was placed on the lowest-cost commodities locally available.

## Institute of Nutrition of Central America and Panama

During the four years under review, two of the principal accomplishments of the Institute of Nutrition of Central America and Panama (INCAP) were in the field of iodine and protein deficiencies. Following INCAP's recommendations and using the method of treating crude salt with potassium iodate developed by the Institute some years ago, and in view of the prevalence of endemic goiter, almost all member countries of INCAP adopted legislation to make salt iodization compulsory. The development and subsequent commercial manufacture of the vegetable-protein mixture INCAPARINA has been described in the preceding section. INCAP also cooperated in the Coordinated Program for Applied Nutrition in its member countries.

### *Training*

In 1960, INCAP organized a School of Nutrition and Dietetics, which provided a two-year theoretical and

practical course for university graduates wishing to specialize in applied nutrition. In the same year, courses for public health physicians and for public health dietitians were initiated. INCAP also provided special training in nutrition and related sciences to qualified individuals. In addition to general training in nutrition and dietetics, INCAP provided resources for laboratory studies, clinical studies, and studies of social and cultural factors affecting nutrition. A total of 183 persons received training at INCAP in the period 1958-1961. Since its founding in 1949, 143 fellows from INCAP member countries, 120 fellows from other American countries, and 32 from other parts of the world were trained at INCAP.

### Research

Research carried on during the four-year period centered principally on child malnutrition, practical methods for evaluating the nutritional status of population groups, the relation between nutrition and infections, new foods and methods for making better use of available resources to correct prevalent deficiency states, and the role of diet in the etiology of chronic diseases. The research results were published in 105 papers in English and 139 in Spanish. In addition, 72 pamphlets were prepared for health education purposes.

### Advisory Services

The expansion and intensification of assistance to countries with the goal of strengthening nutrition services at the national level, required the strengthening of the Public Health Division of INCAP. In addition to continuing its research and training programs, INCAP during the period placed particular emphasis on strengthening its programs of application, including programs for flour enrichment, salt iodization, supplementary feeding for various population groups, and nutrition education. With the expansion in services, staff rose from 73 in 1958 to 124 in 1961, and the budget more than doubled, rising from \$274,481 in 1958 to \$711,416 in 1961.

## DENTAL HEALTH

An inherent weakness of dental health services, observed in a survey of dental public health in Latin America made in the preceding reporting period, was the

shortage of qualified public health dentists to head the growing number of dental health services.

At that time there was no special program for training public health dentists in Latin America, and institutions in the United States were relied on almost exclusively to satisfy training needs.

PAHO initially concentrated its resources on this problem, and the School of Public Health of the University of São Paulo was chosen as a regional center for training in dental public health. The first course began in February 1958, with an Organization consultant teaching public health dentistry.

During the period 1958-1961 four specialization courses at the MPH level and two short orientation courses were given to 85 dentists from 19 countries. All but one country in Latin America benefited from this program. Table 1 shows that the number of dentists graduated from São Paulo during this four-year period is greater than the number graduated from all Latin American schools of public health in the preceding 19 years.

By the end of 1960, the training center was self-sufficient in terms of teaching staff, and PAHO services became only advisory in nature.

TABLE 1. LATIN AMERICAN DENTISTS GRADUATED FROM SCHOOLS OF PUBLIC HEALTH (MPH COURSE OR EQUIVALENT), 1938-1957, AND FROM THE UNIVERSITY OF SÃO PAULO, 1958-1961, BY COUNTRY OF ORIGIN

Country of origin	1938-1957 (All schools)	1958-1961 (São Paulo only)
Argentina .....	1	3
Bolivia .....	-	1
Brazil .....	3	22
Chile .....	4	-
Colombia .....	1	4
Costa Rica .....	1	2
Cuba .....	-	1
Dominican Republic .....	-	1
Ecuador .....	1	2
El Salvador .....	2	2
Guatemala .....	1	1
Haiti .....	-	1
Honduras .....	-	-
Mexico .....	4	3
Nicaragua .....	-	-
Panama .....	2	1
Paraguay .....	2	3
Peru .....	3	3
Uruguay .....	1	1
Venezuela .....	8	4
Total .....	34 <sup>a</sup>	55

- None.

<sup>a</sup> In addition, some 20 Argentine dentists attended the School of Public Health in Santa Fe from 1948 to 1954.

The year 1961 saw a shift in emphasis from dental public health training to dental education. The dentists trained in public health in São Paulo and subsequently employed as public health dentists had satisfied the need for such personnel on a short-term basis, but the long-range need could only be satisfied by the dental schools as a whole. Twelve of the fellows trained in São Paulo in 1958-1961 now occupy teaching positions in dental schools and contribute to the long-range improvement of dental services by preparing preventive- and community-minded professionals.

The change in emphasis from dental public health to dental education was based on the belief that the same investment of PAHO effort and funds would produce larger gains if applied to dental schools rather than to other dental activities.

Two significant steps were taken in 1961 to implement the Organization's policy for dental education: the creation of a pilot Department of Preventive and Social Dentistry in the University of Antioquia, Colombia, and the beginning of preparations for a series of three seminars on dental education. The pilot department will search for the best formula of balanced professional education in the technical, biological, and social aspects of dentistry, demonstrate how a dental school can effectively work together with the health service, and serve as a field training area for visiting professors from other dental schools. The aim of the seminars on dental education is to provide a forum to analyze the philosophy and objectives of dental education in Latin America and make recommendations for its improvement. Both the pilot Department of Preventive and Social Dentistry and the seminars on dental education represent five-year projects established in collaboration with the W. K. Kellogg Foundation.

## MENTAL HEALTH

During the period under review, the growing recognition of the importance of mental health in the process of social and economic development was reflected by increasing activity of the Organization in the field of mental health. The work of PAHO in this field was carried out through fellowships, seminars, conferences, and technical assistance to Member Governments.

The basic philosophy of the Organization was that mental health work should be concerned not only with the problems but also with the productive potential of people. Children and youths had a greater life expectancy than in the past, but also were exposed to greater tensions. Not only industrialization and mechanization, but the

general change in systems of values that goes with social and economic change, created new pressures that were reflected, for example, in suicide rates and in alcoholism.

A mental health unit was created at Headquarters, and background information on mental health problems and facilities was collected. Table 2 shows the average suicide rates per 100,000 male inhabitants in the Americas and six European countries in 1955-1957. With the exception of El Salvador, there appears to be a clear relationship, both in the Americas and in Europe, between high levels of industrialization and economic development and high suicide rates. As can be seen from Table 3, based on data for 1957, deaths from alcoholism show no such clear-cut relationship in the Americas or in Europe. Finally, homicide was a particularly important problem in the Americas; available data for 1955-1957 show that 12 American countries had death rates exceeding 5 per 100,000 inhabitants from homicide, and four countries more than 40 homicide deaths per 100,000, compared with less than 2 deaths per 100,000 in Western Europe.

The resources devoted to treatment for mental illnesses were clearly related to the socioeconomic status of the

TABLE 2. AVERAGE SUICIDE RATES PER 100,000 MALE INHABITANTS IN SELECTED COUNTRIES OF THE AMERICAS AND EUROPE, 1955-1957

Country	Suicide Rate <sup>a</sup>
Americas	
El Salvador .....	21.8
United States .....	16.3
Canada .....	12.6
Venezuela .....	12.3
Panama .....	9.1
Costa Rica .....	7.5
Chile .....	6.9 <sup>b</sup>
Guatemala .....	6.9
Dominican Republic .....	5.9
Honduras .....	5.9 <sup>c</sup>
Peru .....	3.2 <sup>d</sup>
Mexico .....	3.0
Paraguay .....	2.3 <sup>b</sup>
Colombia .....	2.2
Europe	
Switzerland .....	30.4
Denmark .....	29.7
Sweden .....	26.8
France .....	23.4
Great Britain .....	13.1
Italy .....	10.3

<sup>a</sup> For purposes of comparison, age-specific rates have been combined for each country on the basis of the age structure of the United States population in 1950.

<sup>b</sup> 1955-1956.

<sup>c</sup> Average of 1955 and 1957.

<sup>d</sup> 1957.

TABLE 3. DEATH RATE FROM ALCOHOLISM <sup>a</sup> PER 100,000 POPULATION IN SELECTED COUNTRIES OF THE AMERICAS AND EUROPE, 1957

Country	Death rate
<b>Americas</b>	
Guatemala .....	6.2 <sup>b</sup>
Chile .....	3.4
Costa Rica .....	2.4
United States .....	1.5
Panama .....	1.3
Venezuela .....	0.9
Canada .....	0.8 <sup>c</sup>
Colombia .....	0.4 <sup>d</sup>
Ecuador .....	0.4 <sup>e</sup>
<b>Europe</b>	
France .....	10.6 <sup>b</sup>
Switzerland .....	4.2 <sup>o</sup>
Italy .....	1.3 <sup>f</sup>
Sweden .....	0.4 <sup>o</sup>
Denmark .....	0.1
Great Britain .....	0.1

<sup>a</sup> Includes alcoholism and alcoholic psychosis as defined in the International Classification of Diseases.

<sup>b</sup> 1955.

<sup>c</sup> 1956.

<sup>d</sup> 1952.

<sup>e</sup> 1953.

<sup>f</sup> 1954.

countries, as shown in Figure 1. In 1957, the proportion of available hospital beds occupied by persons with mental illness was highest in the United States and Canada and, with the exception of Argentina and Uruguay, the proportion of occupancy for mental illnesses in Latin America was less than half the United States figure.

Since only a limited number of fellowships was available, they were awarded largely to professional personnel who were to be in charge of national mental health programs. In the period 1958-1961, nine fellowships were awarded to physicians from the American countries for study in the United States, Canada, Puerto Rico, and Europe.

A seminar on alcoholism, in which 15 countries participated, was sponsored by the Organization in Chile in 1960. The Organization was also one of the sponsors of the 1960 conference on malnutrition and food habits in Cuernavaca, Mexico, which was organized by the World Federation for Mental Health and the Josiah Macy Jr. Foundation.

The services of short-term consultants in mental health were provided to Argentina, Chile, Mexico, the United States, Venezuela, and Jamaica.

Work was begun on a long-range program to stimulate the incorporation of mental health in public health prac-

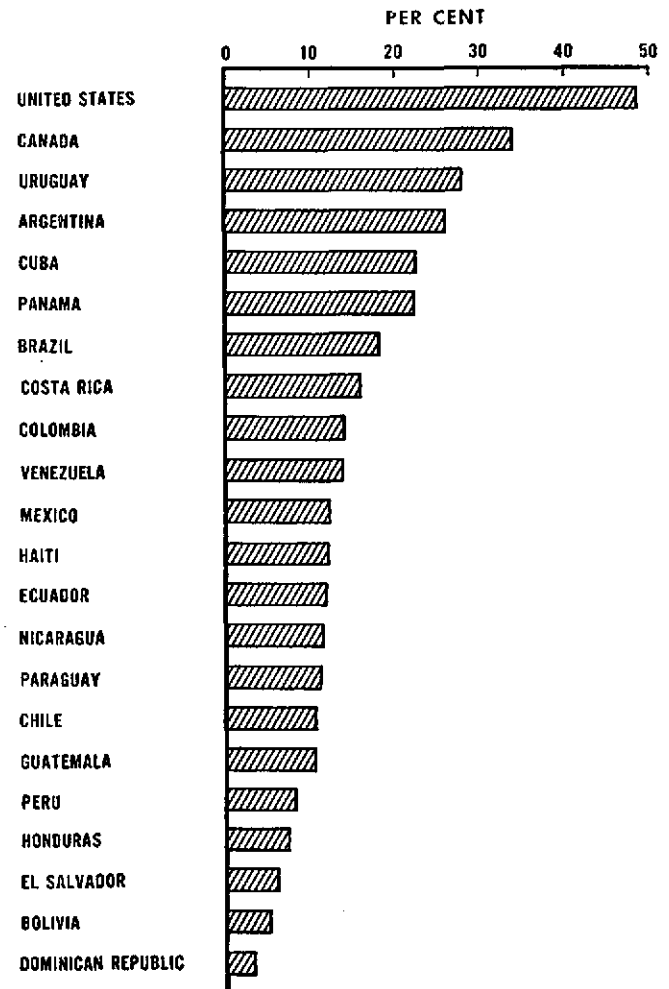


FIG. 1. PER CENT OF AVAILABLE HOSPITAL BEDS OCCUPIED BY PERSONS WITH MENTAL ILLNESS IN COUNTRIES OF THE AMERICAS, 1957.

tice by means of seminars, training programs, technical assistance to countries, and the epidemiological investigation of mental diseases.

## RADIOLOGICAL HEALTH

The use of nuclear energy in the production of power, in industry, and in medicine—both clinical and research—increased in the period under review, yet the medical use of X rays continued to be by far the largest contributor of ionizing radiation to man.

Table 4 shows the radioactive isotopes shipped by one United States supplier to six Latin American countries in the years 1958 through 1961. It is more illustrative of the variety than of the quantity of isotopes in use, since available information indicates that European sources supply the bulk of the isotopes used in Latin America.

As a result of the various activities created by the peaceful application of nuclear energy in the Member Countries, a Radiation Protection Unit was established at PAHO Headquarters in 1960. The objectives were to encourage national health services to develop procedures and regulations and adopt international standards for radiation protection connected with the use of X rays and radioisotopes and for the disposal of radioactive wastes; to promote the teaching of basic health physics, radiobiology, and radiation protection in medical, dental, veterinary public health, and other professional schools; and to foster the use of radioisotopes for medical diagnosis, therapy, and research.

Fellowships for the training of health service and teaching personnel were made available by the Organization even before the Radiation Protection Unit was formed.

In 1958, 13 trainees attended a short course in medical and biological aspects of radiation at the Puerto Rico Nuclear Center and seven fellowships were awarded for study at the Center in radioisotope techniques and safety and in health physics. Three additional fellowships were given in 1959, one in 1960, and two in 1961. A PAHO staff member was trained at the University of Rochester Atomic Energy Project in 1959-1960.

At the request of the Government of Chile technical assistance was provided in 1961 in establishing a center at the University of Chile for clinical training in the use of isotopes. The program was jointly financed by PAHO and the W. K. Kellogg Foundation. Special radiation detection and measuring equipment and supplies were also provided.

PAHO consultants visited various countries in Latin

TABLE 4. RADIOACTIVE ISOTOPES SHIPPED TO LATIN AMERICA BY ONE UNITED STATES SUPPLIER, 1958-1961  
(in millicuries)

Isotope	1958	1959	1960	1961
Cadmium-115	-	-	-	0.1
Calcium-45	5.0	-	-	15.0
Carbon-14	-	5.0	-	2.0
Cerium-Praseodymium-133	-	5.0	-	1,070.0
Cesium-134	-	-	-	1.0
Cesium-Barium-137	130,000.0	-	-	65.0
Chlorine-36	<sup>a</sup>	-	-	20.0
Cobalt-60	-	-	-	16.0
Copper-64	-	-	-	10.0
Europium-152	-	-	-	1.0
Iodine-131	3,210.0	3,000.0	3,150.0	3,450.0
Iron-55	0.3	-	-	-
Iron-59	1.0	1.0	1.0	2.0
Mercury-203	10.0	-	1.0	1.0
Molybdenum-99	-	15.0	-	-
Nickel-63	-	-	-	5.0
Palladium-109	-	-	-	150.0
Phosphorus-32	1,000.0	305.0	473.0	588.0
Promethium-147	-	-	-	10.0
Rhenium-186	10.0	-	-	-
Rubidium-86	-	-	-	10.0
Scandium-46	5.0	-	-	-
Silver-110	-	-	-	20.0
Strontium-Yttrium-90	-	-	-	50.0
Sulfur-35	130.0	-	-	5.0
Thallium-204	5.0	-	-	-
Tin-113	1.0	-	5.0	-
Zinc-65	25.0	-	-	15.0
Zirconium-Niobium-95	5.0	-	-	10.0
Other	<sup>b</sup>	<sup>c</sup>	<sup>d, e</sup>	<sup>e, f</sup>

- None.

<sup>a</sup> 5 microcuries.

<sup>b</sup> 3 service irradiations of gold wire.

<sup>c</sup> 7 service irradiations of gold wire.

<sup>d</sup> 5 milligrams of Technetium-99.

<sup>e</sup> 1 service irradiation.

<sup>f</sup> 30 millicuries of mixed fission products.

America in 1961 to discuss the latest concepts of ionizing radiation as a public health problem and to promote the establishment of radiation protection units.

The services of short-term consultants were made available to assist Governments in surveying radiation problems, in drafting laws and regulations to provide the administrative and legal bases for carrying out protection measures, and to advise on safety programs, including atomic waste control.

Training films to explain the nature of biological damage from ionizing radiation, its proper use, and measures to be used in decreasing the radiation received were provided.

## PUBLIC HEALTH LABORATORIES

During the four years under review, the importance of public health laboratories was repeatedly demonstrated in the fields of research, control or eradication of communicable diseases, diagnosis, manufacture and control of vaccines, control of food and drugs, environmental sanitation, industrial hygiene, and the evaluation of the whole range of public health services.

For this reason, PAHO paid particular attention to the general development of public health laboratories in both intercountry and country projects. Assistance to laboratories was also given within the framework of integrated public health projects, and in connection with programs in tuberculosis and venereal disease control, malaria and smallpox eradication, poliomyelitis, and rabies and other zoonoses.

PAHO assistance took a variety of forms. One of the major activities was the provision of biological reagents—bacterial and virus strains, antigens, typing sera, standard reagents, etc.—to meet the requirements of the various laboratories. In order to evaluate the control methods applied in different countries and ascertain whether they were applied correctly, assay of various biologicals in reference laboratories was arranged. This service has been particularly important with respect to pertussis, rabies, smallpox, and typhus vaccines and diphtheria and tetanus toxoid. The increase in the provision of biological reagents and reference assays is shown in Table 5.

Laboratory animals (mice, rats, guinea pigs, and hamsters) were supplied directly, together with consultant services, for the improvement of breeding systems.

A variety of training courses were given, with particular emphasis on the laboratory techniques used in the diagnosis of malaria, rabies, poliomyelitis, and virus diseases in general. The principal courses were: medical entomology, São Paulo, Brazil (1959 and 1960); virology techniques, Mexico City, Mexico, and Caracas, Venezuela

TABLE 5. ASSISTANCE TO PUBLIC HEALTH LABORATORIES, 1958-1961

Type of assistance	1958	1959	1960	1961
Specimens of biological reagents provided	285	372	429	411
Vaccines assayed	15	20	25	36

(1958); enteroviruses and tissue culture, Cali, Colombia (1959); rabies diagnosis, Guatemala City, Guatemala (1958). Courses for auxiliary entomological personnel were given in Panama and in El Salvador in 1958. Finally, after having been given twice by a PAHO consultant, the technicians' course at the Adolfo Lutz Institute in São Paulo, Brazil, was firmly established on an annual basis.

Assistance in the general organization of public health laboratories was given in Ecuador (1958), Haiti (1960), and Paraguay (1958-1960). In the field of production and control of biologicals, assistance was given in Argentina (1960), Ecuador (1960), Mexico (1961), and Central America and Panama (1960-1961). Among other special fields covered were techniques of virus diagnosis, in Venezuela (1958) and in Colombia (1958-1960); methods of cell culture, in Colombia (1958) and in Brazil (1961); and standardization of procedures for the serological diagnosis of syphilis, in the Dominican Republic (1959-1961). Other fields of service were the control of food and drugs in Brazil, Chile, and Ecuador (1958); the application of effective methods for the laboratory diagnosis of smallpox in Colombia and of yaws in Haiti (1960); and the selection of adequate equipment in British Guiana (1960) and in Argentina, Brazil, and the Dominican Republic (1961). This assistance was most commonly provided by long- or short-term consultants, but in addition often resulted from the permanent collaboration of regular PAHO staff and responsible national officials.

PAHO also collaborated in the programs for research on enteroviruses in Cali, Colombia, and at the Oswaldo Cruz Institute in Brazil, and in the ARBO virus research of the Carlos Finlay Institute in Colombia and the Mexican Institute of Virology. Fellowships were provided for the training of laboratory supervisors and of specialized professional personnel in various fields of diagnosis.

Among the fields receiving most attention, particularly toward the end of the period under review, was the production and control of biologicals. In addition to the reference laboratory assay noted above, PAHO provided technical collaboration to production laboratories in Argentina, Brazil, Ecuador, Guatemala, and Mexico to promote greater and higher-quality production.



In 1960 a survey of Central America and Panama was made to determine the requirements for immunizing agents and the availability of trained personnel, buildings, equipment, and other facilities necessary for their production. The data were analyzed and made available to the countries to serve as a basis for decision on the most appropriate means of ensuring for the area adequate supplies of biologicals for human and animal use in the future.

With the aid of PAHO consultants, production of pertussis vaccine at the National Institute of Hygiene of Mexico was increased as the first step in a large-scale immunization program. Another consultant advised the National Institute of Microbiology of Argentina on improving and increasing the output of diphtheria toxoid and pertussis vaccine.

The Oswaldo Cruz Institute of Rio de Janeiro was given technical assistance as well as the equipment needed to produce 15,000,000 doses of lyophilized smallpox vaccine per year for the smallpox eradication program in Brazil. Equipment, supplies, technical assistance, and training were provided to two other laboratories in Brazil which are also contributing to the supply of vaccine for the eradication program.

## ADMINISTRATIVE PRACTICES

Pursuant to Resolution XXXV of the X Meeting of the Directing Council, modest but increasing provision was made to furnish consultant services on administrative practices to Member Governments.

Surveys were made of the needs of public health services in this field, and assistance was given in a number of cases. The needs and the requests from Member Countries proved greater than the funds and staff available. Service in this field could be expanded only gradually under the existing possibilities of budgetary allocations.

In addition to the services rendered by the Administrative Methods Officers attached to the Malaria Eradication Program, assistance was given to countries of Zones II, III, and VI. A seminar on administrative practices, held in 1960 at San José, Costa Rica, was attended by delegates from the health services of the countries of Central America and Panama.

## HEALTH EDUCATION

Experience has demonstrated that new approaches to health education problems and the creation or strengthening of health education services can be accomplished most effectively through the provision of sustained consultant

services at the request of interested Governments, combined with a long-term program for training the specialist staff needed. Since 1958 the Organization has directed its efforts toward the recruiting of advisory staff to meet the expressed needs.

The post of Regional Adviser in Health Education was established and filled in 1959. At that time, there were only two other health education posts in the Organization structure.

Table 6 shows the health education posts at the end of the quadrennium 1958-1961, with an indication of those which were filled and those for which recruitment was under way.

Two short-term consultant assignments were completed during the period under review. One of these was for general advisory services in Costa Rica, Guatemala, and British Honduras. The second dealt with health education services in expanded water supply programs in Bolivia, Colombia, and Venezuela.

The health education consultants have been concerned with the training of nationals to serve as health education specialist staff in ministries of health and other agencies. In addition, they have been concerned with the health education training of all health personnel and staff of other agencies who can perform health education functions, such as schoolteachers and agricultural extension agents.

From 1959 through 1961, health education training was provided, with PAHO assistance, in more than 30 courses affecting nearly a thousand health workers and other personnel.

The Organization also recognized the importance of research in health education content and methods in order to improve the effectiveness of these efforts. In 1961 negotiations were initiated in Brazil, Colombia, and Peru to prepare for coordinated research by social and behavioral scientists and public health personnel. Additional studies along these same lines were scheduled for other countries in the near future.

TABLE 6. HEALTH EDUCATION POSTS AS OF 31 DECEMBER 1961

Assignment	Status of post
Headquarters, Regional Adviser	Filled
Zone II, Zone Adviser	Filled
Argentina-7, Public Health Services (El Chaco)	Filled
Cuba-3, Public Health Services	Filled
Haiti-4, Malaria Eradication	Recruiting
Haiti-16, Public Health Services	Filled
Mexico-15, State Health Services	Recruiting
Mexico-22, Public Health Services (Guanajuato)	Recruiting
Venezuela-19, School of Public Health	Recruiting
Surinam-1, Malaria Eradication	Filled
West Indies-15 (Jamaica), Malaria Eradication	Filled

## HEALTH STATISTICS

During the four years under review, posts for statistical consultants were established in each of the six Zones, and country consultants were provided in Colombia, Cuba, and Paraguay.

Training in vital and health statistics was intensified and expanded, with the assistance of the Organization, with the introduction of short annual courses at advanced and specialized levels, the training of students at higher levels, and the diversification of courses to include medical statistics, hospital statistics, medical records, bio-assay, experimental design, and clinical trials.

The number and frequency of regular and special statistical publications increased. Ten-year summaries of reports of notifiable diseases were published in 1958 and 1960. The *Summary of Four-Year Reports on Health Conditions in the Americas, 1957-1960*, has been prepared for presentation to the XVI Pan American Sanitary Conference as a separate volume.<sup>1</sup>

The policy of utilizing advisory committees in order

<sup>1</sup> *Scientific Publication PAHO 64*, 1962.

to plan for collaborative activities in the Americas was adopted. Regional Advisory Committees on Statistics and on the International Classification of Diseases were established.

The seminars, conferences, and advisory committees convened in the period 1958-1961 are summarized in Table 7.

### Research

The first major step in the expanded research activity in health statistics was the launching in 1961 of a study designed to obtain comparable data on causes of death in selected cities of the Americas and serve as a basis for epidemiological research on cancer and cardiovascular diseases. The study, financed by a grant from the U.S. Public Health Service National Institutes of Health, is to last four years and be based on records of 40,000 fatal illnesses in Bogotá and Cali, Colombia; Caracas, Venezuela; Guatemala City, Guatemala; La Plata, Argentina; Lima, Peru; Mexico City, Mexico; New Orleans, U.S.A.; Santiago, Chile; and São Paulo, Brazil. The Pan American Sanitary Bureau serves as planning and coordinating agency and also as the analytical center for the study.

TABLE 7. ADVISORY COMMITTEES, CONFERENCES, AND SEMINARS ON HEALTH STATISTICS, 1958-1961

Type	Meetings and reference publications when available	Place and year
General	Working Group on Education and Training on Medical Certification, <i>Bol Ofic Sanit Panamer</i> 48(6): 487-499, 1960	Caracas, Venezuela, 1959
	Regional Advisory Committee on Statistics (Misc. Pub. No. 61, Pan American Sanitary Bureau)	Washington, D. C., 1960
	Seminar on Vital and Health Statistics for the Countries of Central America and Panama	Panama City, Panama, 1961
	Regional Advisory Committee on the International Classification of Diseases (Sci. Pub. No. 53, Pan American Sanitary Bureau)	Washington, D. C., 1961
Education	South American Conference on the Teaching of Medical Statistics, <i>J Med Educ</i> 34(10): 1045-1049, 1959, and <i>Bol Ofic Sanit Panamer</i> 46(2): 109-117, 1959	São Paulo, Brazil, 1958
	Round Table on the Teaching of Biostatistics in Medical Schools, <i>Health Statistics</i> (PASB) 7(4): 8-12, 1958	San Luis Potosí, Mexico, 1958
	Second Conference of Directors of Schools of Public Health in Latin America, with Special Attention to the Teaching of Biostatistics, <i>Bol Ofic Sanit Panamer</i> 52(3): 187-213, 1962, and Sci. Pub. No. 60, Pan American Sanitary Bureau	Caracas, Venezuela, 1961
Research	Planning Conference for Regional Development of Epidemiological Studies	Washington, D. C., 1961

## Training

Courses in health statistics sponsored by the Organization evolved from the intermediate to the advanced level, and increased in number and in total attendance. Trainees came from all Latin American countries. There was an increasing tendency for courses to be given in schools of public health, rather than independently. The teaching of statistics reached the stage where more advanced training was possible because of the increasing numbers of better-qualified students and teachers.

Training was begun in the field of medical records and hospital statistics, with the concurrent publication in Spanish of a diagnostic index which can be utilized for teaching purposes. A six-month course in hospital statistics was given by PAHO consultants in Buenos Aires in 1961.

### *Intermediate and Advanced Courses*

The School of Public Health in Santiago, Chile, which had begun its statistical program with PAHO assistance in 1953, continued to be the principal international training center in vital and health statistics in Latin America, and graduated 115 trainees in the period 1958-1961. A 15-month course with specialization in biostatistics was developed for physicians and other qualified university graduates, and nine physicians and one nonmedical graduate from five countries were enrolled in the first course in 1961.

Courses of several months' duration in vital and health statistics were also given at the School of Public Health in Mexico City (where PAHO provided fellowships for students from other countries) and by PASB staff at the School of Public Health in Buenos Aires.

The School of Hygiene and Public Health in São Paulo began a special program of statistical training in 1961, with assistance from PAHO and a grant from the United States Public Health Service National Institutes of Health. The program offers an intensive annual six-week course for university faculty members in statistics applied to the health sciences. The most successful students qualify for more advanced courses in the following year. In 1961, 52 nationals of 12 countries, 42 of whom had received fellowships, were graduated. The participation of the School as an international training center in medical statistics is an outgrowth of the South American Conference on the Teaching of Medical Statistics in São Paulo (1958), where the scarcity of teaching personnel in medical statistics was stressed and the utilization of existing training centers in South America recommended.

A number of short courses in advanced and applied statistics were given by PAHO consultants, including a

series of courses in malaria statistics in Kingston, Jamaica, from 1958 to 1961, courses in clinical trials in Argentina, Brazil, and Chile in 1959, a course in bio-assay in Chile in 1960, and a course in the design of experiments in Argentina in 1961.

### *Other Statistical Training*

The Latin American Center for Classification of Diseases was established in Caracas in 1955, with the support of the Organization, for training and for the coordination of activities in the classification of diseases and causes of death in the Americas. In addition to courses given in Caracas, the staff of the Center gave courses in Argentina (1959, 1960, 1961), Colombia (1958, 1960, 1961), the Dominican Republic (1958), Panama (1959), Paraguay (1959), Peru (1959), and Jamaica (1960). In all, 356 persons received training in the period 1958-1961.

## Regional Activities in the Classification of Diseases

A first Regional Advisory Committee on the International Classification of Diseases met in 1961 to outline a regional plan of action for the Eighth Revision of the Classification. Trials were designed and data collected on nutritional, diarrheal, and infectious diseases which— together with data on other diseases yet to be collected— will contribute to the revision of the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*, so as to reflect more closely the classification requirements of health and medical workers in Latin America and lead to the improvement of basic health data.

In 1961 the Latin American Center for Classification of Diseases issued a Spanish-language translation and adaptation of the diagnostic manual for hospital use developed on the basis of the International Classification of Diseases by the United States Public Health Service.

## Publications

In addition to collections of tabular data, PAHO published a number of interpretive studies. *Health in the Americas and the Pan American Health Organization*, published in Spanish and Portuguese as Misc. Pub. No. 53, was originally compiled at the request of the United States Government and provides a statistical summary of the role of the Organization and the health programs and problems of the Americas. *Facts on Health Problems* (Misc. Pub. No. 63) was submitted to the Punta del Este Meeting of the Inter-American Economic and Social

Council in 1961 and highlights health problems in the context of the social and economic development of the Hemisphere.

Ten-year summaries of cases of notifiable diseases were published in 1958 and 1960 as PAHO Scientific Publications Nos. 38 and 48. The diagnostic index prepared by the Latin American Center for Classification of Diseases appeared in 1961 as Scientific Publication No. 52. Earlier, a short list of categories from the *Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death* was issued as Scientific Publication No.

34. A Spanish translation of the *International Sanitary Regulations* and a procedural manual for the Inter-American exchange of reports of cases of tuberculosis were published in 1959, and a guide for reporting on the *Aedes aegypti* eradication campaign appeared in 1960.

The *Weekly Epidemiological Report* continued with an expanded mailing list and with an increase to 13 in the number of reportable diseases for which weekly data were published. Publication of the bilingual Spanish-English quarterly *Health Statistics* continued throughout this period.

### III. ENVIRONMENTAL SANITATION

In no other period in the history of the Pan American Health Organization has there been such a growth of environmental sanitation activities as during the four years 1958-1961.

The Act of Bogotá (1960) recognized the importance of housing and sanitation in social and economic development. The creation of the Inter-American Development Bank made possible a great increase in the international financing of sanitary works through long-term, low-interest loans.

The Charter of Punta del Este (1961) not only set forth the general objective of improving sanitation and the health of the peoples of Latin America, but also set specific goals for urban and rural water supply and sewage disposal over a 10-year period.

#### WATER SUPPLY

Resolution WHA11.27 of the Eleventh World Health Assembly (1958) requested a comprehensive review of the work and achievements of WHO in the field of environmental sanitation, with particular reference to water supply and disposal of human wastes, and called for proposals to further activities in this field, including ways of financing.

Resolution WHA12.43 of the Twelfth World Health Assembly and Resolution XVI of the XI Meeting of the PAHO Directing Council (1959) established that community water supply should be given priority in the programs of both Organizations; created a Special Water Fund to permit greatly expanded activity; and recognized that attention must be given to the financial and administrative aspects of water supplies if the public health objectives are to be attained.

The contributions of the Governments of the United States of America and Venezuela, and the pledge of the Government of Uruguay, to PAHO's Special Community Water Supply Fund made possible the extensive program of the Organization in community water supplies in Latin America.

In the first year of the quadrennium, both PAHO and WHO convened advisory committees which set forth rec-

ommendations to guide the activity of both Organizations. The interest of the Governments of this Region in improving water supply was shown by the submission of requests which resulted in the approval of nearly \$65,000,000 in water loans by the Inter-American Development Bank in its first year of activity (1961) and of nearly \$10,000,000 by the Export-Import Bank, with many times this amount provided by national Governments.

Statistical information collected by PAHO in 1958 on the availability of water in the Americas provided basic documentation on the water supply problem in the Region. Water service was defined as the provision in the home, or in the immediately adjacent courtyard, of a water connection to a community piped water supply. In these terms, out of 75 million people in cities with more than 2,000 population, 29 million were without water service in 1958. Details by country are shown in Figure 2. Almost 50 per cent of the people in cities of 10,000 to 50,000 population were without such service, and in cities of 2,000 to 10,000 more than 70 per cent were not served. Of the 107 million people living in rural areas, far more than 70 per cent were without water service.

Significantly, of 16 countries of Latin America with data available regarding mortality of children 1 through 4 years of age, in 1956 diarrheal diseases were the leading cause of death in 11 countries and among the first five principal causes in the remaining five. The clear-cut relationship between adequate water supply and reduction of enteric infections has repeatedly been demonstrated.

Further studies made by PAHO in several countries revealed that administrative, organizational, and financial problems were the leading causes of the low pace of construction or expansion of water facilities. Traditional central government financing of public works, with no contribution to amortization from the beneficiaries through payment for water used, and deficient administration and operation of existing facilities largely explain why in most countries the construction of new water supplies lagged behind the growth of population.

The Organization since 1959 has cooperated with the Governments of the Americas by providing technical advisory services and educational and training facilities to achieve the following objectives: To establish in each country an adequate organization to plan, supervise, and

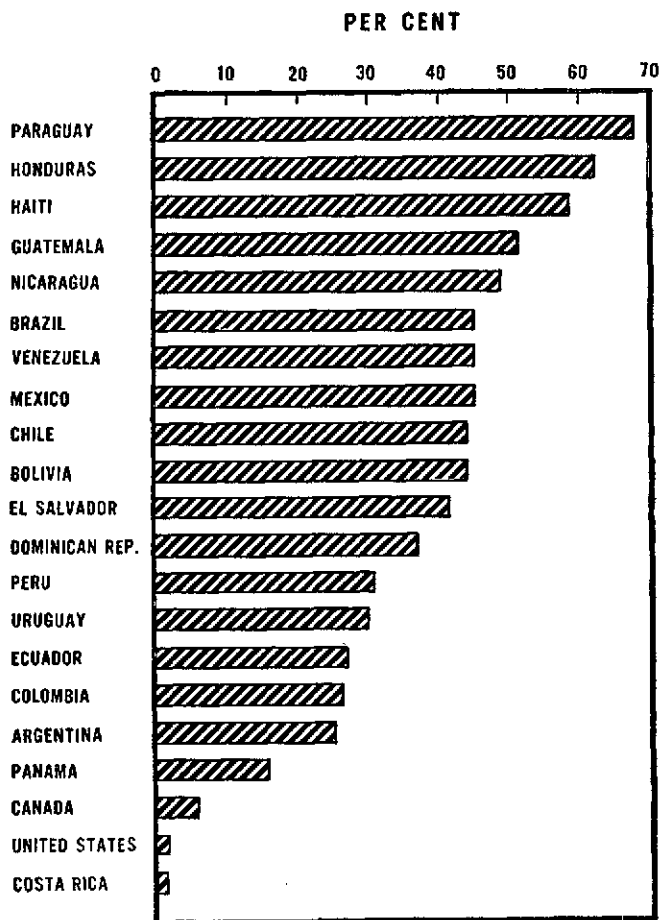


FIG. 2. PER CENT OF POPULATION WITHOUT WATER SERVICE IN CITIES WITH 2,000 OR MORE INHABITANTS IN COUNTRIES OF THE AMERICAS, 1958.

manage water supply programs and to adopt sound utility and management operations; to place all water supply programs on a firm financial basis by establishing realistic water-rate structures based on sound and businesslike practices; to raise water supplies to a competitive position in the capital market by inspiring confidence and offering security, in order to make it possible to obtain local and international funds; to prepare and train engineers in the specialties of technical design, construction, operation, and management of water supply systems.

Reinforcing this program of PAHO is the growing recognition that general social and economic development in the Americas cannot be attained without solving at the same time the most pressing health problems. The Charter of Punta del Este called for the provision of adequate water supply and sewerage and excreta disposal, in the next 10 years, for at least 70 per cent of the urban population and 50 per cent of the rural population, and urged the mobilization of all possible international and national sources of funds to accomplish this goal.

During the last four years, increasing recognition has been given by the international credit organizations to water supply and sewerage projects. In this expansion phase, the Organization has cooperated with Member Governments and international lending agencies so as to assist in the process of developing projects which can qualify for financing. The Inter-American Development Bank, for example, began its activities in February 1961 by granting its first loan to the city of Arequipa, Peru, for the expansion of water and sewerage systems.

By the end of 1961 Bolivia, Costa Rica, El Salvador, Honduras, and Panama had enacted new legislation creating national or central organizations to deal only with water and sewerage programs, and giving them the authority to establish new methods for self-financing through rational rate structures. It is expected that similar legislation will shortly be approved in two more countries, and that in three others a restructuring of water activities will be undertaken.

Colombia and Venezuela further developed existing organizations, particularly with respect to long-range planning, administration, financing, and rate structures. Chile, Ecuador, Guatemala, Mexico, and Uruguay have developed projects for the improvement of certain large city water supplies, including management and financing. British Honduras and the islands of Grenada and St. Lucia have begun activities to improve their water programs and Jamaica has completed a planning study for improvement of the island's water supplies.

In 1960 and 1961 PAHO provided technical assistance to all Member Governments but one, in matters related to the planning, design, financing, administration, and management of water systems, together with training or educational short courses and seminars on administration, finance, and design. Details are given in Table 8.

### Consultant Services

Services of consultants for periods exceeding six months were provided to Colombia, Cuba, Mexico, Peru, and Venezuela, and short-term consultant services in water supply organization and management were provided to Bolivia, Colombia, Costa Rica, El Salvador, Haiti, Honduras, Panama, Peru, and Venezuela.

Consultant services in water supply financing, water rates, and accounting were provided to Colombia, Guatemala, Haiti, Peru, and Venezuela.

Technical engineering consultant services were provided to Chile, Colombia, Ecuador, Guatemala, Honduras, Peru, Venezuela, and British Honduras.

Consultants in hydrology, drafting, design, and planning and/or report preparation were provided to Brazil,

TABLE 8. SERVICES PROVIDED TO COUNTRIES IN CONNECTION WITH THE WATER SUPPLY PROGRAM, 1959-1961

Country or other political unit	Advisory services			Travel grants	Bank-loan requests prepared	Persons attending courses and seminars
	Technical and design	Administration and financing	Water rates			
Argentina	-	-	-	2	-	12
Bolivia	-	1	-	-	-	9
Brazil	-	-	-	-	-	33
British Honduras	1	1	-	-	-	-
Chile	1	1	-	-	-	12
Colombia	1	2	1	2	2	17
Costa Rica	-	2	-	-	-	5
Cuba	1	-	-	-	-	2
Curacao	-	-	-	-	-	1
Dominican Republic	-	-	-	-	-	4
Ecuador	1	-	-	-	-	7
El Salvador	2	1	-	-	-	5
Guatemala	2	-	-	-	-	10
Haiti	4	1	1	-	1	6
Honduras	1	1	-	-	-	6
Mexico	1	-	-	-	-	34
Nicaragua	-	-	-	-	-	6
Panama	-	2	-	-	-	2
Paraguay	-	-	-	-	-	10
Peru	1	1	-	2	1	11
Uruguay	-	-	-	1	-	12
Venezuela	2	2	1	-	1	15
West Indies	-	-	-	-	-	8
Total	18	15	3	7	5	227

- None.

Colombia, Haiti, and Peru in connection with bank-loan submissions.

Consultant services in public information and education related to water supplies were given to Colombia, Costa Rica, Peru, and Venezuela.

### Seminars and Short Courses

Three courses on the administration and financing of urban water supplies were organized by PAHO. The first (1960) was given in the United States and attended by all PAHO and AID (ICA) sanitary engineering consultants serving in the Latin American countries. The second (1961), at the University of Mexico, was attended by 41 water supply engineers and officials of the Central American and Caribbean countries and Mexico. The third (1961), at the University of São Paulo, was attended by 65 engineers and water supply officials from South America.

PAHO also gave special attention to new sources of revenue that can be made available not only for operation and maintenance expenses but for the amortization and

interest costs on the capital invested. Major emphasis was given to the revision and modification of antiquated and non-rational water-rate structures which frequently have not provided sufficient revenue even for current operating costs of the systems.

To this end PAHO organized a seminar at Montevideo, Uruguay (1960), to study and recommend new approaches to water-rate practices in Latin America. This seminar was attended by 72 water supply engineers and managers from 19 American countries and three territories of the Caribbean. The conclusions of the seminar were published in the manual *Tarifas de Agua*.<sup>1</sup>

To overcome the lack of experienced design engineers in several of the countries, PAHO organized a three-month pilot course devoted to the design of urban water supplies in Mexico (1961). It was attended by 30 design engineers from Mexico, Central America, and the Caribbean. It is expected that the course will be repeated yearly in the future to help train more national engineers in the design of water systems.

<sup>1</sup> *Scientific Publication PAHO 54*, 1961.

PAHO has also provided fellowships to national officials for attendance at short courses on ground water—three at the University of Minnesota and one at the University of Costa Rica. These courses have been valuable in training national personnel in the development of ground water as a source for public supplies. A total of 38 engineers, sanitarians, and well-drillers were sent by PAHO to these three courses.

Details of attendance, by countries, at educational and training activities related to the water supply program are given in Table 8.

## Loans for Water and Sewer Projects

With the creation of the Inter-American Development Bank (IADB) and the International Development Association, two institutions exist which make loans under favorable conditions for water supplies. The Inter-American Development Bank has been particularly active in the field of water loans, as is shown in Table 9. It was estimated that nearly four million people would be supplied with water service as the result of these loans.

PAHO assisted Governments in the preparation and presentation of loan requests through the services of special consultants and field and headquarters personnel. The Organization assigned an engineer full time for permanent liaison with the Bank. The liaison engineer and other specialists at PAHO Headquarters assisted national officials and provided consultation to the Bank's central

offices in Washington in connection with water-loan requests.

IADB loans provide for low interest rates and long repayment periods and in most cases it is believed that amortization and interest as well as operation and maintenance costs of the water supply systems can be paid from water revenues. To accomplish this will require changes in rate structures and policies and extensive reform of organizational and management practices.

Other international credit organizations, particularly the Export-Import Bank and the Development Loan Fund, also granted loans for the construction of new water supplies and the acquisition of equipment in the past four years. These loans amounted to approximately 40 million dollars and include those to Colombia, Costa Rica, Ecuador, Mexico, Paraguay, and Uruguay.

## Rural Water Supply Programs

Approximately 70 per cent of the 107 million people living in the rural areas of the Americas were without water service in 1958. It was believed that this percentage still applied in 1961, despite the efforts made in the last four years to improve the situation. The problem was recognized in the Charter of Punta del Este, which called for a program to provide water in the next 10 years for at least 50 per cent of the population living in the rural areas.

TABLE 9. LOANS APPROVED BY THE INTER-AMERICAN DEVELOPMENT BANK, POPULATION TO BE SERVED, AND LOCAL CONTRIBUTIONS FOR WATER SUPPLY AND SEWERAGE SYSTEMS, FEBRUARY-DECEMBER 1961

Country	City	Type of service	Population to be served <sup>a</sup>	Loan (U.S. dollars)	Local Contribution (U.S. dollars)
Brazil	Salvador (Bahia)	Water	340,000	4,120,000	2,000,000
Chile	Concepción y Talcahuano	Water supply	220,000	3,500,000	1,500,000
Colombia	Cali	Water	210,000	2,454,000	1,660,000
	Cartagena	Water and sewerage	130,000	5,969,000	5,000,000
	Cúcuta	Water and sewerage	90,000	5,900,000	1,160,000
	Medellín	Water	550,000	6,048,000	4,000,000
El Salvador	39 cities	Water and sewerage	300,000	4,800,000	2,530,000
Guatemala	Puerto Barrios	Water	40,000	175,000	90,000
Peru	Arequipa	Water and sewerage	240,000 <sup>b</sup>	3,900,000	2,100,000
Uruguay	Montevideo	Water	800,000	5,743,000	7,100,000
Venezuela	57 cities (between 5,000 and 10,000 pop.)	Water	300,000	10,000,000	10,000,000
	330 cities (less than 5,000 pop.)	Water	400,000	10,000,000	10,000,000
Total			3,620,000	62,609,000	47,140,000

<sup>a</sup> Population estimated to be served either in 1970 or 1980.

<sup>b</sup> Population estimated to be served in the year 2000.



PAHO assistance to countries in this field was also given within the framework of the integrated health projects. Rural water supplies formed an important part of the demonstration or pilot programs in Argentina, Colombia, the Dominican Republic, Guatemala, Honduras, Mexico, Panama, Paraguay, Uruguay, and the Caribbean area. In Haiti and Peru arrangements were completed for the initiation of rural water supply activities in 1962. In El Salvador a national rural water supply program was in operation during the four years under review. In addition, UNICEF has supplied well-drilling equipment, hand and mechanical pumps, chlorinators, equipment for workshops, and vehicles for transportation of sanitation materials and personnel.

Chile, Colombia, and Venezuela developed national plans for the provision of water to rural areas and small communities with the intention of presenting such programs for consideration by the Inter-American Development Bank, and the Venezuela program was approved by the Bank.

## SEWERAGE AND EXCRETA DISPOSAL

Figure 3 shows the situation in 1958 with regard to population in the American countries lacking sewerage facilities in urban areas or proper means of excreta disposal in rural areas.

Although first priority in competition for funds has been given to water supply, Governments were advised to develop plans for adequate sewage disposal simultaneously with plans for water supplies, despite the fact that for reasons of cost such facilities could not always be installed at the same time. Plans for new construction or the expansion of sewerage systems in conjunction with water were approved by the Inter-American Development Bank for Cartagena and Cúcuta, Colombia, for Arequipa, Peru, and for 39 small cities in El Salvador. PAHO gave assistance in technical or administrative matters to a number of countries in the development of these projects, and in the case of Medellín, Colombia, the Organization was asked to assist in establishing a new rate system for sewer services.

Programs to encourage the development of methods for individual excreta-disposal facilities for the rural population continued in most of the countries. PAHO continued its assistance in connection with the integrated health projects and other sanitation programs in demonstration areas in Argentina, Colombia, the Dominican Republic, Guatemala, Honduras, Mexico, Panama, Paraguay, Uruguay, and the West Indies. UNICEF actively supported these projects.

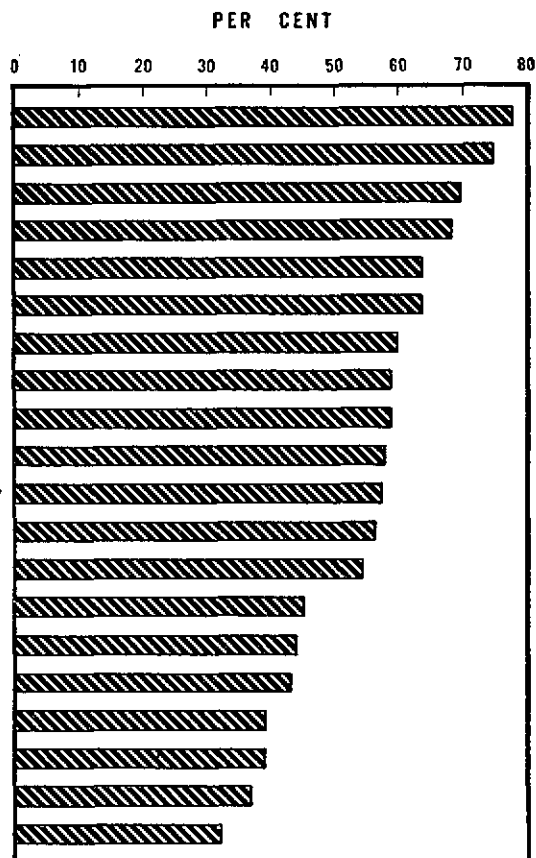


FIG. 3. PER CENT OF POPULATION WITHOUT ADEQUATE SEWERAGE OR EXCRETA DISPOSAL SYSTEMS IN RURAL AND URBAN AREAS IN COUNTRIES OF THE AMERICAS, 1958.

## GARBAGE COLLECTION AND REFUSE DISPOSAL

This subject was selected as the topic for the Technical Discussions at the XII Meeting of the PAHO Directing Council (1960). PAHO provided advisory services in this field to Bermuda, Colombia, Curaçao, Jamaica, Peru, Trinidad and Venezuela.

PAHO also gave advisory services in the solution of garbage disposal problems in connection with integrated health projects. In the city of Resistencia, El Chaco, Argentina, a very successful sanitary landfill, in operation in the last three years, demonstrated the practicability of this method as a solution for the garbage disposal problem in middle-size cities with land available for filling. In 1961 the Ministry of Health of Venezuela prepared a program to help solve the garbage disposal problems of its small rural communities through the participation of the people of the localities concerned.

As in the case of water and sewage disposal systems,

efficient administration and management techniques, as well as adequate engineering and mechanical staffs, are a primary requisite for good results in the task of garbage collection and disposal and in street cleaning. PAHO continued to emphasize these fundamental points.

## **FOOD SANITATION**

Until 1961 PAHO provided assistance through integrated health projects on specific problems and in the preparation of personnel in Argentina, Colombia, the Dominican Republic, El Salvador, Guatemala, Honduras, Panama, Paraguay, and certain islands of the West Indies.

In 1961 a food sanitation consultant was assigned by PAHO to study and prepare a draft of a model Latin American food sanitation code which could be utilized in the preparation of legislation by the countries of the Region. It was expected that the first draft of the proposed code would be ready in 1962.

## **INDUSTRIAL HYGIENE**

Until mid-1961 the Organization limited its activities in the field of industrial health to the provision of fellowships and to short-term consultation. In June 1961 the Organization appointed a Regional Consultant in Industrial Hygiene.

In Peru, PAHO assisted in planning the transfer of the Institute of Occupational Health to the Ministry of Health. The Organization also aided the development of an Institute of Occupational Health in Chile, which is to serve as a research and training center not only for Chile but for other interested Latin American countries as well. In connection with the Alliance for Progress programs and within the framework of the Chilean 10-year economic plan, PAHO also assisted the National Health Service to prepare a 10-year program in industrial hygiene.

## **HOUSING**

A housing consultant from WHO Headquarters visited Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Venezuela in 1961 to obtain information for the development of the WHO world program in housing.

The implications of the Charter of Punta del Este for the housing programs of the Americas were considered by a PAHO Advisory Committee on Environmental Sanitation (1961).

The Organization collaborated with the Pan American Union in providing assistance to the Inter-American Housing and Planning Center (CINVA) at Bogotá, Colombia, and has worked out plans for augmented program collaboration.

During 1961 PAHO participated in the work of the World Health Organization Expert Committee on the Public Health Aspects of Housing. An interregional planning group on housing was arranged for April 1962 to prepare the agenda for an interregional seminar on public health aspects of housing in 1963.

## **OTHER ENVIRONMENTAL SANITATION SERVICES**

### **Education and Training**

During the past four years PAHO continued its efforts to assist Governments in the training of sanitary engineers and in the improvement and extension of the teaching of sanitary engineering subjects at schools of civil engineering. A study of engineering schools in Latin America made by PAHO in 1960 and 1961 showed that there were 83 schools, with 81 providing undergraduate instruction of civil engineers, three offering postgraduate training as well, and two limited to postgraduate work. Two universities had undergraduate faculties of sanitary engineering.

A seminar to discuss the results of the survey and to determine the most desirable organization and methods to improve the teaching of sanitary engineering, sponsored by PAHO and the Government of Peru, met in Lima in July 1961 and was attended by deans and professors from engineering and public health schools in 16 Latin American countries.

In 1959 a consultant was sent to survey existing facilities for graduate training of engineers in Latin America. At the request of certain schools, additional assistance was provided in 1960 and 1961.

PAHO has encouraged and assisted different countries in the development of projects related to increasing the number of and the quality of training for sanitary engineers, for submission to the United Nations Special Fund. A request was completed and presented to the Special Fund in 1961 by the National University of Colombia. Requests with PAHO assistance were also initiated in 1961 by the National University of Mexico, by the Univer-

sity of Buenos Aires in Argentina, and by the schools of engineering of five universities of Venezuela.

During the four years, PAHO gave assistance to the School of Sanitary Engineering and the School of Public Health in Mexico, and to the courses in sanitary engineering at the Schools of Public Health in Santiago, Chile, and São Paulo, Brazil. PAHO has been cooperating in the preparation of faculty for the School of Sanitary Engineering of the University of Buenos Aires, Argentina, through fellowships for study in the United States and through consultation on the revision of curriculum and programs. Assistance was also given to the newly-created School of Sanitary Engineering at the University of El Valle in Cali, Colombia.

PAHO engineers and sanitarians assigned to integrated health projects gave assistance to national and provincial authorities in the organization and development of courses for the preparation of sanitary inspectors in Argentina, Colombia, the Dominican Republic, El Salvador, Guatemala, Honduras, Panama, Paraguay, and Uruguay. In the last four years at least one course per year has been conducted in each country. Seven courses for the training of waterworks operators were conducted during the past four years in the Antilles, Central America, and South America, for which PAHO provided consultant services, laboratory equipment, and materials. The first South American course, held in Montevideo, Uruguay, was attended by personnel from the water organizations of Argentina, Chile, Paraguay, and Uruguay.

### *III Seminar on Sanitary Engineering for Central America and Panama*

PAHO participated in the planning and organization of this seminar, which was held at Tegucigalpa, Honduras,

in November 1961. The seminar was attended by leading engineers of the Central American countries and Panama, and the discussions centered primarily on the progress of water supply programs and the participation of health ministries in the planning and promotion of such programs. PAHO collaborated in the seminar by providing assistance through zone and field engineers and furnishing a certain number of fellowships.

### *Water Pollution Seminar*

In 1960 three consultants were provided to assist the Seminar on Pollution of Sources of Water Supplies, sponsored by the Government of Brazil and attended by several hundred engineers from Brazil and other countries of the Region.

### **Manual of Sanitation Standards for Tourist Facilities**

At the request of the Organization of American States, PAHO completed in 1960 the preparation of a *Manual of Recommended Sanitation Standards for Tourist Facilities*.<sup>1</sup> The Manual was published in English and Spanish and distributed to ministries of health, tourist agencies, and sanitary engineers engaged in the planning and construction of sanitation works. The main purpose of the Manual is to help both public officials and persons engaged in the operation of tourist establishments to improve sanitation of these facilities.

<sup>1</sup> OAS Publication 614-E-6178, 1960.

## IV. ERADICATION OR CONTROL OF DISEASES

### MALARIA ERADICATION

In the quadrennium 1958-1961, malaria eradication in the Americas reached the status of a hemisphere-wide effort. The period began with only 18 countries or other political units in the attack phase. During these years coverage was extended to new areas of Argentina, Brazil, and British Guiana and total coverage began in Bolivia, Colombia, the Dominican Republic, Honduras, Nicaragua, Dominica, Jamaica, Surinam, and Trinidad and Tobago. By the end of 1961 all countries in the Americas with malarious areas had an active malaria campaign under way. Eradication had been shown to be technically feasible; what remained was to prosecute the attack vigorously to achieve this end.

#### Trend of Eradication Operations

Table 10 shows the mid-1961 population of the originally malarious areas of the Americas and the trend from 1958 to 1961 in number of houses sprayed, slides examined, and per cent of slides positive. The over-all picture was one of extensive spraying operations, increasing case-finding activity, and—with the exception of some problem countries and areas—a drastic decline in positivity of the slides examined. With the exception of Cuba and Haiti, which were in the preparatory phase, the attack phase was well developed by 1961, and increasing areas were entering the consolidation phase, with spraying and other routine antimalaria measures suspended and increasing emphasis placed on surveillance through passive and active case detection. The first entry in the registry of areas where malaria had been eradicated was made in 1961, and the XIII Meeting of the PAHO Directing Council took note of the entry in the registry of approximately 157,500 square miles of the territory of Venezuela, on the basis of the special study made by the Organization and the respective report.

#### Operational Problems and Solutions

Vector resistance was first noted in the Americas when *Anopheles albimanus* was found resistant to dieldrin in

El Salvador in June 1958. Subsequent tests in this and other countries showed widespread resistance to dieldrin and occasional resistance to DDT, or double-resistance. By 1961 eradication campaigns had shifted to major reliance on DDT.

Insecticide resistance and outside-resting and outside-biting habits were studied by an entomology team in Bolivia and El Salvador, by research under contract at the Johns Hopkins University, and by an epidemiology team. In areas of resistance to DDT and dieldrin, malathion was tested. Where there was a rapid rate of new construction, the assignment of permanent spraymen or mobile crews to spray new structures between regular cycles was tried with success. Where residual spraying with imogocides was of limited effect, larviciding and mass drug treatment were introduced.

With the exception of problem areas such as the highly malarious lowlands of El Salvador, failure to stop transmission was due more often to inadequate spraying and administrative problems than to inherent technical difficulties. While the attack phase was prolonged beyond the anticipated three-year period in many countries, the prognosis was generally favorable, and it was expected that the attack begun in the quadrennium 1958-1961 would terminate successfully in the period 1962-1965.

#### Evaluation Operations

In many public health programs evaluation can only be undertaken after completion of a project, but the organization of malaria eradication in the Americas makes provision for continuous self-evaluation which provides a record of the success of operations in terms of the percentage of slides found positive. The graphs of Figure 4 illustrate some of the findings.

The first tendency to be noted is the rapid rise in slides examined to levels approximating one per cent of the population at risk per month, which is considered the minimum necessary for sound evaluation. The graphs for Bolivia, Guatemala, and Mexico reflect the general success of eradication work in countries where the persistence of transmission in problem areas has kept the positivity index from reaching zero. The graph for El Salvador

TABLE 10. MALARIA ERADICATION OPERATIONS IN COUNTRIES WITH PAHO PROJECTS, 1958-1961

Country or other political unit and project number	Population at risk, 1961 (thousands)	Number of sprayings				Evaluation operations							
		1958	1959	1960	1961 <sup>a</sup>	Slides examined			Per cent positive				
						1958	1959	1960	1961 <sup>a</sup>	1958	1959	1960	1961 <sup>a</sup>
Argentina-8	1,439	-	57,995	173,008	120,030	-	21,868	96,629	110,905	-	5.00	2.11	3.84
Bolivia-4	1,250	71,014	286,827	301,995	212,744	3,426	83,762	87,775	120,263	7.50	2.35	1.02	0.51
Brazil-24	31,104	-	-	-	792,450 <sup>b</sup>	-	-	16,988 <sup>c</sup>	286,163 <sup>b</sup>	-	-	14.16	13.33
Brazil-41 (São Paulo)	2,231	-	-	873,746	640,935	-	-	114,622	159,202	-	-	7.24	3.98
Colombia-5	10,188	585,334	2,394,957	2,355,434	1,637,193	-	329,288	509,920	424,100 <sup>d</sup>	-	1.27	1.65	3.10
Costa Rica-2	409	114,881	112,162	131,942	101,627	36,801	52,536	67,643	72,045	5.81	3.61	2.96	2.02
Cuba-5	1,836	-	-	-	-	-	-	28,791	68,462	-	-	5.64	3.59
Dom. Republic-2	2,552	192,084	393,896	309,716	204,100	15,513	28,721	20,337	19,913	13.57	13.03	27.34	11.73
Ecuador-14	2,227	294,662	440,477	349,331	663,670	65,521	98,977	119,562	175,666	6.75	5.95	7.60	4.72
El Salvador-2	1,885	474,660	556,360	581,562	573,044	51,615	71,295	75,381	98,691	18.12	24.58	13.28	10.75
Guatemala-1	1,770	364,533	631,998	697,557	636,965	62,119	108,048	129,741	173,784	20.65	7.31	2.61	2.00
Haiti-4	3,276	-	-	-	-	-	-	-	-	-	-	-	-
Honduras-1	1,409	-	236,963	496,758	482,116	-	39,947	109,677	132,894	-	10.74	5.03	2.68
Mexico-53	18,592	5,292,683	6,562,593	5,918,572	2,174,471	403,573	821,598	1,212,770	1,233,857	0.82	0.39	0.29	0.69
Nicaragua-1	1,486	-	424,575	469,554	412,498 <sup>d</sup>	-	38,966	74,074	85,065	3.71	4.81	10.16	8.23
Panama-2	1,033	161,346	142,848	115,948	109,182	91,933	78,661	77,099	73,971	6.60	6.38	5.79	4.84
Paraguay-1	1,521	154,103	157,723	165,576	42,864 <sup>e</sup>	14,359	11,379	46,923	26,986 <sup>b</sup>	3.66	5.63	2.44	5.69
Peru-5	3,019	478,696 <sup>f</sup>	612,869	682,491	411,734	-	149,791	349,780	336,286	-	2.85	1.12	0.78
British Guiana-5	60	15,294	15,603	-	10,426	1,520	3,754	3,873 <sup>g</sup>	16,889 <sup>g</sup>	3.36	4.64	6.79	1.37
British Honduras-1	93	25,880	22,526	31,008	30,656	4,374	11,307	13,307	11,813	6.58	9.01	1.47	0.19
Dominica, WI-2	10	-	3,442	3,923	3,784	-	2,801	6,151	8,417	-	1.64	0.10	0.02
French Guiana-2	32	12,300	13,000	-	13,095	717	1,823	13,343 <sup>c</sup>	1,197 <sup>b</sup>	2.09	0.88	1.11	2.76
Grenada, WI-2	37	16,557	15,862	1,274 <sup>h</sup>	-	10,799	5,695	8,233	10,504	0.48	0.04	0.00	0.00
Guadeloupe-1	186	44,927	33,517	-	-	6,866	10,294	11,530 <sup>o</sup>	20,444	0.04	0.00	0.02	0.00
Jamaica-2	1,045	271,514	392,457	476,866	146,036 <sup>i,j</sup>	56,266	39,726	184,534	204,670 <sup>l</sup>	0.36	0.93	0.07	0.01
St. Lucia, WI-2	72	27,940	15,347 <sup>k</sup>	-	-	6,838	13,268	12,931	15,014	0.56	0.02	0.00	0.00
Surinam-1	185	43,577	92,468	72,444	32,831	23,137	46,687	45,396	29,887	9.89	5.79	2.20	1.62
Trinidad & Tobago-3	831	117,678 <sup>n</sup>	149,398	241,685	218,926 <sup>l</sup>	26,501 <sup>a</sup>	101,400	109,000	88,237	1.24	0.10	0.01	<sup>m</sup>

- None.  
 --- Data not available.  
<sup>a</sup> January-October.  
<sup>b</sup> January-December.  
<sup>c</sup> January-September.  
<sup>d</sup> 2,018 sprayings with malathion not included.  
<sup>e</sup> Operations suspended in March.  
<sup>f</sup> November 1957-October 1958.  
<sup>g</sup> January-November.  
<sup>h</sup> Entered consolidation phase in February.  
<sup>i</sup> January-August.  
<sup>j</sup> Estimated.  
<sup>k</sup> Entered consolidation phase in October.  
<sup>l</sup> 202 sprayings with "baytex" not included.  
<sup>m</sup> One imported case.

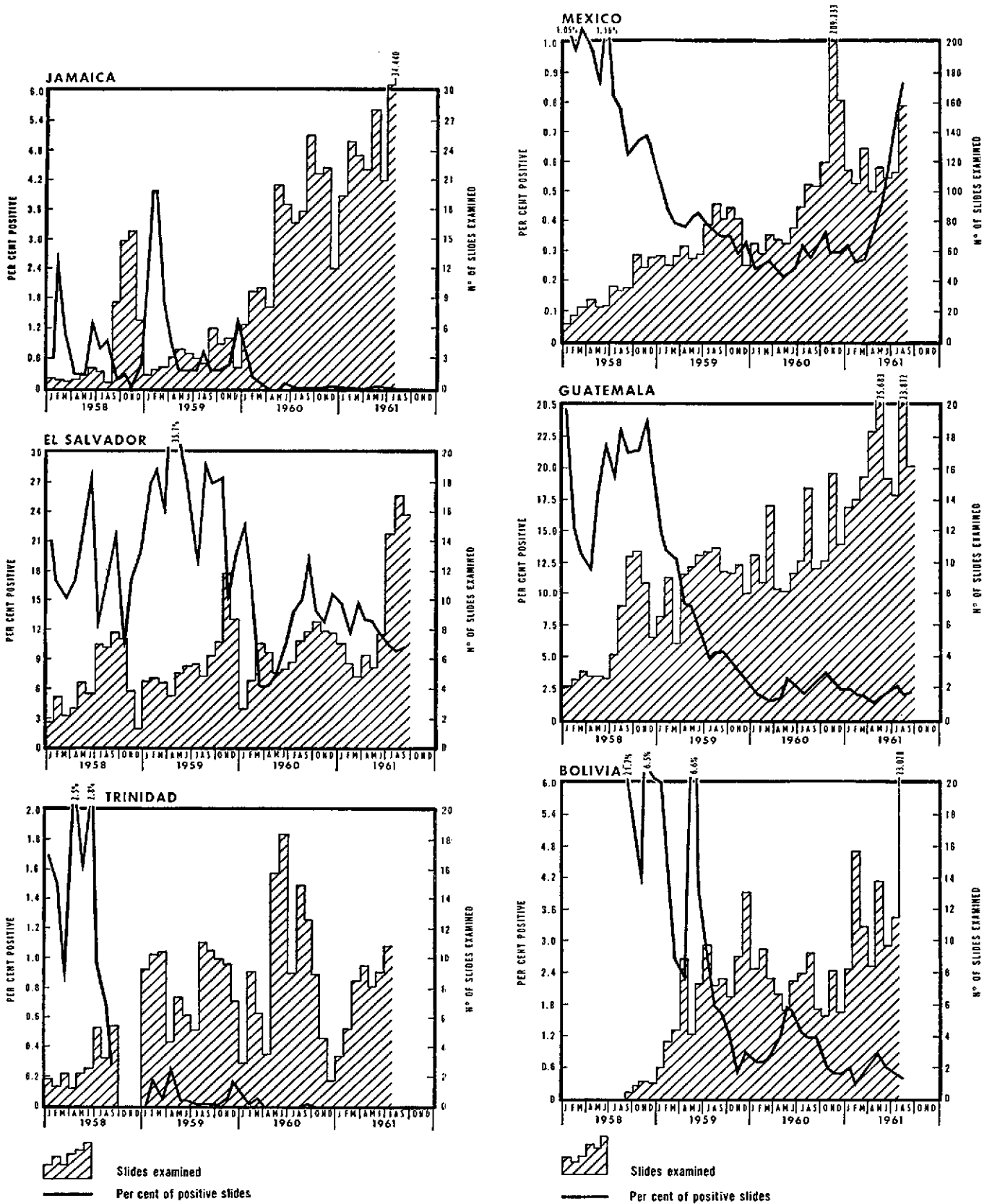


FIG. 4. SLIDES EXAMINED IN SELECTED MALARIA ERADICATION CAMPAIGNS IN THE AMERICAS AND PER CENT POSITIVE, 1958-1961.

reflects continuing transmission in the country that has the greatest technical problem in the Americas. The graph for Jamaica shows the rapid decline of malaria after the shift from dieldrin to DDT in 1959, while that for Trinidad shows a striking initial reduction in positivity, with the last positive case found in September 1960.

### First Successes

In addition to the entry in the newly-established register of eradication of parts of Venezuela with a population of 4.3 million, interruption of transmission was claimed in other areas which were not yet formally registered. Table 11 shows the distribution of population in the originally malarious areas of the Americas, by phase of eradication, from 1958 through 1961. The fluctuation in areas in the attack phase arises from the fact that the attack began in some areas and ended or was temporarily suspended in others during the period under review. A slow but steady growth can be seen both in the areas where eradication was claimed and in the areas in which spraying was suspended and which then entered the three-year period of surveillance before eradication could be claimed. Many of the areas listed in the consolidation phase promised to become areas with eradication registered by the end of the next quadrennium.

### Training

An active training program involving study fellowships, special training courses, and technical meetings was undertaken in the period under review. Table 12 lists the border meetings which were promoted by PAHO to stimulate coordination of the eradication effort between neighboring countries, from 1959 through 1961. No meeting was held in 1958. In addition, the directors of malaria eradication services of Central America, Mexico, and

TABLE 12. BORDER MEETINGS TO COORDINATE MALARIA ERADICATION ACTIVITIES, 1959-1961

Year	Countries concerned
1959	Colombia and Ecuador El Salvador and Guatemala Colombia and Peru
1960	Surinam and French Guiana El Salvador, Guatemala, and Honduras Mexico and Guatemala Argentina and Bolivia Colombia and Venezuela Peru and Bolivia
1961	Mexico and Guatemala Argentina, Brazil, and Paraguay

Panama met annually to discuss problems of common interest. National and international officials were trained at centers in Mexico, Brazil, Venezuela, and Jamaica. Details of fellowships are shown on page 64. A seminar on epidemiological evaluation held in Brazil (1959) provided far-reaching stimulus. Training of the skilled personnel needed for eradication campaigns in the Region of the Americas was largely completed by 1961.

### Cost of Eradication

In the four years under review, more than \$5,000,000 contributed by PAHO and \$100,000,000 from national Governments and other sources were devoted to the eradication of malaria in the Americas. It is estimated that \$9,000,000 from PAHO and at least \$120,000,000 from national Governments and other sources will be needed for the quadrennium 1962-1965. If the eradication program proceeds according to schedule most areas in the attack phase in 1958-1961 will have interrupted the transmission of malaria by 1965, and far lower total expenditure (though a necessarily high rate in remaining problem areas) will be necessary thereafter.

TABLE 11. POPULATION OF MALARIOUS AREAS IN COUNTRIES WITH PAHO PROJECTS, 1958-1961, BY PHASE OF ERADICATION CAMPAIGN

(midyear population in thousands)

Phase of eradication campaign	1958	1959	1960	1961
Attack phase	44,634	55,661	53,150	38,700
Consolidation phase	1,157	8,664	9,728	17,665
Maintenance phase (eradication claimed)	3,835	3,927	4,368	5,156

## YELLOW FEVER CONTROL AND AËDES AEGYPTI ERADICATION

### Yellow Fever Control

The distribution of yellow fever in the Americas in the quadrennium 1958-1961 reveals what may be called the "hard core" of jungle yellow fever in the New World

(see Figure 5). The last reported case of urban yellow fever occurred in Trinidad in 1954. Cases were diagnosed by examination of specimens of human liver obtained by viscerotomy in each of the four years in Bolivia, Brazil, Colombia, Peru, and Venezuela. In addition, two non-fatal cases—apparently sporadic—occurred in the swamp forests of eastern Trinidad. They were confirmed by the isolation of yellow fever virus from the blood of the two patients.

There was no recurrence anywhere in the Region of anything approaching the spectacular 1948-1957 epidemic of jungle yellow fever that began in Panama and spread north through Central America as far as northern Guatemala.

During the period under review, PAHO coordinated two limited studies involving vaccination with 17D virus, one on the administration of the vaccine by scarification and one on the duration of immunity.

The pioneer studies of 17D vaccination by scarification of the skin in Africa were published in 1951. In Colombia, South America, it became apparent that if yellow fever vaccine could be delivered house-to-house in the jungle yellow fever areas, the most exposed portion of the rural population could be reached more effectively than by the long-established practice of assembling people in groups to be inoculated with the vaccine by the subcutaneous route.

The first obstacle to be overcome was the almost complete lack of refrigeration in the rural areas. Thus, the vaccine had to be potent even after it had been removed from refrigeration for periods up to a week, and sometimes longer. Laboratory tests showed this to be easy to obtain if the vaccine were well desiccated and originally of high titer. Preliminary tests on children in areas where

there was no yellow fever gave almost perfect results in producing demonstrable neutralizing antibody, which is generally accepted as proof of immunity. In a house-to-house field test involving 3,123 persons living in the yellow fever area, neutralization tests on 387 postvaccination sera showed that at least 94 per cent of the population vaccinated was immune to yellow fever. It was not feasible to ascertain how many of the people were immune before they were vaccinated, however, for the study was done in an area in which there had been repeated yellow fever epidemics and 13 per cent of the people vaccinated said they had previously been vaccinated against yellow fever.

The cooperative study of the duration of immunity following a single inoculation with 17D vaccine, coordinated by the Organization, involved persons who had been resident in the Municipio of Pouso Alegre, Minas Gerais, Brazil, in the year 1941, when a large field vaccination experiment had been undertaken. This area had never suffered from either jungle or urban yellow fever, there had never been any need to vaccinate in the area, and no other yellow fever vaccination had ever been done. Sera taken from 108 persons in 1958—17 years after the vaccination—revealed evidence of neutralizing antibodies in 105, or 97.1 per cent. This result is considered to be very satisfactory.

### *Aedes aegypti* Eradication

While substantial progress occurred in eradicating the urban vector of yellow fever, much remained to be done. Bolivia and parts of Brazil were free of the vector when the coordinated hemisphere-wide eradication campaign was launched in 1947, and eradication was achieved in a number of countries between 1947 and 1958.

In 1958, PAHO technicians, in collaboration with national personnel, demonstrated the absence of the vector in five countries, and in September of that year the XV Pan American Sanitary Conference formally declared *Aedes aegypti* eradicated from 11 countries and other political units.

In view of the dimensions of the remaining problem, the PAHO budget for the *A. aegypti* program rose from \$250,000 in 1958 to \$330,000 for 12 eradication projects in 1961.

Eradication activities were intensified in Cuba and Venezuela in 1959, with increased PAHO participation. In the same year eradication was verified in El Salvador and Honduras and a partial evaluation was made in Mexico. In 1960 eradication was verified in Chile and Costa Rica.

In Colombia, where eradication had reached the final phase in 1960, problems developed in Cúcuta, which had

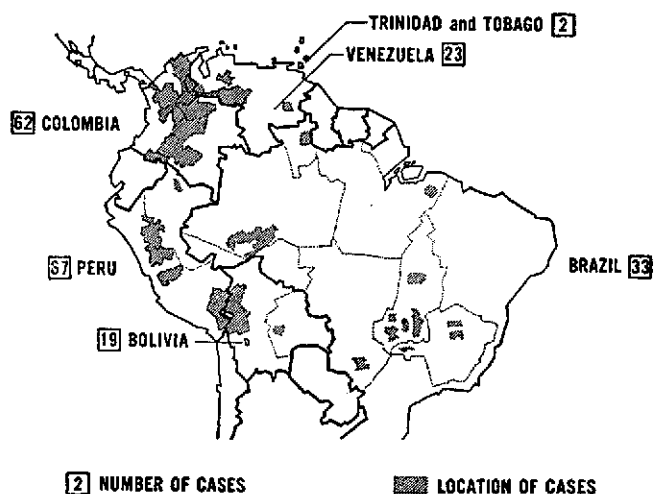


FIG. 5. REPORTED CASES OF JUNGLE YELLOW FEVER IN THE AMERICAS, 1958-1961.



been negative from December 1959 to August 1961 but was found reinfested with *A. aegypti* in September 1961.

A second partial evaluation of the Mexican campaign was made in 1961, with 21 localities in the north of the country found negative, and a special investigation of Yucatán was begun.

By the end of 1961, eradication had been declared formally in a total of 16 countries and other political units. The situation at the end of the period under review can be summarized as follows:

**North America.**—The *A. aegypti* problem continued in the United States, where an eradication program had not yet been begun but where the content and design of a program were under study. The campaign in Mexico was in its final phase, with a possibility that eradication might be achieved in 1962.

**Central America.**—The vector had been eradicated in all countries.

**Caribbean.**—The campaign was proceeding slowly in most parts of the Caribbean, but was achieving satisfactory results in Cuba and had reached its final phase in Trinidad. In the Dominican Republic, work was proceeding slowly and results were unsatisfactory. The campaign had been interrupted in Haiti in 1958 and Jamaica in 1961, and in Puerto Rico and the U. S. Virgin Islands only very limited antimosquito work was being undertaken. The general situation in the Caribbean was con-

sidered unsatisfactory because of ease with which *A. aegypti* can be imported from one island to another and the rapid development of strains resistant to residual insecticides, which had been observed on the islands that were still positive.

**South America.**—The campaign had not yet begun in Surinam for lack of funds, but was making satisfactory progress in Argentina and Venezuela, with eradication possible by 1963 and 1964, respectively. In Colombia, despite the problem area of Cúcuta on the Venezuelan border, eradication was in prospect for 1962 or 1963. Eradication had been achieved in the remainder of South America.

The general status of *A. aegypti* eradication at the end of December 1961 is shown in Figure 6.

## SMALLPOX ERADICATION

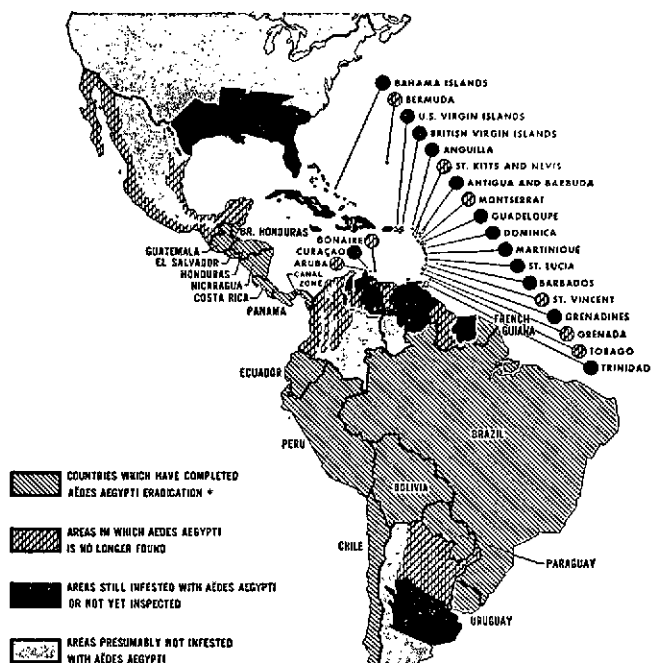
Smallpox, which had been reported in 15 countries and other political units of the Americas in 1951, was found in only seven in 1958 and five in 1961. As national vaccination programs developed, the disease tended to disappear rapidly from areas where it had previously been prevalent and remained only in countries which had not yet begun eradication campaigns, or where campaigns had been begun on an inadequate basis or had been interrupted prematurely.

Table 13 shows the cases of smallpox reported in the Americas, by years, for the period 1958-1961. It will be observed that the disease by 1961 was concentrated in a small number of countries, with Brazil and Ecuador the principal foci.

Except for Panama, where eight cases, four of which were imported, occurred in 1958, no cases of smallpox have been observed in Central America and the Caribbean in the last seven years. Table 14 shows the number of persons vaccinated in the Americas during the four years under review, as well as the estimated population in the same areas in 1960.

Where smallpox had already been eliminated, it was recommended that efforts to maintain levels of immunity through intensive vaccination programs should be continued. This did not occur in a number of countries, thereby raising the possibility of reinfection in this age of rapid communications.

PAHO cooperated with Brazil, Colombia, Ecuador, and Paraguay in preparing campaigns to eradicate smallpox by vaccination. Work was completed successfully in Paraguay in 1959. In 1960, 35 cases of smallpox occurred in a



\* ERADICATION CARRIED OUT ACCORDING TO THE STANDARDS ESTABLISHED BY THE PAN AMERICAN HEALTH ORGANIZATION

FIG. 6. STATUS OF *Aedes Aegypti* ERADICATION IN THE AMERICAS, DECEMBER 1961.

TABLE 13. CASES OF SMALLPOX NOTIFIED IN THE AMERICAS, 1954-1957 AND 1958-1961

Country	1954	1955	1956	1957	1958	1959	1960	1961
Argentina	256	55	86	335	27	36	65	4
Bolivia	624	372	499	1,310	183	7	1	-
Brazil <sup>a</sup>	1,035	2,580	2,385	1,411	1,232	2,629	2,644	1,411 <sup>b</sup>
Chile	-	-	-	-	-	1	-	-
Colombia	7,203	3,404	2,572	2,145	2,009	950	209	16
Ecuador	2,516	1,831	669	913	863	1,140	2,185	491
Panama	-	-	-	-	8 <sup>c</sup>	-	-	-
Paraguay	207	57	132	103	21	-	35	-
Peru	115	-	-	-	-	-	-	-
United States	9	2	-	1	-	-	-	-
Uruguay	1	45	42	2	-	-	19 <sup>d</sup>	1 <sup>e</sup>
Venezuela	13	2	4 <sup>f</sup>	-	-	-	-	-
Total	11,979	8,348	6,389	6,220	4,343	4,763	5,158	1,923

- None.

<sup>a</sup> State of Guanabara and the capitals of the other states.

<sup>b</sup> State of Guanabara.

<sup>c</sup> Includes 4 imported cases.

<sup>d</sup> Includes 2 imported cases.

<sup>e</sup> Imported case.

<sup>f</sup> Clinical diagnosis.

group of nomadic Indians who had not been vaccinated during the campaign.

In Ecuador, smallpox was not eradicated despite years of work, owing principally to financial and administrative difficulties. PAHO and UNICEF have offered further technical and material collaboration to Ecuador with the goal of eradicating smallpox in the next two years.

Brazil, with the greatest number of smallpox cases in the Hemisphere, has not yet begun an eradication program. PAHO collaborated with the Government of Brazil in training personnel and providing equipment for vaccine production. Details are reported in connection with public health laboratories on page 33.

In Colombia, after a well-planned and well-executed vaccination campaign, the number of cases declined to 16 in 1961, with the prospect of eradicating the disease in 1962. PAHO maintained a consultant in smallpox eradication in Colombia until April 1961, and also provided equipment and fellowships for the training of national personnel for vaccine production. Assistance was also provided to the Dominican Republic, El Salvador, Guatemala, Haiti, and Honduras.

PAHO provided prepared smallpox vaccine and equipment for the production of lyophilized vaccine in Bolivia, where only one case of smallpox was notified in 1960.

During the period under review technical assistance for the production of dried and glycerinated vaccine continued, and equipment for vaccine production was supplied to Argentina, Brazil, Chile, Cuba, Peru, and Vene-

zuela. Prepared vaccine was supplied to Brazil (1960), Ecuador (1959), Panama (1961), and Paraguay (1957-1959) for use in the absence of locally-produced vaccine or to meet short-term emergency requirements. In addition to consultant services and laboratory equipment, vehicles for transporting personnel were supplied to Paraguay.

Reference laboratory service was made available to assay the purity and potency of the vaccine produced in different countries in order to verify national control procedures. In the period 1958-1961, 34 lots of vaccine were assayed. Details of vaccine production are shown in Table 15.

The XV Pan American Sanitary Conference (1958) recommended that PAHO begin studies to prepare a definition of smallpox eradication. With the approval of the World Health Organization, the following definition was presented to the XIII Meeting of the Directing Council of PAHO (1961), which adopted it.

From a practical viewpoint, countries in which smallpox is endemic may consider the disease eradicated when no new cases of smallpox occur during the three years immediately following the completion of a suitable vaccination campaign.

Although the particular conditions in individual countries may require a change in the manner of conducting the vaccination program, it is generally accepted that the correct vaccination of 80 per cent of each of the sectors of the population, within not more than five years, will result in the disappearance of smallpox.

Countries where smallpox has been eradicated should adopt measures to maintain such eradication through either a permanent immunization program or, in the event of the

disease being reintroduced into the country, the combined application of isolation and immunization measures. In countries exposed to the risk of the introduction of smallpox—for example, when the disease is endemic in neighboring countries—it is recommended that an attempt be made to maintain suitable levels of immunity in the population through: (a) the vaccination of all new members of the population; and (b) the periodic revaccination of the population, especially of the more exposed sectors.

In view of increasing international travel, the strict application of the pertinent provisions in the International Sanitary Regulations is recommended as a measure to protect

countries free from the disease until such time as smallpox eradication is accomplished throughout the world.

The quadrennium 1958-1961 saw smallpox disappear from large areas of the Americas. Brazil and Ecuador were the only countries where, at the end of the period, smallpox was still important and where periodic epidemics continued. The eradication of smallpox from these countries will go far to protect the investment of other American countries in successful smallpox eradication campaigns.

TABLE 14. REPORTED NUMBER OF SMALLPOX VACCINATIONS IN THE AMERICAS, 1958-1961, AND ESTIMATED POPULATION IN THE SAME AREAS, 1960

Country or other political unit	Vaccinations				Estimated population 1960 (thousands)
	1958	1959	1960	1961	
Argentina	751,591	1,280,486	1,608,597	4,407,020	20,956
Bolivia	2,432,186	422,945	42,603	34,215 <sup>a</sup>	3,462
Brazil	4,139,772	7,856,294	4,910,091	---	65,743
Chile	628,325	2,778,686	1,276,000	131,966	7,627
Colombia	2,557,615	2,643,381	1,988,386	1,250,685	14,132
Costa Rica	25,395	15,820	14,657	79,553	1,171
Cuba	7,996	25,083	38,635 <sup>b</sup>	129,647	6,797
Dominican Republic	4,511	5,027	26,057	10,000	3,014
Ecuador	301,112	546,667	507,361	535,668	4,298
El Salvador	43,620	32,818	29,383	24,554 <sup>c</sup>	2,612
Guatemala	99,200	34,428	58,160	120,590 <sup>a</sup>	3,759
Haiti	443,119	---	441	3,135	3,505
Honduras	32,328	12,824	17,843	9,509 <sup>c</sup>	1,950
Mexico	3,089,701	5,287,714	3,637,334	2,588,149	34,626
Nicaragua	10,108	10,521	8,803	19,385	1,475
Panama	48,610	33,108	24,835	31,596	1,053
Paraguay	594,003	589,316	122,897	41,734	1,768
Peru	1,273,017	824,100	884,392 <sup>c</sup>	969,808	10,857
Uruguay	102,054	87,324	214,360	188,674	2,700 <sup>d</sup>
Venezuela	862,585	1,060,850	920,969	1,140,842	6,709
Antigua	---	---	1,859	1,246	54
Bahamas	---	---	---	17,941	105
Barbados	---	---	10,741	14,070	235
British Honduras	---	3,325	4,050	4,900	90
Curaçao	---	---	3,665	---	190
Dominica	---	---	---	1,351 <sup>e</sup>	59
Grenada	---	---	3,402	1,350	89
Jamaica	---	---	79,060	70,129	1,607
Martinique	---	---	14,094	---	277
Montserrat	---	---	1,204	---	12
St. Kitts-Nevis-Anguilla	---	---	3,300	2,979	57
Surinam	---	---	3,665	8,400	270
Trinidad and Tobago	---	---	3,839	---	832

--- Data not available.

<sup>a</sup> January-November.

<sup>b</sup> Partial information.

<sup>c</sup> January-October.

<sup>d</sup> 1958.

<sup>e</sup> January-August.

TABLE 15. REPORTED PRODUCTION OF SMALLPOX VACCINE IN THE AMERICAS, 1958-1961  
(doses)

Country or other political unit	1958		1959		1960		1961	
	Glycerinated	Dried	Glycerinated	Dried	Glycerinated	Dried	Glycerinated	Dried
Argentina	6,500,000	83,000	4,099,400	60,000	6,600,000	---	19,300,000	-
Bolivia	---	37,000	---	543,000	---	310,000	---	122,500
Brazil	8,196,555	---	17,217,090	---	11,792,304	889,700	---	---
Chile	862,500	885,000	7,850,000	1,310,000	960,000	530,000	1,050,000	360,000
Colombia	2,125,800	4,087,980	---	4,511,600	---	2,473,240	---	2,809,865
Cuba	180,000	-	210,000	-	1,360,000	-	518,500	---
Ecuador	161,830	337,900	---	1,210,820	---	1,055,740	41,020	1,095,220
El Salvador	210,000	-	50,000	-	60,300	-	127,650	-
Guatemala	92,345	-	230,900	-	484,400	-	283,400	-
Honduras	31,100	-	20,200	-	20,200	-	20,000	-
Mexico	8,819,023	---	20,859,300	---	10,477,800	---	7,880,480	---
Nicaragua	35,880	-	15,100	-	15,300	-	40,000	-
Peru	932,100	---	1,029,400	2,735,610	563,465	1,362,300	433,400	1,299,900
Uruguay	2,100,000	-	1,726,700	-	1,982,000	68,500	1,480,000	70,000
Venezuela	6,000,000	20,000	4,751,000	217,000	3,925,000	316,000	4,600,000	278,000
Surinam	-	-	-	-	-	-	15,000	---

- None.

--- Data not available.

## YAWS ERADICATION

Yaws eradication made substantial progress in the period under review. In the Dominican Republic, the case-finding activities of the eradication campaign which had started in 1953 were completed, with half the rural population examined in the period 1958-1961. The prevalence of infectious forms declined from 200 per 100,000 persons examined in 1958 to 30 per 100,000 in 1961. The PAHO consultant planned a survey to verify the progress achieved, which is to be carried out in 1962.

In Haiti, where the eradication program began in 1950, a study of remaining yaws foci was carried out in 1958. The country entered the phase of consolidation and surveillance in 1959. In 1960, with the collaboration of the PAHO consultant, a special survey of so-called "positive ulcers" was made which revealed that nearly all the ulcers found positive under darkfield examination were common tropical ulcers, the spirochete being *Borrelia vincenti*, sometimes in association with *Fusiformis fusiformis*, and that *Treponema pertenuis* was present in less than two per cent of the cases. Infectious forms of yaws declined from 100 per 100,000 persons surveyed in 1959 to 1.3 per 100,000 in 1961.

In 1961, one yaws inspection team was given orientation on the general health program and lectures on health education and communicable disease control, and was

integrated with the general services on an experimental basis.

In Trinidad and Tobago, St. Kitts, and Grenada, surveillance activities continued and no cases of yaws were detected in 1961. The possibility of achieving eradication was also encouraging in St. Vincent, St. Lucia, and Dominica.

In Colombia and Ecuador, where yaws eradication had been undertaken with assistance from the United States Government (AID), the programs were considered to have ended successfully in 1961 and PAHO was requested to undertake the final verification study.

## VENEREAL DISEASE CONTROL

Venereal disease remained a serious problem in the four years under review, despite the availability of improved techniques of diagnosis and treatment.

With the collaboration of the PAHO El Paso Field Office, a constant interchange of data on reported cases between health authorities in Mexico and the United States was maintained. Three joint antivenereal committees coordinated efforts in neighboring pairs of cities on either side of the border, supplementing the more general work of the United States-Mexico Border Public Health Association.

PAHO provided a medical consultant and a serological expert for the antivenereal program of the Dominican Republic. In the period 1958-1961, 387 physicians attended 12 courses on venereal disease, 59 public health nurses and sanitation personnel attended four courses, and 46 laboratory technicians attended four courses on the serological diagnosis of syphilis. Twenty venereal disease clinics were established, and 15 of a projected 18 laboratories for serological tests using the quantitative and qualitative VDRL reaction were set up.

A permanent consultant in yaws and venereal disease was assigned to Zone I, to work principally in the Caribbean islands, and a short-term consultant visited Colombia and Venezuela in 1960 and 1961.

One physician from Brazil and one from Venezuela participated in a traveling seminar on venereal disease control sponsored by WHO and the Government of the USSR in 1961.

The manual *Syphilis—Modern Diagnosis and Management*, of the U.S. Public Health Service, was translated into Spanish and published in 1961 as PAHO Scientific Publication No. 56.

## POLIOMYELITIS

The major event of the period 1958-1961 was the field testing and subsequent adoption in many countries of attenuated live virus vaccine, in which the Organization played an important part. The number of cases of the disease reported during this period is shown in Table 16.

In 1957 the World Health Organization convened an Expert Committee which recommended field tests of attenuated live virus vaccine. After successful field tests in 1957 in Minnesota, U.S.A., of a vaccine containing the three strains of virus, the PAHO cooperated in similar

studies in the same state in 1958 and promoted large-scale field trials with Lederle vaccine in Colombia, Costa Rica, and Nicaragua, and tests on a smaller scale in other countries, with a total of more than 210,000 vaccinations performed during 1958. On the basis of the test results, the Organization began to promote mass vaccination programs in the Americas. By the end of 1961 some two million persons had been immunized against poliomyelitis in Latin America, of whom more than one million had received attenuated live virus vaccine by the oral route in programs sponsored or assisted by the Organization.

In 1958 cases of paralytic polio were observed in an area of Antioquia, Colombia, where the disease had not been reported previously. At the request of the Government, the Organization initiated a vaccination program and 6,977 children under the age of seven were given the three types of Cox attenuated virus separately. The conversion rates (per cent of previously negative individuals becoming positive after vaccination) in a sample of 576 children were 89, 75, and 90 per cent for virus Types 1, 2, and 3, respectively, and 90 per cent of the children under 10 years of age in the city of Medellín were subsequently vaccinated in the same way. In the few cases of paralytic polio occurring after the start of the tests, it was possible to exclude any causal relation between the cases and the virus in the vaccine. In 1960, 225,711 children under the age of five were vaccinated in six other districts, and no adverse reactions were observed in three months of follow-up observation. The conversion rates were 87.7 per cent for Type 1, 48.8 for Type 2, and 95.4 for Type 3 virus.

In Nicaragua, following an epidemic attributed to Type 2 virus, the Organization cooperated in a vaccination campaign for children under 10 years of age in 1958-1959. The campaign and subsequent work resulted in the vaccination of 73,500 children, including 5,350 newborns. The conversion rates were 74 per cent for Type 1 virus, 58 per cent for Type 2, and 80 per cent for Type 3.

In Costa Rica, an immunization program using Salk vaccine was interrupted in 1958 for reasons of cost. In 1959, with the cooperation of the Organization, a country-wide program using attenuated live virus vaccine was begun. Each type was administered separately in urban areas, but in rural areas trivalent vaccine was used. When the program ended in 1960, 120,000 children under 11 years of age had received three types in monovalent vaccine and 186,000 had received trivalent vaccine. Conversion rates for Types 1, 2, and 3 were 82, 37, and 92 per cent, respectively, with monovalent administration, and 86, 49, and 89 with trivalent vaccine. Incidence of the disease during the campaign was 6.5 per 100,000 in the vaccinated group and 62.7 per 100,000 in the unvaccinated.

TABLE 16. NUMBER OF REPORTED CASES OF POLIOMYELITIS IN THREE REGIONS OF THE AMERICAS, 1958-1961

Regions of the Americas <sup>a</sup>	1958	1959	1960	1961 <sup>b</sup>
Northern America	6,190	10,314	4,102	1,513
Middle America	1,973	2,988	2,626	1,484
South America	3,502	3,637	3,850	3,061

<sup>a</sup> Northern America: Canada, the United States, Bermuda, and St. Pierre and Miquelon.

<sup>b</sup> Middle America: Mexico, Central America, Panama, and the Caribbean republics and islands.

South America: All countries and territories of South America and the Falkland Islands.

<sup>c</sup> Incomplete.

The Organization cooperated with the health authorities of São Paulo, Brazil, in a demonstration program of oral vaccination in 1961. Virological and serological studies were made at the Adolfo Lutz Institute in São Paulo. The three strains of Sabin vaccine of the Connaught Laboratories, Toronto, were administered in separate doses at eight-week intervals to 30,000 children under four years of age.

In 1959, in cooperation with the Department of Preventive Medicine of the University of El Valle, Colombia, the Organization established a laboratory to provide assistance in studies concerned with live virus vaccination and to train both national personnel and persons from other countries in tissue-culture techniques applied to virology. In the same year a four-week international course on tissue culture was held for 10 students from eight South American countries.

PAHO/WHO, with the financial aid of the Sister Elizabeth Kenny Foundation, held two International Conferences on Live Poliovirus Vaccines in Washington in 1959 and 1960. The First Conference included 61 scientists from 17 countries, and considered information on more than five million vaccinations, concluding that none of the live virus vaccines had caused paralysis or other diseases and that the creation of antibodies for the three types of virus was sufficient to provide protection.

At the Second Conference, 85 scientists from 20 countries considered data covering many millions of persons vaccinated in 13 countries, and again came to a favorable conclusion, though it was noted that a longer period of observation would be necessary to determine the duration of immunity. A high spread of the virus within families was noted after the vaccination of infants, with far less extrafamilial propagation. Other papers showed that the vaccine was safe for use on pregnant women and newborns, though it was less effective in the latter group than in children more than four months old.

The proceedings of both Conferences were published by the Organization.<sup>1</sup> On the basis of the evidence presented, a number of countries approved oral vaccination with attenuated live virus, and established standards for production of the strains developed by Sabin. At the end of the period under review, certain limited manufacturing problems still existed, but these were rapidly being solved.

## LEPROSY

Significant changes in the control of leprosy have occurred in recent years. New and more effective drugs of lower toxicity and greater ease of administration have had

<sup>1</sup> *Scientific Publications PAHO* 44, 1959 and 50, 1960.

a radical effect on treatment and there is now lessened need for isolation. As the emphasis on isolation of cases declined, leprosaria tended more and more to become leprosy hospitals where specific kinds of cases were treated for limited periods instead of being isolated for life. New emphasis was placed on physical and social rehabilitation and on the prevention of deformities. The number of cases of leprosy in the Americas during the period under review is shown in Table 17.

A PAHO consultant completed surveys of leprosy in Argentina, Costa Rica, Jamaica, and Uruguay in 1958; in British Honduras, El Salvador, Honduras, Mexico, Nicaragua, and Panama in 1959; in the Dominican Republic in 1961; and brought earlier surveys of Bolivia, Ecuador, and Peru up to date in 1960.

A seminar on leprosy in the Americas held in Brazil in 1958 was jointly sponsored by PAHO and the Government of Brazil. Among the recommendations of the seminar were the abolition of compulsory isolation and the progressive incorporation of prophylactic measures into general public health services.

In Paraguay, where leprosy is an important public health problem and where compulsory isolation of cases ended in 1955, the tendency in the last four years was to include leprosy control in the regular program of health centers. Funds for leprosy control nearly doubled from 1958 to 1960, and in the latter year came to slightly more than 5 per cent of the total budget of the Ministry of Health. It was estimated that the percentage of known cases under control rose from 39 in 1959 to 65 in 1961, and the percentage of contacts under control, from 6 to 14. The Organization continues to assist the Government of Paraguay in leprosy work.

A tripartite agreement between PAHO/WHO, the Government of Argentina, and UNICEF went into effect in 1960 for purposes of establishing a national leprosy control program. New legal provisions abolished com-

TABLE 17. NUMBER OF REPORTED CASES OF LEPROSY IN THREE REGIONS OF THE AMERICAS, 1958-1961

Regions of the Americas <sup>a</sup>	1958	1959	1960	1961 <sup>b</sup>
Northern America	59	50	56	---
Middle America	485	636	633	307
South America	9,081	9,488	8,769	945

--- Data not available.

<sup>a</sup> *Northern America*: Canada, the United States, Bermuda, and St. Pierre and Miquelon.

*Middle America*: Mexico, Central America, Panama, and the Caribbean republics and islands.

*South America*: All countries and territories of South America and the Falkland Islands.

<sup>b</sup> Incomplete.

TABLE 18. REPORTED CASES OF LEPROSY AND RATES PER 100,000 POPULATION IN CENTRAL AMERICA AND PANAMA, 1958-1961

Country	1958		1959		1960		1961	
	Number of cases	Rate per 100,000 population	Number of cases	Rate per 100,000 population	Number of cases	Rate per 100,000 population	Number of cases	Rate per 100,000 population
Costa Rica	493	47.0	501	44.5	550	46.9	590	48.2
El Salvador	128	5.0	153	6.0	185	7.2	220	8.2
Guatemala	77	2.2	85	2.3	108	2.9	118	3.0
Honduras	47	2.0	47	2.5	56	2.8	119	5.9
Nicaragua	115	8.0	135	9.5	140	9.5	161	10.5
Panama	121	12.4	121	12.0	122	11.4	136	12.4

pulsory isolation, established free treatment and obligatory dermatoneurological examinations for schoolchildren and persons about to marry, and provided subsidies for persons needing hospitalization or special treatment at home.

A short-term consultant made a study of the Institute of Leprology in Rio de Janeiro, Brazil, in 1961. In the same year, tripartite agreements for leprosy control programs in Brazil, Colombia, and Mexico were prepared.

A Regional Leprosy Consultant was assigned by PAHO to the countries of Central America and Panama. With the collaboration of the consultant, Costa Rica, El Salvador, Guatemala, Honduras, and Panama have been progressively incorporating leprosy control into general public health programs, intensifying case-finding, increasing the percentage of contacts under control, and putting emphasis on ambulatory treatment. The increased number of training courses has resulted in improved diagnosis, as shown by the statistics of cases in Table 18.

With the technical and financial assistance of PAHO and the cooperation of the Government of Guatemala, a meeting of officials of leprosy control programs in Central America and Panama was held in 1961 to discuss methods and procedures and plans for the future.

## TUBERCULOSIS

Tuberculosis morbidity and mortality in the Americas continued to show a progressive but slow decline in the years under review, but the problems posed by this disease nevertheless continued to be great. Table 19 shows the number of cases reported in the years under review and reflects improved diagnosis in many countries. The application of new methods of control assumed increasing importance.

Recent years saw a revolutionary change in the traditional pattern of tuberculosis control. In advanced countries the sanatorium had for many years been the central focus, while in emergent countries BCG vaccination had been the chief resource. Both continued to be of great importance, but the outpatient clinics with their functions of case-finding, ambulatory treatment, follow-up, and community organization began to play the leading role.

Three drugs became standard—isoniazid, para-aminosalicylic acid (PAS), and streptomycin. Not only were tuberculous individuals made well by these drugs, but the time period of infectiousness of most patients was much shortened, thereby significantly decreasing the total man years of exposure of contacts and community. Further, isoniazid alone proved effectual as a preventive; given to children with a positive tuberculin test, it reduced significantly the number who progressed into serious clinical forms of the disease. Thus the drugs were effective not only for treatment of cases of the disease in all stages, but for preventing the emergence of symptomatic disease in infected individuals (secondary prophylaxis). Studies were in progress in several areas of the world to determine

TABLE 19. NUMBER OF REPORTED CASES OF TUBERCULOSIS IN THREE REGIONS OF THE AMERICAS, 1958-1961

Regions of the Americas <sup>a</sup>	1958	1959	1960	1961 <sup>b</sup>
Northern America	71,420	64,121	61,851	---
Middle America	29,754	35,217	38,689	30,376
South America	74,618	83,966	79,194	56,373

--- Data not available.

<sup>a</sup> *Northern America:* Canada, the United States, Bermuda, and St. Pierre and Miquelon.

*Middle America:* Mexico, Central America, Panama, and the Caribbean republics and islands.

*South America:* All countries and territories of South America and the Falkland Islands.

<sup>b</sup> Incomplete.

whether infection itself could be prevented by drugs (primary prophylaxis).

These changes had inevitable repercussions on PAHO tuberculosis programs. In previous years, most of the Organization's collaboration in this field had taken the form of assistance to Governments in mass BCG vaccination campaigns. In the last three years, however, the emphasis shifted to better organization of clinics, with special attention given to chemotherapy and chemoprophylaxis. The Organization's services in tuberculosis control were directed to three main fields of interest:

(1) Training national personnel in new antituberculosis techniques and procedures through fellowships to selected personnel for study abroad, in-service training in tuberculosis control projects, and participation in seminars.

(2) Assistance in the establishment of national pilot-area projects, including prevalence surveys, case-finding, treatment, and BCG vaccination.

(3) Surveys of the tuberculosis situation in the different countries, including the study of trends in morbidity and mortality, the assessment of the physical facilities and resources of trained personnel that could be used for an effective program, the priority of needs, and the formulation of recommendations as to possible ways of meeting them.

A Regional Tuberculosis Adviser was appointed in 1960. Difficulties encountered in recruiting suitable consultants to work full time with national tuberculosis projects, however, delayed fulfillment of some of the requests for assistance by the Organization.

At the beginning of the quadrennium, three mass BCG vaccination campaigns assisted by PAHO/WHO were in progress. A project in Chile and a program in Guatemala which had begun in 1956 terminated in 1958, and the program in Honduras, begun in 1957, was completed in 1959. One new BCG mass immunization campaign was begun in 1958 in the Dominican Republic, terminating in 1961. No further campaigns of this limited character were assisted because of the change in emphasis described above. One other BCG vaccination project came to fruition in 1960 with the inauguration of a new laboratory for production of the vaccine in Montevideo, Uruguay, which had been planned with PAHO assistance.

New tuberculosis activities by Member Governments with PAHO/WHO assistance since 1958 were in the main based on the principle of the pilot projects. Following a BCG vaccination campaign in Guatemala, a pilot project was begun in 1958 with new treatment centers created in 1959 and 1960 and with special emphasis placed on techniques of drug distribution to ambulatory patients and study of patient motivation.

A pilot project was established in the Province of Santa Fe, Argentina, in connection with which a school for training tuberculosis control workers was established and was to hold its first course in 1962.

A PAHO consultant has assisted the Government of Colombia since 1960 in reorganizing the national tuberculosis administration, setting up pilot projects in different states, and conducting a preliminary epidemiological survey.

In Mexico, two pilot-area projects were planned in 1960, but special mobile X-ray equipment designed by WHO did not arrive until late in 1961. The operation of a pilot project in Peru was delayed by late arrival of X-ray equipment and by financial problems, but preparatory work was begun by a PAHO/WHO consultant in tuberculosis nursing.

Finally, preparatory work was begun on a prevalence survey and the establishment of pilot-area clinics in Rio Grande do Norte, Brazil, a pilot center at Pinar del Rio, Cuba, a prevalence survey and pilot center on the Bolivian side of Lake Titicaca, a pilot center at San Cristóbal in the Dominican Republic, and a pilot-area project in Tegucigalpa, Honduras.

All of the above projects were based on tripartite agreements with substantial commitments by UNICEF.

## PLAGUE

During the period under review plague remained enzootic in Argentina, Bolivia, Brazil, Ecuador, Peru, the United States, and Venezuela. The major cities and ports of the Hemisphere remained free of the disease during 1958-1961 as they had in the previous quadrennium.

During 1958-1961 cases of plague (all of the sylvatic type) were reported in Argentina, Bolivia, Brazil, Ecuador, Peru, the United States, and Venezuela. Table 20

TABLE 20. REPORTED CASES OF PLAGUE IN THE AMERICAS, 1958-1961

Country	1958	1959	1960	1961
Argentina	1	-	-	-
Bolivia	-	-	12	20
Brazil	25	16	28	106
Ecuador	22	40	77	140
Peru	49	33	139	68
United States	-	4	2	3
Venezuela	-	-	-	6
Total	97	93	258	343

- None.



shows the number of reported cases of the disease in the Americas during this period. The increases registered in Bolivia, Brazil, and Ecuador from 1960 to 1961 show that plague is a continuing problem.

PAHO continued to cooperate with Member Governments in epidemiological studies and antiplague work by providing consultant services. In 1958 a PAHO consultant carried out an epidemiological plague survey in Brazil. Plague had been totally eliminated from Brazilian ports and cities and was localized in the rural portions of certain areas, where it continued to be endemic. Its incidence in man, which had been decreasing in the previous few years, increased in 1961. In the interior of the country, the disease was endemic in the northeast, where the infected region extended along the border between the States of Piauí and Ceará to the State of Bahia. The infected area had three recognized foci: a part of Ceará and the westernmost portion of Pernambuco; a coastal belt in the States of Pernambuco, Paraíba, and Alagoas; and the central part of Bahia, related to which was a new focus in the State of Minas Gerais that included several administrative subdivisions. It was believed that the domestic rat had no role in the maintenance of plague infection in Brazil and that, as in other American countries, the disease was confined to wild species of Rodentia and Lagomorpha.

An epidemiological study of the plague problem in Venezuela, where the disease is now confined to a small area situated on the border between the States of Aragua and Miranda, was made in 1960. There plague appeared sporadically more and more frequently in sylvatic rodents, several species of which were infected, especially *Sigmodon hispidus* and *Heteromys anomalus anomalus*. Ports and cities of Venezuela that had formerly been infected were free from the disease, the outbreaks recorded since 1939 having occurred in rural areas.

On the occasion of the plague outbreak on the border between Peru and Ecuador in 1960, PAHO provided the services of a consultant who made a study of the situation and recommended control measures.

The increased number of cases in 1961 showed the need to study the fundamental problems of plague in greater detail. The Organization took the preliminary steps for the planning of a complete and thorough epidemiological and ecological survey of plague areas in South America.

## CHAGAS' DISEASE

The activity of PAHO with respect to Chagas' disease increased in the period under review. A Study Group of specialists from the American countries met at PAHO

Headquarters in 1960 to discuss the problem of Chagas' disease in public health.

In 1961, a short-term consultant visited Uruguay to cooperate with the Government of that country in studying the problem of Chagas' disease and the control methods to be adopted.

## PARASITIC DISEASES

The broad field of parasitic diseases received attention through PAHO activities in sanitation, nutrition, and education and in work on such specific conditions as schistosomiasis, onchocerciasis, filariasis, hydatidosis, and trichinosis.

### Schistosomiasis

The Organization provided the countries concerned with technical information on various aspects of this disease. A consultant spent some months analyzing the problem and the program in Venezuela. The PAHO/WHO Working Group for the Development of Guidance for Identification of American Planorbidae Involved in Schistosomiasis (1961) made a detailed study of known information on the snail intermediate host. Plans were made for a team of specialists to visit all countries and territories in the Americas where schistosomiasis is a problem and to prepare recommendations for further control measures and research.

### Onchocerciasis

An entomologist and an ophthalmologist visited Venezuela (1960 and 1961) to study present problems and provide advice. An ophthalmologist visited Guatemala (1961) to study the disease and prepare a plan for a further study designed to determine the incidence of eye conditions caused by onchocerciasis. Plans were made for a study of the ecology of simulium vectors of onchocerciasis in the Americas.

### Filariasis

A consultant of the Organization made an analysis of the problem in British Guiana. The recommendations stemming from this study resulted in an increased anti-filariasis program in the territory with financial assistance from AID (ICA). A staff member of WHO visited several countries in South America to appraise the current knowledge and awareness of this disease.

## Hydatidosis

A specialist was sent to Peru (1958) to study the incidence and prevalence of this condition and advise on the feasibility of combining the vermifuge treatment of dogs for the tapeworm involved in hydatidosis with a campaign for rabies vaccination. The Pan American Zoonoses Center conducted studies on the reliability of various antigens for use in an intradermal diagnostic test and on the economic losses due to hydatidosis in sheep, and began a screening study in the search for a pharmaceutical compound useful in the mass vermifuge treatment of dogs.

## VETERINARY PUBLIC HEALTH SERVICES

In the four years under review, veterinary public health services continued to develop in all national ministries of health. This development was assisted technically by the Veterinary Public Health Advisers located in PAHO Zone Offices. Fellowships facilitated the training abroad of key national personnel, and the VPH Advisers aided in the development and conduct of local training courses.

Activities of the VPH units varied from country to country and from time to time, as staff were added and trained and programs developed. One of the major areas of work was in the control and prevention of the zoonoses. The handling of such a variety of diseases by relatively small national VPH staffs was a heavy burden on the personnel concerned and resulted in a series of requests to PAHO for advice and guidance.

Another major area of VPH activity was food hygiene for the control and prevention of human disease. Control of food additives, both intentional and unintentional, was included in this activity. Training of staff received high priority. In view of the lack of adequate specific training courses in this field, the Organization provided technical consultation to the Massachusetts Institute of Technology for the establishment of a new course for veterinarians leading to the degree of Master of Science in Food Science and Technology. The course, the only one of its kind in the Western Hemisphere, was to begin in September 1962.

A VPH consultant was requested from PAHO and assigned to Panama in 1961. On request of the Government of Colombia, the Zone IV VPH Adviser was transferred from Lima, Peru to Bogotá, Colombia, for purposes of continuous consultation.

## Rabies

Rabies remained a problem of varying importance in all the countries of the Americas except Uruguay. Details

of human and animal rabies are shown in Table 21. The Organization provided assistance to many countries on matters such as vaccine production, strain identification, human prophylaxis, and the control of wildlife reservoirs. Assistance was also provided in reference testing of vaccines and in the training of both field control and laboratory personnel.

Basically, rabies remained a disease of carnivorous wild animals and bats that from time to time extended to the domestic dog and cat populations and thus became a hazard to human health. There were also frequent outbreaks among domestic livestock but these generally did not constitute human health hazards.

An outbreak of rabies in the dogs of a large populated area is always cause for alarm. In answer to emergency requests, the Organization provides staff members, vaccines, and supplies, sufficient to handle the situation until national resources can be marshalled. An outbreak of this type took place, during 1959-1960, in the northern part of Baja California, Mexico, and the southern part of California, U.S.A. In the course of this outbreak 412 rabid animals were reported, 1,055 persons were bitten and 774 were given rabies treatment, while 18,593 dogs were vaccinated and 9,543 strays eliminated. As this outbreak was deemed to have originated from wild predatory animals, a wildlife control campaign followed, also with the Organization's assistance.

The Organization's brochure *Rabies Treatment in Man* was revised and published in Spanish, Portuguese, and English.<sup>1</sup> The information it contained, taken from the Fourth Report of the WHO Expert Committee on Rabies, provided a guide for specific postexposure treatment and related data. Through the cooperation of the Communicable Disease Center of the U.S. Public Health Service, a new film on laboratory techniques in rabies was adapted with a Spanish-language sound track and copies were purchased for loan to countries through the Zone Offices.

Various research activities in rabies were conducted by the Organization, or coordinated by it when intercountry activities were involved. These included testing of the efficacy of various vaccines in dogs, human pre-exposure prophylaxis, the local treatment of wounds, and the ecology of rabies-carrying bats.

The Organization conducted international meetings on rabies problems in the United States-Mexico border area in San Diego, California, and Mexico City (1961). The meetings resulted in a program for the coordination of rabies activities on both sides of the border, using the services of the El Paso Field Office.

<sup>1</sup> *Miscellaneous Publication PAHO 62*, 1960.

TABLE 21. REPORTED CASES OF RABIES IN MAN AND ANIMALS IN THE AMERICAS, 1958-1961

Country or other political unit	1958		1959		1960		1961*	
	Man	Animals	Man	Animals	Man	Animals	Man	Animals
Argentina	8	987	20	---	13	229	12	---
Bolivia	3	---	9	---	2	---	-	---
Brazil	48 <sup>b</sup>	334	30 <sup>b</sup>	462	9 <sup>b</sup>	492	---	---
Canada	-	582	-	904	-	318	-	784
Chile	5	304	6	274	6	605	3	554
Colombia	23 <sup>c</sup>	---	20 <sup>c</sup>	1,011	16 <sup>c</sup>	839	19 <sup>c</sup>	---
Costa Rica	-	18	---	24	---	172	---	---
Cuba	2	---	5	340	3	317	1	---
Dominican Republic	-	4	-	---	1	---	---	---
Ecuador	---	---	---	---	18	272	16	261
El Salvador	3 <sup>c</sup>	48	3 <sup>c</sup>	97	3 <sup>c</sup>	68	8 <sup>c</sup>	184
Guatemala	1	64	8	117	10	154	1	65
Haiti	-	7	---	---	---	---	7	---
Honduras	-	44	6	5	-	68	3	48
Mexico	36	---	30	65	49	31	28	75
Nicaragua	1	57	---	57	1	48	1	47
Panama	-	2	-	---	-	---	-	2
Paraguay	4	29	2	57	-	28	1	3
Peru	10 <sup>c</sup>	297	8 <sup>c</sup>	401	11 <sup>c</sup>	553	16 <sup>c</sup>	---
United States <sup>d</sup>	5	4,798	7	4,037	2	3,393	3	3,389
Venezuela	31	64	14	193	5	181	7	5
British Guiana	°	29	-	---	5	13	-	8
British Honduras	-	-	-	---	-	---	-	42
Canal Zone	-	---	-	23	-	20	-	---
French Guiana	-	25	---	4	---	---	-	---
Grenada	---	8	---	17	---	---	-	---
Puerto Rico	-	17	-	24	-	34	-	29
Trinidad and Tobago	-	11	---	---	---	---	---	---

- None.

--- Data not available.

\* Provisional.

<sup>b</sup> State of Guanabara and capitals of other states. Data for 1960 incomplete.

<sup>c</sup> Reporting area.

<sup>d</sup> Including Alaska and Hawaii.

° Disease not notifiable.

## Pan American Zoonoses Center

The Pan American Zoonoses Center was established at Azul, Buenos Aires, Argentina, in 1956 with financing from PAHO/WHO and the Argentine Government. It completed its second full year of operation in 1958, though it was not formally inaugurated until 1959. Since 1959, its activities have been expanding steadily in the fields of research, education, and technical assistance to Governments.

### Research

In the four years under review, research was conducted in a variety of fields. Research in brucellosis resulted in 1961 in isolating *Brucella melitensis* from sheep (the

first finding in the Americas) and the first confirmation of *B. ovis* in sheep in South America. Studies were also conducted on anthrax, hydatidosis, rabies, leptospirosis, salmonellosis, trichinosis, tuberculosis, and methods for the care and breeding of laboratory animals. Serological surveys of Q fever in animals and man were made in Argentina, Brazil, Chile, Colombia, and Uruguay.

### Education

The Center offered both field and laboratory training in zoonoses. Advanced study courses at the Center began in 1959. Fellowships for group training courses and long- and short-term individual study programs were mainly provided by PAHO/WHO, though some students were supported by national Governments. Four annual post-

graduate courses on zoonoses control were also offered. The Center established both a reference library and a special collection of audiovisual aids for training purposes. In all, in the period 1958-1961, 60 fellows came to the Center for courses or for observation of techniques and procedures, under fellowships or grants from PAHO/WHO.

#### *Technical Services*

The Center offered a variety of services to Governments, including consultation, demonstration of methods for epidemiological studies and for control programs, coordination of intercountry epidemiological studies and campaigns, distribution of technical information in the quarterly bulletin *Zoonosis*, and laboratory services.

In 1961 the Center undertook to provide technical advice and laboratory services for a pilot project of brucellosis control in Buenos Aires Province, Argentina. Standard and special bacterial and virus strains, leptospiral cultures, and antigens were provided to Governments. Selected breeding stock of different species of laboratory animals were supplied to institutions desiring to start or renew their colonies. The increase in laboratory services from 1959 to 1961 is shown in Table 22.

Through the period 1958-1961, the Center operated with an international staff of three scientists and one administrator, while local staff rose from 22 in 1958 to 38 in 1961.

### **Pan American Foot-and-Mouth Disease Center**

The Pan American Foot-and-Mouth Disease Center, established by the Organization near Rio de Janeiro, Brazil, continued in the four years under review to be financed from the Technical Cooperation Program of the Organization of American States with additional support from the Government of Brazil.

Two training courses were conducted in 1958, one in 1959, and two each in 1960 and 1961, and the Center also provided training for long-term fellows, whose number rose from two in 1958 to seven in 1961.

The main research effort of the Center was in the development of vaccine for foot-and-mouth disease. In 1960, a test for the potency of vaccine was developed, using adult mice and certain modified strains of virus. Field work was carried on with the Center's strain of modified Type O virus, and in 1961 the adaptation and modification of a strain of Type A reached the point where it could be

TABLE 22. SAMPLES RECEIVED AT THE PAN AMERICAN ZOONOSES CENTER LABORATORIES, 1959-1961

Type of sample	Number of individual specimens		
	1959 <sup>a</sup>	1960	1961
Material for diagnosis			
Whole animals	149	3,565	2,853
Other specimens	4,930	4,900	73,230 <sup>b</sup>
Biological products for testing	108	29	66
Etiological agents for identification	27	28	93
Total	5,214	8,522	76,242

<sup>a</sup> January-November.

<sup>b</sup> Of these, 70,273 were received from the pilot program of brucellosis control of Buenos Aires Province, Argentina.

tried as a modified live virus vaccine. During an outbreak of foot-and-mouth disease in British Guiana, 5,000 doses of this vaccine were applied and the preliminary field observations were highly encouraging.

Reference diagnostic services increased in volume through the four-year period. More than 400 samples had been received in 1958. In 1961 the Center received more than 900 samples of virus from 11 countries and examined about 3,000 samples of serum in connection with vaccination experiments. Reference strains of virus and serum were distributed to many laboratories.

Field consultation services were supplied on request to a number of countries. In addition, as a result of the interest expressed by Colombia, Ecuador, Panama, and Venezuela, international conferences on foot-and-mouth disease were held in Colombia (1959) and Venezuela (1960). A similar meeting for Argentina, Brazil, Chile, Paraguay, and Uruguay, planned for 1961, was postponed to 1962. The Center also worked closely with the Government of Argentina in the establishment of the extensive foot-and-mouth disease control program launched in 1961.

In addition to regular bibliographic bulletins, abstracts of papers, and reports, a number of monographs and articles prepared at the Center were published by PAHO and in veterinary journals. Papers on laboratory techniques used for training purposes were revised and expanded to form a manual on foot-and-mouth disease, and the first three chapters were published in Spanish in 1961. A film in Spanish entitled *Puede Ser Aftosa* was prepared at the Center and released in 1961, with copies distributed to Spanish-speaking countries of the Americas free of foot-and-mouth disease.

## V. EDUCATION AND TRAINING

### FELLOWSHIPS

Fellowships are one of the most important means of aiding countries in the development of health services, and the activities of the Organization's fellowship program increased substantially in the period 1958-1961, as shown in Figure 7. The 2,098 fellowships granted represented an increase of 70 per cent over the previous quadrennium. Of these, 804 were granted for advanced studies leading to the degree of Master of Public Health or equivalent. Fellowships of this type were given highest priority because of the contribution that studies at this level made to the development of health services in the fellows' home countries. Another 698 fellowships were given for attendance at short, special, or nonacademic courses. Travel fellowships, 596 in number, were granted mainly to senior health officials and to professors for study visits to observe

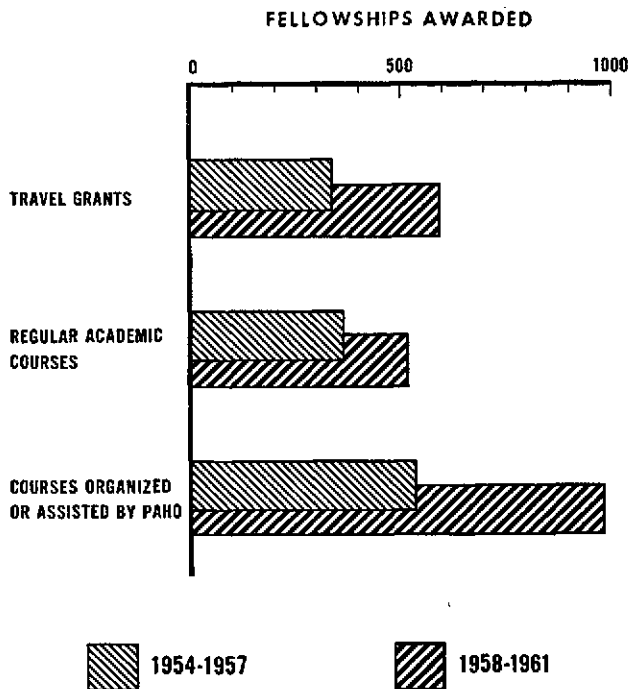


FIG. 7. FELLOWSHIPS AWARDED IN THE AMERICAS BY TYPE OF TRAINING, 1954-1957 AND 1958-1961.

health work and teaching centers in other countries. All the countries of the Americas participated in the fellowship program. Total awards for study in the Americas are shown in Table 23, while Table 24 shows the distribution of fellowships by country of origin and type of training of the recipients.

### Fields of Study

Details of fellowships by field of study are shown in Table 25. The greatest number were granted in the field of communicable diseases, and 418 of these were for the study of malaria. Malaria fellowships, as shown in Figure 8, were most numerous in 1958, the year of peak recruitment and training of professional staff for national and international malaria eradication work. Only training to replace vacancies caused by normal turnover in the Americas and fellowships to students from other Regions are anticipated in this field in the future.

Following malaria in order of importance were other communicable diseases, environmental sanitation, nursing, public health administration, maternal and child health, and clinical medicine. "Other health services" included statistics, mental health, health education, dental health, and miscellaneous special subjects.

It should be noted that, despite the breakdown of fellowships by specific fields of study, regular academic courses generally provided a broader range of training

TABLE 23. FELLOWSHIPS AWARDED IN THE AMERICAS AND FELLOWS FROM OTHER REGIONS WHO STUDIED IN THE AMERICAS, 1958-1961

Origin of fellows	1958	1959	1960	1961	Total
Fellowships awarded in the Americas	560	505	516	517	2,098
Fellows from other Regions who studied in the Americas	144	159	107	134	544
Total	704	664	623	651	2,642

TABLE 24. FELLOWSHIPS AWARDED IN THE AMERICAS BY COUNTRY OF ORIGIN AND TYPE OF TRAINING, 1958-1961

Country of origin of fellows	Type of training			Total	
	Courses organized or assisted by PAHO/WHO		Regular academic courses		Travel grants
	Special	Academic			
Argentina	67	50	81	43	241
Bolivia	28	17	23	17	85
Brazil	84	7	21	67	179
Canada	-	-	4	3	7
Chile	17	1	16	52	86
Colombia	63	41	55	61	220
Costa Rica	20	7	7	8	42
Cuba	18	7	15	15	55
Dominican Republic	5	6	7	8	26
Ecuador	24	10	21	7	62
El Salvador	22	3	4	17	46
Guatemala	44	15	18	8	85
Haiti	9	3	14	15	41
Honduras	20	8	13	13	54
Mexico	21	15	16	65	117
Nicaragua	24	3	13	8	48
Panama	30	11	14	3	58
Paraguay	25	21	31	17	94
Peru	39	39	72	16	166
United States	2	-	1	37	40
Uruguay	33	12	7	6	58
Venezuela	27	11	20	23	81
British territories	60	-	40	72	172
Departments of France in the Americas	2	1	1	11	15
Surinam and the Netherlands Antilles	14	-	2	4	20
<b>Total</b>	<b>698</b>	<b>288</b>	<b>516</b>	<b>596</b>	<b>2,098</b>

- None.

so that, notwithstanding the nominal specialty field of study, fellows were equipped to assume a variety of duties on their return home.

The shifting emphasis in fields of study, as compared to the previous quadrennium, is shown in Figure 9. In percentage terms, the greatest increases were in medical science and teaching (160 per cent) and in clinical medicine (114 per cent). In absolute numbers, communicable diseases and environmental sanitation increased most—the latter being related largely to the growing activity in the field of water supply.

### Place of Study

All countries of the Hemisphere offered the use of their health services and teaching institutions for the training of fellows. Certain institutions which were particularly well equipped to receive foreign students were naturally

used most—among them the Schools of Public Health in Brazil, Chile, Mexico, and the United States of America and the School of Malariology and Environmental Sanitation of Venezuela. Details regarding country of training are given regularly in the Annual Report of the Director.

### Services to Fellows

In the last few years, the selection of fellows was facilitated by the establishment of selection committees in the different countries. Following selection, fellows in countries where the Organization maintains offices received special briefing before beginning their studies. At Headquarters, the Fellowship Branch became a member of the National Association of Foreign Student Advisers in order to provide better service to fellows studying in the United States.

TABLE 25. FELLOWSHIPS AWARDED IN THE AMERICAS BY COUNTRY OF ORIGIN AND FIELD OF STUDY, 1958-1961

Country of origin of fellows	Field of study								Total
	Public health administration	Sanitation	Nursing	Maternal and child health	Other health services	Communicable diseases	Medical science and education	Clinical medicine	
Argentina	30	30	30	15	62	55	18	1	241
Bolivia	8	17	6	1	10	39	4	-	85
Brazil	9	3	17	2	18	117	11	2	179
Canada	1	-	-	1	3	-	2	-	7
Chile	10	8	19	3	5	14	24	3	86
Colombia	24	36	9	2	34	107	5	3	220
Costa Rica	1	2	10	-	9	19	-	1	42
Cuba	15	8	4	-	4	23	1	-	55
Dominican Republic	3	10	1	2	2	8	-	-	26
Ecuador	8	4	6	1	6	37	-	-	62
El Salvador	6	9	2	-	3	20	6	-	46
Guatemala	6	18	23	1	8	28	1	-	85
Haiti	3	11	3	1	4	17	2	-	41
Honduras	8	6	6	-	8	21	5	-	54
Mexico	16	27	4	2	18	39	8	3	117
Nicaragua	1	1	13	-	9	20	4	-	48
Panama	3	10	7	-	11	27	-	-	58
Paraguay	20	24	8	8	8	26	-	-	94
Peru	37	27	21	5	16	53	-	7	166
United States	2	-	7	1	5	3	22	-	40
Uruguay	3	14	13	2	9	15	2	-	58
Venezuela	4	24	7	-	11	25	7	3	81
British territories	5	54	21	3	26	56	2	5	172
Departments of France in the Americas	2	-	3	2	3	3	-	2	15
Surinam and the Netherlands Antilles	-	-	2	-	3	15	-	-	20
Total	225	343	242	52	295	787	124	30	2,098

- None.

TABLE 26. FELLOWSHIP EXPENDITURES IN THE AMERICAS, 1958-1961<sup>a</sup>  
(U. S. dollars)

Year	Pan American Health Organization			World Health Organization		Total
	Regular funds	Special Malaria Fund	Other funds	Regular funds	Technical Assistance funds	
1958	155,395	206,610	7,590	393,420	146,825	909,840
1959	330,773	110,811	24,375	374,676	82,060	922,695
1960	325,830	105,125	54,989	370,101	121,120	977,165
1961	594,470	46,200	12,217	316,730	111,332	1,080,949
Total	1,406,468	468,746	99,171	1,454,927	461,337	3,890,649

<sup>a</sup>Figures represent amounts obligated in each year.

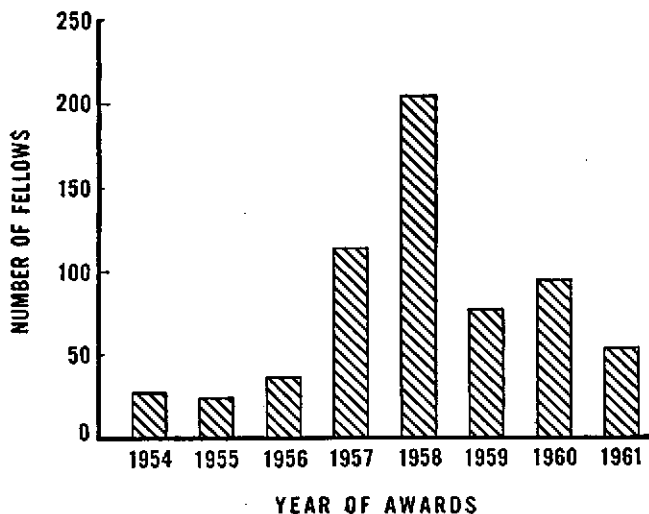


FIG. 8. MALARIA TRAINING FELLOWSHIPS IN THE AMERICAS, 1954-1961.

### Cost of Fellowships

Variations in dollar exchange rates, increases in tuition fees and in the cost of living in general, as well as the growing number of fellowships granted, made for increases in cost. From January 1958 to December 1961, for example, the monthly stipend paid to students in the United States rose 25 per cent, in Brazil 27 per cent (in dollars), in Mexico 50 per cent, and in Chile 82 per cent (in dollars), because of the increased cost of living. Be-

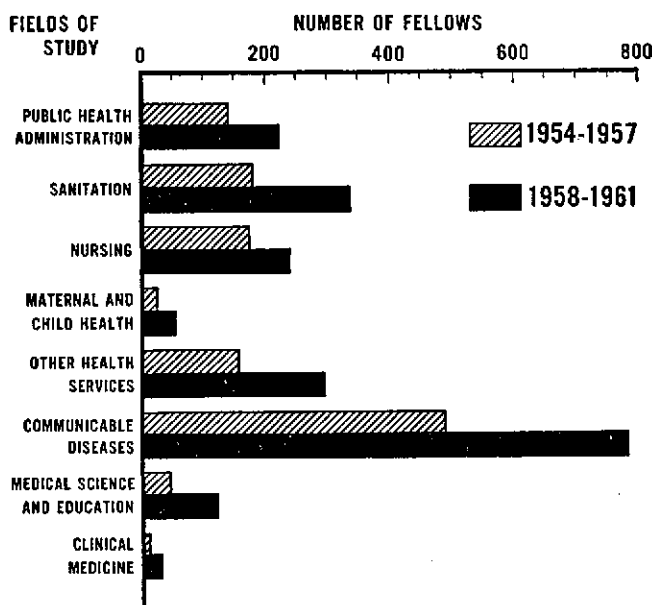


FIG. 9. FELLOWSHIPS AWARDED IN THE AMERICAS BY FIELD OF STUDY, 1954-1957 AND 1958-1961.

TABLE 27. FELLOWS FROM OTHER REGIONS WHO STUDIED IN THE AMERICAS BY TYPE OF STUDY, 1958-1961

Region	Type of study			Total
	Courses organized or assisted by PAHO/WHO	Regular academic courses	Travel grants	
Africa	4	39	47	90
Eastern Mediterranean	23	48	32	103
Europe	2	38	106	146
South-East Asia	6	73	24	103
Western Pacific	7	43	52	102
Total	42	241	261	544

tween 1958 and 1961, annual tuition fees rose from \$405 to \$460 in Latin American schools and from \$710 to \$1,075 in North American schools. Cost data by source of funds are shown in Table 26. The increase in all funds from 1958 to 1961 reflects a rise from \$1,625 to \$2,091 in average expenditure per fellow trained.

### Fellows from Other Regions

During the last four years, other Regional Offices of the World Health Organization sent 544 fellows to study in American countries. This is an increase of 37 per cent over the 396 fellows of the previous quadrennium. Details are shown in Table 27. The increases over the previous period were 84 per cent for the Eastern Mediterranean Region, 64 per cent for South-East Asia, 45 per cent for Africa, 25 per cent for Europe, and 2 per cent for the Western Pacific.

## MEDICAL EDUCATION

In the period under review, the Organization continued to cooperate with Member Governments in the field of medical education, with increasing emphasis on improving training and ensuring that medical instruction was planned to meet the needs of the countries. It was considered of particular importance to stimulate the teaching of preventive aspects of medicine in every phase of the course of study.

Fellowships were provided for professors from medical



schools, and a study of the teaching of basic medical sciences in Latin America was undertaken in cooperation with the Latin American Association of Physiological Sciences in 1958-1959. The results of the study, which are presented in detail in Table 28, showed that the vast majority of professors devoted only part of their time (in no case more than five hours per day) to teaching.

In view of the interest of many medical schools in revising and bringing up to date their curricula, the Organization cooperated with Member Governments in the organization of a variety of meetings, round-table discussions, and seminars to facilitate the exchange of views among medical educators.

The teaching of pediatrics offers an excellent opportunity to emphasize the close relationship between basic medical sciences, clinical medicine, preventive medicine, and the utilization of public health services which is necessary for an effective attack on the important problems of morbidity and mortality in childhood in the Americas. For this reason, a seminar on the teaching of pediatrics was held in Colombia in 1958 for the medical schools of Colombia and Venezuela. The participants included deans of medical schools, professors of pediatrics and preventive medicine, and representatives of the pediatric societies and maternal and child health services of the two countries.

The Organization cooperated with the Governments of Honduras and Venezuela in organizing seminars on the general teaching of medicine, and in 1959 cooperated with the Colombian Association of Medical Schools and the Kellogg and Rockefeller Foundations in a seminar on the teaching of internal medicine. The emphasis at these seminars was on the inclusion of public health concepts in the teaching program.

TABLE 28. TEACHERS OF BASIC MEDICAL SCIENCES IN SIXTY-SEVEN SCHOOLS OF MEDICINE IN LATIN AMERICA, BY TIME DEVOTED TO TEACHING, 1957

Field	Number of teachers	Per cent of faculty teaching:		
		Exclusively <sup>a</sup>	Full time <sup>b</sup>	Part time <sup>c</sup>
Morphological sciences	656	9.7	2.7	87.4
Physiological sciences	699	19.6	8.3	72.1
Pathological sciences	657	18.7	7.8	73.5
Other basic medical sciences	23	21.7	0.0	78.3
Total	2,035	16.2	6.2	77.6

<sup>a</sup> Teaching is sole occupation.

<sup>b</sup> Teaching full-time but with a secondary occupation.

<sup>c</sup> Teaching five hours or less per day.

The Organization cooperated with the Government of Mexico in organizing a series of round-table discussions on the introduction of general principles of public health in the curricula of medical schools. In the period 1958-1961, these round-tables were concerned with the teaching of biostatistics, environmental sanitation, health education, and epidemiology.

Comparable data for the entire quadrennium are not available, but in 1960 and 1961, 108 faculty members from medical schools in Latin America received fellowships or travel grants for the study of basic sciences, and 159 faculty members received fellowships or grants to study in the fields of clinical medicine, preventive and social medicine, and medical school organization and administration. The awards aided 48 medical schools in 15 countries and were provided by PAHO/WHO and 10 cooperating agencies.

Short-term consultants of the Organization provided services, in connection with administrative procedures and problems, to a number of medical schools. A special study tour was arranged for the deans of four medical schools in Argentina to pay group visits to medical schools in Brazil, Colombia, Puerto Rico, and the United States, and to attend the Second World Conference on Medical Education.

## Medical Education Information Center

Fourteen organizations and agencies participated in the activities of the Medical Education Information Center (MEIC). They included the American Medical Association, the Association of American Medical Colleges, the Agency for International Development, the Kellogg Foundation, the Organization of American States, the Pan American Sanitary Bureau (Secretariat), the Rockefeller Foundation, and the United States Public Health Service. Meetings were held once or twice a year to review and analyze the work of the participating agencies in the field of medical education in Latin America.

Eleven fellowship-awarding agencies continued to cooperate in reporting their fellowship awards to MEIC for the purpose of compiling a quarterly report to be distributed to the participating agencies. The reports developed to a new format, with a number of improvements and innovations. They were designed to give a total picture of fellowships and travel grants awarded to faculty members of medical, nursing, and public health schools in Latin America.

A series of MEIC directories were published, listing names of deans, names of schools, and their addresses, which were distributed to MEIC members and other inter-

ested individuals and institutions. Revised editions were published periodically and supplementary directories for related professions were also issued.

## VETERINARY MEDICAL EDUCATION

The active interest of official health agencies in the zoonoses and in food hygiene and the growing importance of biomedical research have stimulated the schools of veterinary medicine to increase teaching in public health and comparative medicine. This development is changing the emphasis of veterinary medicine to service to medicine as a whole, rather than its former almost exclusive service to agriculture.

The need of ministries of health for more and better trained veterinary officers has led PAHO to establish an active program in this field. Assistance was provided to schools of public health to improve the postgraduate teaching of veterinarians, and fellowships were given for professors of preventive medicine in schools of veterinary medicine. Through the use of specialized short-term consultants nearly all schools of veterinary medicine were analyzed as to facilities, staff, and curriculum, and recommendations were made for improved teaching of public health and related subjects. Technical guidance was provided in the development and conduct of research projects in the biomedical field.

During 1958-1959 PAHO conducted a survey of all schools of veterinary medicine in the Americas. Information from 45 schools showed an output of some 1,000 graduates per year, with considerable differences in the facilities and training provided.

In 1959 the Organization organized and cosponsored a Seminar on Teaching Public Health in Schools of Veterinary Medicine in the Americas, at the University of Kansas City, U.S.A., which was attended by representatives from nearly all the schools in the Americas. In addition to being the first hemisphere-wide meeting of veterinary educational institutions, it was one of the first international meetings in veterinary medicine cosponsored by the U.S. Public Health Service. The 81 participants developed guidelines on teaching objectives, curriculum, teaching staff and facilities, teaching methods and aids, and research and community services.

Throughout the period of this report many publications of technical interest were obtained in volume and sent to all schools of veterinary medicine. In addition, the Veterinary Public Health Advisers of the Organization made frequent consultant and teaching visits to the schools.

## NURSING EDUCATION

When the development of nursing was in its initial stages, the Organization's collaboration in nursing education in the Americas stressed the basic preparation of nursing students. With at least one modern school of nursing functioning in the majority of the countries of Latin America, however, programs for advanced nursing education received emphasis in the last four years, since greater returns were obtained from the preparation of nurse instructors and supervisors, who in turn prepared student nurses and auxiliaries. One international adviser, for example, could collaborate with two national nurses in preparing either 30 instructors or 30 auxiliaries. In the first case, each instructor could continue the chain of education by training 10 auxiliaries, or 300 for the 30 instructors in one year, while it would take 10 years for an international adviser and two national nurses to train 300 auxiliaries directly.

Table 29 shows the distribution of the Organization's assistance in nursing education, by level of training, in the period 1958-1961. It will be noted in particular that training of auxiliary nursing personnel was proportionally a less important international activity, as well-prepared national nurses assumed increasing responsibility for it.

Programs in basic nursing education in which the Organization collaborated were carried out at two levels, depending upon the development of general education for young women in the various countries of Latin America and their interest in nursing as a career. Three projects were carried out at the secondary school level and two at the university level. Four other projects were begun at the secondary school level, accepting students with at least nine years of general education, but as the schools became better known enough applications were received from young women with complete secondary education to raise the admission requirements to the level of university entrance. Graduates of both types of schools were prepared for teaching and supervision, as well as

TABLE 29. NUMBER OF NURSING EDUCATION PROJECTS IN THE AMERICAS BY LEVEL OF TRAINING, 1958-1961

Level of training	Number of projects			
	1958	1959	1960	1961
Advanced	4	6	11	11
Basic	8	8	8	9
Auxiliary	2	1	1	1

for nursing care, since immediately upon completion of the basic curriculum they were usually employed as head nurses and supervisors of auxiliary nursing personnel.

## Midwifery

In nine countries in Latin America midwifery education was altogether separate from nursing education, preparing private practitioners whose principal function was to attend births. Large numbers of midwives were employed in the health services of several countries.

In order to use midwives more effectively in health services, the Organization collaborated with the Government of Chile in establishing a four-year pilot project from 1958 to 1961. The principal aims were to broaden the basic curriculum in schools of midwifery to include nursing, health and social aspects of maternal and infant care, and principles of teaching and supervision, in order to prepare future midwives for teaching and for work in the maternal and child health services; and to establish short courses for graduate midwives, preparing them to participate more effectively in the maternal and child health field. Bolivia, Paraguay, and Peru requested similar collaboration from the Organization.

For countries such as Costa Rica and Mexico, where midwifery education was considered an advanced specialty in nursing education, the Organization's zone and project nurses continued to cooperate with local programs.

## Publications for Nursing Education

The distribution of three publications on nursing, in Spanish, provided nurses with material for teaching purposes and for self-orientation as to ways of approaching their tasks in the field of nursing education and nursing services. Two of the pamphlets grew out of discussions at the seminars of directors of schools of nursing held in 1960 and 1961, and the third was a translation of a pamphlet distributed by the International Council of Nurses. They were:

*Guía para escuelas de enfermería en la América Latina*, prepared by the participants at the First Seminar of Directors of Schools of Nursing, Paracas, Peru (PAHO Scientific Publication No. 55, 1961); *Revisión del plan de estudios de una escuela de enfermería*, report of the Second Seminar of Directors of Schools of Nursing, Antigua, Guatemala, July 1961 (mimeographed report); and *CIE—Principios básicos de los cuidados de enfermería* (PAHO Scientific Publication No. 57, 1961).

## Surveys of Nursing Resources and Needs

The Organization, which in 1957-1958 had collaborated with the Ministry of Health and the nurses' association in Brazil in conducting a survey of nursing in that country, organized a seminar in which 31 nurses from 10 countries studied the methods used and the results obtained in the Brazilian survey. In 1960-1961 similar collaboration was given to Chile.

Less extensive studies were carried out in Nicaragua and in Ecuador in connection with preparations for revision of the curricula of their schools of nursing. Colombia and Mexico planned surveys for the near future.

## PROFESSIONAL EDUCATION IN PUBLIC HEALTH

In the period under review, attention was concentrated on the structure, organization, and administration of schools of public health in Latin America. A number of meetings of directors of schools of public health were planned, and meetings were held in Mexico (1959) and Venezuela (1961).

The 1959 meeting considered the objectives of schools of public health, the scope and method of teaching, and administrative standards for teaching, research, and service to the community. Directors of schools in Argentina, Brazil, Chile, Mexico, Puerto Rico, and Venezuela attended.

The 1961 meeting grouped the directors of the same schools and of the new School of Public Health of Bogotá, Colombia, together with the professors of biostatistics. The teaching of biostatistics in schools of public health was analyzed in detail and specific recommendations were formulated.

As in the past, the Organization continued its program of assistance in this field, with particular emphasis on the Schools of Public Health of São Paulo, Brazil, Santiago, Chile, and Mexico City, Mexico—which provided the greatest share of training on an international basis—and also aided the new School of Public Health in Buenos Aires, Argentina. Staff of the Organization lectured at most schools of public health in Canada and the United States. Fellowships continued to be awarded to faculty members.

Posts of Professional Education Consultants were established in the various Zones, in order to aid schools of public health and schools of medicine to improve their teaching programs, and active recruitment of consultants was begun.

## LIBRARY

In the reorganization of headquarters services which occurred during the period under review, the Library was transferred to the Professional Education Branch. The main services provided are shown in Table 30.

New books, pamphlets, periodicals, and films relating to public health and related disciplines were added to the collection. In the continuous process of reviewing and selecting material to be kept, the pamphlet and periodical collections were given particular attention. A number of journals were withdrawn from the files in order to obtain space for new reference material required to carry out programs of increasing diversity and scope.

The responsibility for preserving and maintaining the Archives of the Organization was transferred to the Library in 1960. Included in the Archives are agreements signed with Member Governments and nongovernmental organizations.

Increased attention was paid to the requirements of the Zones. The Zone II collection was reviewed and organized in 1958. A basic manual on maintaining Zone Office collections was prepared. New materials were cataloged and classified for the Zone Offices. Reference services and publications were supplied through Zone Offices to staff in the field.

A bibliography on onchocerciasis, 1945-1960, supplemented the one published in 1950, and a list of staff

TABLE 30. LIBRARY SERVICES, 1958-1961

Services	1958	1959	1960	1961
Books classified and cataloged	1,544	1,607	1,231	1,856
Requests for information answered	3,353	3,612	4,173	3,889
Books circulated	3,908	4,411	2,535	4,113
Bibliographies compiled	16	22	16	8

papers written since 1950 was compiled. In addition to bibliographical work for internal use, material was provided for the section on Medicine and Public Health of the *Revista Interamericana de Bibliografía*, of the Pan American Union.

In the period 1958-1961, the Library was host to medical librarians from Chile, Ghana, India, Indonesia, Japan, and Venezuela, principally sponsored by the Medical Library Association of the United States, who received fellowships for graduate study and observation.

Work was begun on plans to improve medical librarianship in Latin America, including a seminar to be held in connection with the II International Library Congress in 1963 and a course in medical librarianship for a limited and selected group of librarians at the Inter-American School of Librarianship.

## VI. INFORMATION AND PUBLICATIONS

### SPECIAL PUBLICATIONS

The program of Special Publications during 1958-1961 continued to form part of the Organization's service to Member Governments through the wide dissemination of recent technical information to public health services and workers throughout the Americas.

Divided into three series—*Scientific Publications*, *Miscellaneous Publications*, and *Official Documents*—a total of 125 Special Publications, with some 13,700 pages, were issued in the four-year period, as shown in Table 31.

The publications are listed in detail in the Annual Report of the Director and in the PAHO catalog of publications, 1962.

The items in the Scientific series covered a wide range of subjects. For the sixth time, the Organization translated and published, with the authorization of the American Public Health Association, the current edition of the APHA handbook *Control of Communicable Diseases in Man*. The ninth edition (APHA, 1960) appeared in Spanish in 1961 as PAHO Scientific Publication 51, and was distributed widely in the Member Countries, and the Portuguese version was prepared for publication in 1962.

Among the technical manuals printed were the Spanish translation of the USPHS 1959 manual *Serologic Tests for Syphilis* (1960), a reissue of the Spanish edition of *Laboratory Techniques in Rabies* (WHO Mon. Ser. 23) in 1958, and a detailed manual on the construction and operation of slaughterhouses, *Aspectos sanitarios a con-*

*siderar en la construcción y operación de mataderos* (1960). A *Manual of the Microscopic Diagnosis of Malaria* appeared in English and Spanish in 1960 and preparations were completed for the printing of a revised edition in 1962. Other publications on venereal diseases included the Spanish editions of *Syphilis—Modern Diagnosis and Management* (USPHS, 1960), issued in 1961, and of the WHO compilation of legislation *Enfermedades venéreas—Estudio de la legislación vigente* (1959).

In addition to the publication of reports on seminars on nursing education, the *Guía para escuelas de enfermería en la América Latina* (1961) was prepared as a guide for nursing schools. A Spanish edition of the International Council of Nurses manual *ICN—Basic Principles of Nursing Care* was issued for distribution in Latin America in 1961.

The reports and working papers of a number of PAHO/WHO-sponsored seminars and conferences continued to appear in the Special Publications series, including the reports on two seminars on diarrheal disease in childhood (1958), the Seminar on Leprosy Control (1959), the First Conference on Schools of Public Health (1960), two international foot-and-mouth disease conferences (1960), and the 1960 Seminar on Water Rates, whose report took the form of the manual *Tarifas de agua* (1961).

The two volumes *Live Poliovirus Vaccines* (1959 and 1960) compiled the papers and discussions of the First and Second International Conferences on Live Poliovirus Vaccines, held in Washington in 1959 and 1960, respectively. These volumes have been distributed widely both in the Americas and in other regions of the world.

A Spanish edition of the booklet *Public Exposure to Ionizing Radiations* (APHA, 1958) was distributed in Latin America in 1959 as PAHO Scientific Publication 43. The annotated edition of the *International Sanitary Regulations* (WHO, 1957 ed.) was also published in Spanish in 1959. Reference works on onchocerciasis, leptospirosis, yearly reports of the Pan American Foot-and-Mouth Disease Center, and yearly prospectus of the International Course on Malaria and Other Arthropod-Borne Diseases (Maracay, Venezuela), were also issued during the period under review.

A number of special statistical publications were issued

TABLE 31. SPECIAL PUBLICATIONS ISSUED, 1958-1961

Type of publication	Number of publications	Number of pages	Copies printed
Scientific Publications series	34	4,765	87,620
Miscellaneous Publications series	50	1,524	204,100
Official Documents series	34	7,126	31,685
Other publications	7	346	41,800
Total	125	13,761	365,205

by the Organization. Summaries of *Reported Cases of Notifiable Diseases in the Americas* were published in Spanish and English for the periods 1946-1955, 1949-1958, and 1959-1960. A *Guide for the Reports on the Aedes aegypti Eradication Campaign in the Americas* was published in English and in Spanish (1960), as were the first reports of the Advisory Committee on Statistics (1960) and the Regional Advisory Committee on the International Classification of Diseases (1961). The *Summary of Four-Year Reports on Health Conditions in the Americas* for 1957-1960 is being presented to the XVI Pan American Sanitary Conference as a companion to the present Report. Other statistical reference works were the *Inter-American Exchange of Reports of Cases of Tuberculosis* (1959) and *List of Categories Taken from the Manual of Statistical Classification of Diseases, Injuries, and Causes of Death* (1958), published in English and in Spanish, and the Spanish adaptation of the USPHS volume *International Classification of Diseases—Adapted for Indexing of Hospital Records and Operation Classification* (1961).

A general information booklet, *Facts on Health Problems*, was issued in 1961 in English and in Spanish and presented to the Punta del Este Meeting of the Inter-American Economic and Social Council. *Health in the Americas and the Pan American Health Organization*, prepared by the Organization and published in English by the Subcommittee on Reorganization and International Organizations of the United States Senate, was published in Spanish and in Portuguese in 1960.

Information booklets reflecting policies and trends in international public health included *On Health and Wealth* (English and Spanish editions, 1960, Portuguese, 1961), *Health—A Basic Component of Economic Development* (1961), and *Salud, crecimiento económico y progreso social en la América Latina* (1961), a compilation of articles on health matters discussed at the Punta del Este Meeting of the Inter-American Economic and Social Council in 1961.

The Miscellaneous Publications series included information pamphlets on yellow fever, water supply, zoonoses, child mortality, the treatment of rabies, and the popular booklet *PAHO—What It Is, What It Does, How It Works*.

The PAHO Official Documents series, published each year in English and in Spanish, continued to be issued as essential background material for the meetings of the Organization's Governing Bodies and as a permanent record of PAHO activities. The 34 volumes issued in 1958-1961 comprised the yearly *Proposed Program and Budget Estimates*, the *Financial Reports of the Director and Reports of the External Auditor*, the *Annual and Quadrennial Reports of the Director*, and the *Proceedings of the Meetings of the Governing Bodies* (XV Pan Ameri-

can Sanitary Conference; X, XI, and XII Meetings of the Directing Council and 30th-42nd Meetings of the Executive Committee). The third edition of the *Basic Documents* of PAHO appeared in 1958 and the fourth edition was prepared for publication in 1962.<sup>1</sup>

## PERIODICAL PUBLICATIONS

The *Boletín de la Oficina Sanitaria Panamericana*, monthly Spanish-language journal of the Bureau, completed its thirty-ninth year of publication in 1961. With the steady growth in readership, the pressrun increased from 8,400 copies per month in 1958 to 9,800 in 1961. Between 70 and 80 technical articles were published each year, representing about 50 per cent of articles submitted. The *Boletín* also provided information on the work of the Governing Bodies of the Organization and on national and international meetings of interest to public health workers. The *Monthly Calendar of International Meetings* was incorporated in the *Boletín* in 1960.

The *Weekly Epidemiological Report* and the quarterly bulletin *Health Statistics* continued to be published during the period under review.

The *PAHO Quarterly*, a semitechnical journal in English and in Spanish, was inaugurated in 1956 but its circulation was limited and publication stopped with the fourth issue of 1959.

In July 1958 a bimonthly publication, *Erradicación de la malaria*, for malaria eradication workers was begun, and in 1960, a limited edition in English, *Malaria Eradication*, was started for distribution to malaria workers in English-speaking countries of the Americas.

The work of the Organization in bringing information to the health professions of the Americas through publications is reflected in the statistics of distribution of publications shown in Table 32.

## PUBLIC INFORMATION

The years 1958-1961 saw a marked expansion in the Organization's program of public information. Information activities more than doubled, with many new services being added. Among these new services were:

*Mats Service*.—Mats are brief articles of some 200-400 words of text with an accompanying photograph. Both text and photograph are reproduced on a perforated cardboard sheet, or "mat," which may be used directly in a newspaper's press, thereby saving time, money, and work.

<sup>1</sup> Official Document PAHO 42, 1962.

TABLE 32. COPIES OF PUBLICATIONS DISTRIBUTED, 1958-1961

Type of publication	1958	1959	1960	1961	Total
<i>Boletín de la Oficina Sanitaria Panamericana</i>	96,818	107,573	108,394	128,515	441,300
<i>PAHO Quarterly</i>	6,166	10,103	2,697	-	18,966
<i>Monthly Calendar of International Meetings</i>	8,008	5,965	860	-	14,833
<i>Malaria Eradication</i>	3,675	3,484	2,958	1,775	11,892
Special Publications	60,800	65,800	91,200	70,700	288,500
Other PAHO publications	10,834	20,220	35,498	27,844	94,396
WHO publications	12,449	6,549	10,194	22,628	51,820
Other publications	1,590	845	215	1,457	4,107
Total	200,340	220,539	252,016	252,919	925,814

- None.

The mats service was begun in 1960. By the end of 1961, 12 mats had been distributed and all of them received wide use throughout the Hemisphere.

*Illustrated Features.*—These differ from mats in that they contain from 500 to 1,200 words of text together with one to five glossy photographic prints, permitting newspapers and magazine editors to select and arrange the material as desired. This service was begun in 1959. The Office of Public Information has produced an average of one illustrated feature every two months.

*PAHO Information Series.*—This series, made up of brief statements ("flyers") on the Organization and its work, is designed for general distribution to lay audiences. A total of 40,000 copies of *Then and Now—Past and Present in the Fight for Better Inter-American Public Health* and of *Malaria Eradication in the Americas—The First Six Years in the Hemisphere-Wide Campaign*—were distributed in English, Portuguese, and Spanish.

*Press Kits.*—In addition to the regular information kits mailed to schools, civic groups, lay organizations, and private citizens, the Office began in 1959 a new kit service designed to fill the needs of reporters, editors, and columnists. These press kits include articles, photographs of PAHO/WHO activities, suggested topics for editorial comment, and background material on the Organization. Press kits are particularly effective for fostering better observance of World Health Day and in bringing special events to the attention of newspapers and magazines and, through them, to the general public.

*Internal Program of Staff Information.*—This service, begun in 1960, is directed exclusively to the Organization's internal public—its staff members. It includes lobby displays, information letters to staff on important events, home distribution of *World Health* magazine, talks, and showings of health films.

## VISUAL AIDS

In the period under review, work in visual aids was mainly concerned with the preparation of illustrations for technical publications, the design, construction, and display of exhibits, the design and illustration of information literature, and visual aids such as filmstrips, slides, and posters. A file of photographic negatives covering headquarters and program activities was organized and the professional photographic coverage of headquarters and field projects was stimulated.

From 1961, increasing emphasis was placed on the use of visual and audiovisual communications media to improve the exchange of knowledge, techniques, and information within public health programs. Assistance was given in providing audiovisual training tools to schools engaged in the professional training of public health personnel and for use in seminars and courses held for training auxiliary health workers.

During the four years, 2,626 items of drafting were prepared and 127 exhibits displayed—some of which were awarded Certificates of Merit by the American Public Health Association, the Veterinary Medical Association, and others. The publications *Health in the Americas* and *the Pan American Health Organization*, the *Manual of the Microscopic Diagnosis of Malaria*, the booklet *Facts on Health Problems*, and the September-October 1961 issue of *World Health* magazine (devoted to the Americas) made extensive use of visual aids. Twelve information booklets were designed. A total of 859 projection slides were prepared, 1,112 photographic negatives were added to the collection, and 3,070 captioned photographs were distributed.

## VII. ADMINISTRATION AND ORGANIZATION

### ORGANIZATIONAL STRUCTURE AND ADMINISTRATIVE DEVELOPMENTS

During 1959 certain organizational changes in the headquarters establishment were introduced. These changes clarified the areas of responsibility of the Assistant Director and the Secretary General and transferred certain operational responsibilities to other parts of the Bureau.

It was decided at that time that the positions of Chief, Division of Public Health, and Chief, Division of Education and Training, would remain vacant for one year. During that period the Branch Chiefs of the two Divisions served directly under the Secretary General and were charged with responsibilities for internal administration of the Branches previously undertaken by the Division Chiefs.

At the same time the Zone Offices, El Paso Field Office, the Institute of Nutrition of Central America and Panama, and the Division of Administration were placed under the general supervision of the Assistant Director.

In July 1961, after a year and a half of experience under this arrangement, it was felt that the divisional structure at Headquarters, and therefore the posts of Chief of Division, could be abolished. From that date, the chiefs of the Technical Branches as well as the Office of Evaluation and Reports were under the supervision of the Secretary General and the chiefs of the Administrative Branches reported to the newly-created Chief of Administration, who served under the Assistant Director. The Office of Public Information was placed under the supervision of the Assistant Director. The Office of Research Coordination and the Office of Planning, established during 1961, were placed under the supervision of the Director.

These changes were designed to streamline the headquarters operation, make for more effective coordination of activities, and utilize the three Executive Officers to the fullest extent in planning and carrying out the work of the Organization.

#### Permanent Headquarters Building

The effort and planning, for which great credit is due to officials of the U.S. Government, led to the signing by

the President of the United States of America of Public Law 86-395, on 28 March 1960, authorizing the donation of a site for the permanent headquarters building of PAHO, followed by legislation which appropriated the money to purchase a building lot at Virginia Avenue and 23rd Street, N.W., in Washington, D.C. This lot had an area of 45,644 square feet and its cost was \$1,092,150.

At the beginning of the period under review, the Permanent Subcommittee on Buildings and Installations, which had been established by the Executive Committee some years before, was composed of the Dominican Republic, Guatemala, and the United States. Mexico and Venezuela served from mid-1958 to mid-1960, and in 1961 the Subcommittee was composed of Argentina, Chile, and the United States. In January 1961, pursuant to delegated authority from the XII Meeting of the Directing Council and the 42nd Meeting of the Executive Committee, the Subcommittee approved the conditions of the international competition for the architectural design of the building, selected a jury to review the designs submitted, and instructed the Director of PASB to submit a proposal to the Kellogg Foundation for a grant of funds. In May 1961, the Board of Trustees of the W. K. Kellogg Foundation approved a grant of \$3,750,000, which is described below under Budget Management and Finance (page 74).

The international competition closed on 15 September 1961 with 58 designs submitted by architects from 11 countries. The jury selected the following winners:

- First Prize: Architect Román Fresnedo Siri, Montevideo, Uruguay
- Second Prize: Architect José Luis Benlliure, Mexico, D.F., Mexico
- Third Prize: Architect Adolfo F. Pozzi Guelfi, Montevideo, Uruguay

In October 1961, the U.S. Government purchased the building site. At the request of the Director, the U.S. Government was to retain title and manage the property until it was needed to begin construction of the new building.

Preliminary meetings were held with the National Capital Planning and Fine Arts Commissions for necessary clearances, and steps were taken to obtain approval of the height of and access to the building. It was hoped that the building could be occupied in 1964.



## Basic Documents

The Executive Committee's Subcommittee on Basic Documents, appointed in compliance with Resolution XXXIV of the XV Pan American Sanitary Conference to make a study of the texts of the PAHO Constitution and the Rules of Procedures of its Governing Bodies "for the purpose of achieving greater clarity of expression and adequate equivalence of meaning between the English and the Spanish texts," was provided with PASB staff assistance throughout its two and one half years of active work and some 28 meetings. The Subcommittee was originally composed of Brazil, Mexico, and the United States, with El Salvador replacing Mexico in August 1960.

The Directing Council, with only minor changes, adopted the revised texts of the Constitution and the Rules of Procedure of the Council at its XIII Meeting in October 1961 and recommended to the XVI Pan American Sanitary Conference the adoption of the revised text of the Rules of Procedure of the Conference. The 45th Meeting of the Executive Committee adopted the proposed revision of its Rules of Procedure.

## Management Activities

In assisting other offices in the continuing review and improvement of procedures, the Management Section conducted major management surveys of the Finance Section, administrative services in the Fellowship Branch, the personnel activity of the Bureau, and the Records and Communications Unit. An improved system for recording formal delegations of authority was developed, and delegations were issued to cover all activities of the Washington Headquarters Office. The PASB/WHO Manual, the principal vehicle for the recording of prescribed policy and procedure, was expanded from 660 to over 1,200 pages, covering all the major administrative activities of the Organization. Revisions were issued regularly to reflect changes in policy and procedure. A revised correspondence manual was issued in order to establish common practice in this necessary segment of the Bureau's work.

## Personnel Activities

During the period 1958-1961 the staff strength of PASB/WHO increased 24.4 per cent, from 725 to 902, exclusive of consultants and other short-term personnel. Staff at Washington Headquarters increased by 10 per cent (21 persons). Zone Office and project strength in the field increased 30.5 per cent (156 persons). Details are shown in Table 33.

TABLE 33. COMPARATIVE STAFF STRENGTH, WASHINGTON AND FIELD, 1958-1961

Year	Washington		Field		Total staff
	Number of staff	Per cent of total	Number of staff	Per cent of total	
1958	215	29.7	510	70.3	725
1959	222	28.6	555	71.4	777
1960	229	27.4	608	72.6	837
1961	236	26.2	666	73.8	902

The recruitment of fully qualified public health personnel continued to be a critical problem. This was due in part to the inadequate compensation offered by international organizations. In an effort to offset this difficulty, Member Governments were requested to study the possibility of introducing legislation to provide for the secondment of qualified personnel and to offer continued employment security with the national service. Toward the end of 1961, the United Nations adopted the recommendation of the International Civil Service Advisory Board to increase salaries of international personnel in grades P.1 to D.2. It was anticipated that this increase would enable the Organization to attract qualified personnel and fulfill some pending program commitments.

Certain changes in conditions of employment were made. A service benefit was adopted to provide some compensation for expatriate service, pension participation was revised to provide security for short-term employees in case of disability or death, and an assignment allowance was adopted to assist staff members with costs of dislocation (moves between duty stations). In addition, a revised system of pensionable remuneration was put into effect to permit more liberal benefits for staff members and dependents.

In keeping with the Staff Rules of PAHO/WHO, a staff health insurance program was implemented in 1960. This plan included in its coverage all staff members and dependents. Owing to the complexities of a world-wide distribution of staff, it was difficult to find commercial insurance firms to underwrite a satisfactory policy with adequate coverage. Accordingly, the staff health insurance program was underwritten jointly by WHO and PAHO, with contributions by the staff members based on a percentage of their salaries. During this period WHO introduced provisions covering compensation to staff members in the event of death, injury, or illness attributed to the performance of their official duties. These provisions were accepted as a guide for PAHO staff members.

TABLE 34. FUNDS BUDGETED FOR PAHO/WHO, 1958-1961  
(U.S. dollars)

Source of funds	1958	1959	1960	1961	Increase from 1958 to 1961 (per cent)
Pan American Health Organization					
Regular budget	3,000,000	3,600,000	4,100,000	4,800,000	60.0
Other:					
Special Malaria Fund	2,073,450	2,814,070	3,120,600	2,794,504	34.8
Special Community Water Supply Fund	-	-	200,000	221,755	-
Organization of American States, Technical Cooperation Program	324,526	402,098	403,600	523,433	61.3
Grants and other contributions to PAHO	201,754	258,322	261,234	363,213	80.0
INCAP and related grants	311,530	355,000	375,400	527,300	69.3
World Health Organization					
Regular budget	1,533,631	1,613,817	1,813,035	1,911,500	24.6
Technical Assistance Program	1,236,401	1,144,080	915,350	1,072,469	(13.3) <sup>a</sup>
<b>Total</b>	<b>8,681,292</b>	<b>10,187,387</b>	<b>11,189,219</b>	<b>12,214,174</b>	<b>40.7</b>

- None.  
• Decrease.

### Budget Management and Finance

During the period 1958-1961 the budget of the Organization rose more than 40 per cent, from \$8,681,292 to \$12,214,174, as shown in Table 34. In addition, special contributions were received for special purposes. Figure 10 shows the growth of the budget for Headquarters and for other operations in the period under review. The increase in the regular budget of the Pan American Health Organization was an indication of the desire of Member Governments to provide a stable core for the budgetary structure.

The most significant new contributions for a special purpose were those received for the Special Community Water Supply Fund, established in 1960 with monies received from the United States of America and Venezuela. Grants were received from the USPHS-NIH for the planning of the research program of the Organization, as well as for individual research projects.

The sum of \$3,750,000 was given by the Kellogg Foundation as a loan for the construction of a new headquarters building repayable over a period of 20 years, but with the provision that the funds, instead of being returned to the Foundation, would be used by the Organization for program expansion. To accomplish this, the Directing Council approved an addition to the PAHO regular budget, starting in 1962, in the amount of \$187,500 annually, designated as a Special Fund for Health Promotion.

During the four-year period of program and budget growth, financial difficulties were encountered, primarily

due to an inadequate Working Capital Fund and to delayed and partial receipt of quota payments. Table 35 shows the relation of income and expenditure to the authorized budget. Table 36 completes the financial pic-

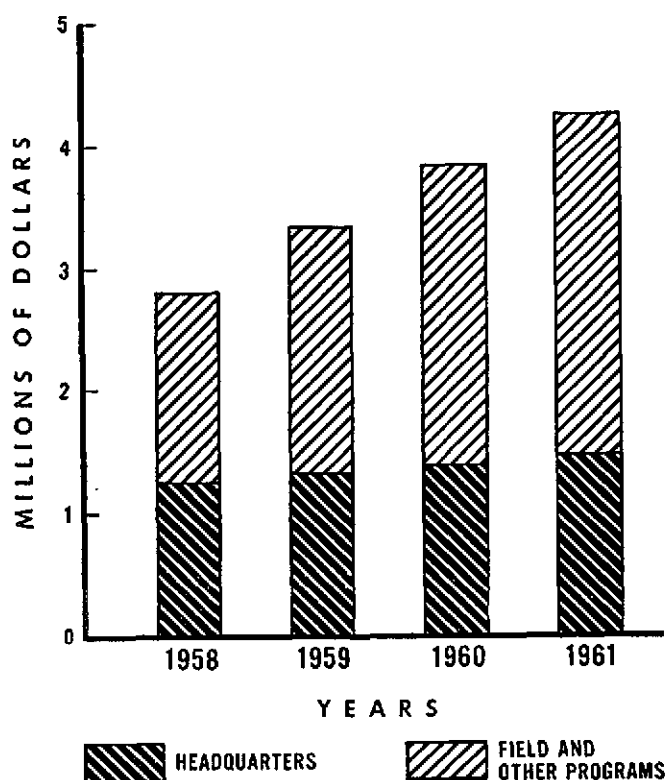


FIG. 10. BUDGET FOR HEADQUARTERS AND FIELD AND OTHER PROGRAMS, 1958-1961.

TABLE 35. PAHO REGULAR BUDGET—APPROPRIATION, INCOME, AND EXPENDITURE, 1958-1961  
(U.S. dollars)

Budget item	1958	1959	1960	1961
Authorized appropriation	3,000,000	3,600,000	4,100,000	4,800,000
Income (quotas and other)	2,572,495	3,541,183	3,641,245	4,955,619
Income as per cent of appropriation	85.75	98.37	88.81	103.27
Expenditure	2,823,474	3,334,010	3,679,395	4,691,745
Expenditure as per cent of appropriation	94.11	92.61	89.74	97.74
Surplus or (deficit)	(250,979)	207,173	(38,150)	263,874

TABLE 36. PAHO REGULAR BUDGET—WORKING CAPITAL FUND, 1958-1961  
(U.S. dollars)

Working Capital Fund	1958	1959	1960	1961
Balance, 1 January	1,225,141	974,162	1,181,335	1,143,185
Change during year from operational surplus or (deficit)	(250,979)	207,173	(38,150)	263,874
Budget provision to increase Working Capital Fund	-	-	-	300,000
Balance, 31 December	974,162	1,181,335	1,143,185	1,707,059

- None.

ture by showing the effect of surpluses and deficits on the Working Capital Fund.

Two major steps were taken to avoid deficits and build up the Working Capital Fund. First, the Director adopted a policy of prudent management to keep the average of budgetary expenditures over any two-year period within the corresponding income level. The second major step was the policy decision of the Directing Council to provide a long-term solution for the Working Capital Fund by instructing the Director to include in the 1961 and future PAHO regular budgets an amount for gradually increasing and maintaining the Fund at its authorized level of 60 per cent of the budget. For the year 1961 an amount of \$300,000 for this purpose was therefore included in the budget.

### Supply Services

A detailed review of procurement resulted in changes which both simplified procedures and made possible financial savings. A new insurance program resulted in approximately 20 per cent reduction in cost. New procedures and changes in contractual arrangements effected savings of approximately 50 per cent in sea and air freight forwarding costs. Economies were realized in the purchase of certain items by expanding the source of supply

and eliminating middlemen wherever possible. During the period under review, procurement personnel declined from 14 to 10 persons. Details of purchasing activities are shown in Table 37.

TABLE 37. PURCHASING ACTIVITIES, 1958-1961

Activity	Number of orders	Number of items	Value (U.S. dollars)
Purchases for PAHO and OAS/TA programs	1,988	9,151	1,379,728
Purchases for WHO regular program	290	2,172	104,706
Purchases for WHO/TA program	112	770	89,309
Purchases made for WHO Headquarters	1,716	7,553	3,210,145
Purchases for operation of PASB Washington Office	1,458	2,690	688,503
Purchases made for Member Governments	1,128	4,398	1,776,666
Contractual services	576	780	845,737
Purchases made through WHO Headquarters	214	1,333	580,006
Total	7,482	28,847	8,674,800
Price quotations obtained for Member Governments	-	7,616	-

- None.

## GOVERNING BODIES

During the period under review, the following meetings of the Governing Bodies of the Organization were held: XV Pan American Sanitary Conference (San Juan, Puerto Rico, 21 September-3 October 1958), and the XI Meeting of the Directing Council (Washington, D.C., 21-30 September 1959), XII Meeting (Havana, Cuba, 14-26 August 1960), and XIII Meeting (Washington, D.C., 3-13 October 1961), as well as twelve meetings of the Executive Committee (34th to 45th), of which two were in San Juan, two in Havana, and eight in Washington, D. C.

Figures 11 and 12 show the Member Countries represented at the Conference and at the meetings of the Direct-

COUNTRIES	MEETINGS			
	XV PANAMERICAN SANIT. CONFERENCE SAN JUAN P. R. 21 SEP. - 3 OCT. 1958	XI WASHINGTON, D. C. 21 - 30 SEPT. 1959	XII HAVANA, CUBA 14 - 26 AUGUST 1960	XIII WASHINGTON, D. C. 3 - 13 OCT. 1961
ARGENTINA				
BOLIVIA				
BRAZIL				
CHILE				
COLOMBIA				
COSTA RICA				
CUBA				
DOMINICAN REPUBLIC				
ECUADOR				
EL SALVADOR				
FRANCE				
GUATEMALA				
HAITI				
HONDURAS				
NETHERLANDS				
MEXICO				
NICARAGUA				
PANAMA				
PARAGUAY				
PERU				
UNITED KINGDOM				
UNITED STATES				
URUGUAY				
VENEZUELA				

ATTENDING
  ABSENT

In accordance with Resolution VIII of the XIII Pan American Sanitary Conference (Santo Domingo, 1950), meetings of the Directing Council are held only in those years in which the Conference does not meet.

FIG. 11. ATTENDANCE AT MEETINGS OF THE PAHO DIRECTING COUNCIL, REGIONAL COMMITTEE OF THE WHO, 1958-1961.

ing Council, as well as those which composed the Executive Committee during the four-year period. Figure 13 shows the intergovernmental and nongovernmental organizations which sent observers to the Conference and the Council meetings.

## XV Pan American Sanitary Conference

At this Conference, the present Director of the Pan American Sanitary Bureau was elected for a term of four years, starting 1 February 1959; he was subsequently appointed by the WHO Executive Board as Regional Director for the Americas.

The Conference, in recognition of the contribution to the health of the Americas by the departing Director, Dr. Fred L. Soper, who had led the Bureau since 1947, named him Director Emeritus and awarded him a scroll and a gold medal, which were presented at a special session of the XI Meeting of the Directing Council.

Another decision of the Conference was to approve an amendment to the Constitution which changed the name of the Organization from "Pan American Sanitary Organization" to "Pan American Health Organization." Amendments to Articles 12-C and 15 of the Constitution, relating to the preparation of draft program and budget proposals and the length of service of the Chairman and Vice-Chairman of the Executive Committee, were also adopted. In addition, the Executive Committee was requested to undertake, with legal assistance, a complete survey of the Basic Documents of the Organization in order to improve the clarity and correspondence of the English and the Spanish texts, and to draft procedures for electing the Director of the Bureau. To fulfill its mandate, the Executive Committee, at its 36th Meeting, established a Subcommittee on Basic Documents which, after a series of meetings, submitted its proposals for amending the Basic Documents to the XIII Meeting of the Directing Council. The Council approved the proposals relating to the Constitution and to its own Rules of Procedure, and the Executive Committee subsequently approved those relating to its Rules of Procedure. Those relating to the Rules of Procedure of the Pan American Sanitary Conference are still pending.

The XV Conference reviewed the work of the Bureau and of the Member Governments in the period 1954-1957 on the basis of the *Annual Report of the Director for 1957*, the *Quadrennial Report of the Director for 1954-1957*, and the *Summary of Four-Year Reports on Health Conditions in the Americas*. It also examined the reports on the status of malaria, smallpox, and *Aedes aegypti* eradication programs, as well as reports on the Institute of Nutrition of Central America and Panama, endemic goiter, the problem of diabetes, the control of drugs, the

The Technical Discussions were brought to a wider audience through the publication of the reports in the *Boletín* of the Pan American Sanitary Bureau.

### Directing Council

At the XI, XII, and XIII Meetings of the Directing Council, as at the XV Pan American Sanitary Conference, the annual reports of the Director on the work of the Bureau were examined, together with reports on the eradication programs under way in the Americas and on budget, financial, and administrative matters.

In addition, one of the most important resolutions of the XI Meeting was that establishing the Special Community Water Supply Fund. This meeting also considered the financial situation of the Organization and adopted measures to improve it.

At the XII Meeting, the Council paid particular attention to economic aspects of health activities in relation to the work of other organizations of the Inter-American System for the economic and social development of the countries of the Hemisphere. This subject was considered further at the XIII Meeting, which examined in detail the role of the Organization in the execution of the plans resulting from the Act of Bogotá and the subsequent Charter of Punta del Este. In connection with the same subject, the XII Meeting suggested to Member Governments that their economic plans take into account the importance of malaria eradication and its contribution to improved levels of living, particularly in rural areas with high incidence of the disease.

In addition to studying the economic questions noted above, the XIII Meeting of the Council approved the General Program of Work of PAHO/WHO for the period 1962-1965, gave detailed consideration to the nutrition program in the Americas, took note of the entry of a large area of Venezuela in the newly-established register of areas where malaria had been eradicated, and examined the financial requirements of a continent-wide antituberculosis campaign and of a water and sewerage program of similar scope. Among other resolutions adopted at this meeting were those relating to the construction of a new headquarters building on land donated by the Government of the United States of America and the establishment of a Special Fund for Health Promotion.

### Executive Committee

As in preceding periods, the principal function of the Executive Committee was the examination of the different program and budget proposals. In conformity with the amendment to Article 12-C of the Constitution, the Com-

COUNTRY	T E R M S			
	FROM	FROM	FROM	FROM
	1958 TO 1959	1959 TO 1960	1960 TO 1961	1961 TO 1962
ARGENTINA			///	///
BOLIVIA				
BRAZIL	///	///		
CHILE			///	///
COLOMBIA		///	///	///
COSTA RICA				
CUBA				
DOMINICAN REPUBLIC				
ECUADOR				
EL SALVADOR		///	///	///
GUATEMALA	///			
HAITI				
HONDURAS	///	///	///	
MEXICO	///	///		
NICARAGUA				///
PANAMA				
PARAGUAY				
PERU	///			///
UNITED STATES	///	///	///	
URUGUAY				///
VENEZUELA	///	///		

FIG. 12. COMPOSITION OF THE PAHO EXECUTIVE COMMITTEE, 1958-1961.

training of public health personnel, the fellowship program, and other technical matters.

On administrative and financial matters, the Conference approved the program and budget proposals submitted to it, the financial reports relating to the preceding period, and a number of amendments to the Staff Regulations.

*Technical Discussions.*—The XV Pan American Sanitary Conference approved the Rules for Technical Discussions. In accordance with these Rules, the following Technical Discussions were held during the period under review:

XV Pan American Sanitary Conference: The prevention of accidents in childhood; XI Meeting of the Directing Council: Technical, financial, and administrative aspects of water supply in the urban environment in the Americas; XII Meeting of the Directing Council: Technical, administrative, legal, and financial aspects of garbage and refuse disposal; XIII Meeting of the Directing Council: Methods of evaluation of the contribution of health programs to economic development.

OBSERVERS	MEETINGS			
	XV * San Juan, P.R. 21 Sep.-3 Oct. 1958	XI Wash., D.C. 21-30 Sep. 1959	XII Havana, Cuba 14-26 August 1960	XIII Wash., D.C. 3-13 Oct. 1961
Canada				
<b>INTERGOVERNMENTAL ORGANIZATIONS</b>				
Inter-American Child Institute				
Inter-American Development Bank				
International Committee on Military Medicine and Pharmacy				
Organization of American States				
United Nations				
FAD				
UNESCO				
UNICEF				
UNTAB				
WHO				
<b>NONGOVERNMENTAL ORGANIZATIONS</b>				
Cuban Society of Public Health				
Inter-American Association of Sanitary Engineering				
International Association for the Prevention of Blindness				
International Committee of Catholic nurses and Medico-Social Workers				
International Confederation of Midwives				
International Conference of Social Work				
International Council of Nurses				
International Dental Federation				
International Hospital Federation				
International Leprosy Association				
International Pharmaceutical Federation				
International Society for Criminology				
International Society for the Welfare of Cripples				
International Union of Architects				
International Union against Tuberculosis				
International Union against the Venereal Diseases and the Treponematoses				
International Union for Health Education of the Public				
League of Red Cross Societies				
Medical Women's International Association				
Pan American Medical Confederation				
Rockefeller Foundation				
W. K. Kellogg Foundation				
World Confederation for Physical Therapy				
World Confederation for Mental Health				
World Federation of Occupational Therapists				
World Federation of United Nations Associations				
World Medical Association				
World Veterinary Association				

ATTENDING



ABSENT



\* IN ACCORDANCE WITH RESOLUTION VIII OF THE XIII PAN AMERICAN SANITARY CONFERENCE (SANTO DOMINGO, 1950), MEETINGS OF THE DIRECTING COUNCIL ARE HELD ONLY IN THOSE YEARS IN WHICH THE CONFERENCE DOES NOT MEET.

FIG. 13. OBSERVERS PRESENT AT MEETINGS OF THE PAHO DIRECTING COUNCIL, REGIONAL COMMITTEE OF THE WHO, 1958-1961.

mittee, at its spring meetings, prepared reports to the Directing Council with its observations and recommendations relating to the budget proposal of the Director for the following fiscal year. During the four years under review, the Committee also paid particular attention to the decentralization of the operations of the Bureau and made recommendations on technical, financial, and administrative matters to the Directing Council and to the Pan American Sanitary Conference.

## ZONE AND FIELD OFFICES

The system of Zone and Field Offices came into full operation in 1952, but assumed its present form in 1958. The period under review, therefore, marked the first four years of operation of decentralization through six Zone Offices and a Field Office in El Paso, Texas. The distribution of responsibilities during this period was as follows:

Headquarters was responsible for activities in Canada and the United States (including Puerto Rico and the U.S. Virgin Islands) and supervised the El Paso Field Office on the United States-Mexico border. Zone I included Venezuela, Surinam and the Netherlands Antilles, French Guiana and the French islands of the Caribbean, and British Guiana and the British islands of the Caribbean. Zone II included Cuba, the Dominican Republic, Haiti, and Mexico. Zone III included British Honduras, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. Zone IV included Bolivia, Colombia, Ecuador, and Peru. Zone V included Brazil. Zone VI included Argentina, Chile, Paraguay, and Uruguay.

As noted in the foregoing chapters on technical subjects, there was a tendency during the four years under

review to increase the kinds of specialized personnel available at the Zone Office level. While staffing was not yet complete, the goal was for each Zone to have resident staff providing services in public health administration, communicable diseases, veterinary medicine, nursing, environmental sanitation, health statistics, health education, nutrition, and professional education. On the other hand, the need for special services such as malaria eradication, leprosy, or yaws and venereal disease control varied from Zone to Zone, depending on the requirements of the Member Governments included. The El Paso Field Office, which was concerned specifically with the border states of Mexico and the United States of America, was by the end of 1961 staffed by a medical officer (Chief of the Office), a sanitary engineer, a veterinary officer, and a nurse.

At the end of 1961, Zone Office and field staff were distributed as follows:

Zone I—17 staff members assigned to the Zone Office and 36 to country or intercountry projects. Zone II—20 staff members assigned to the Zone Office and 58 to country or intercountry projects. Zone III—21 assigned to the Zone Office and 54 to country or intercountry projects. Zone IV—16 assigned to the Zone Office and 58 to country or intercountry projects. Zone V—14 assigned to the Zone Office and 9 to country projects. Zone VI—17 assigned to the Zone Office and 35 to country or intercountry projects. The El Paso Field Office had a staff of 8 at the end of 1961.

Decentralization went even farther than indicated by the staffing of the Zone Offices, however, since the staff of interzone projects were also located in the field. The general trend of distribution of staff between Headquarters and the field in the period 1958-1961 is shown in Table 33 (page 73).





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