Annual Report of the Director 1984

Health for all
by the year 2000...

Pan American
Health Organization

Pan American Sanitary Bureau
Regional Office of the
World Health Organization

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Pan American Health Organization
Pan American Sanitary Bureau/Regional Office of the
World Health Organization
525 Twenty-third Street, N.W.
Washington, D.C. 20037, U.S.A.

To the Member Countries of the Pan American Health Organization

I have the honor of submitting for your consideration the Report of the Director of the Pan American Sanitary Bureau (PASB), Regional Office of the World Health Organization, for 1984. Further innovations have been introduced to make this Report a useful working and analytical document and source of reference.

It has already been said more than once that the *Annual Report* of the Director is part of the Country/PAHO joint programming cycle, in which in each country problems are identified; priorities are determined; and those actions which the governments have decided to develop with the Organization's collaboration in the frame of reference of health for all by the year 2000 are programmed, carried out, and evaluated. The essential matter of the *Report* is an analysis of the facts of this process in the Region during the year. Hence, the document presents the results of the efforts of each government acting separately, and collectively as the Organization, in addressing priority problems and attaining regional goals and objectives. The document must also show the level of coherence of the activities promoted and conducted and their relationship to both the Regional Strategies and the policies established by the Governing Bodies of PAHO/WHO. To this end, the *Report* has been structured as follows:

Part I presents a Region-wide review of the situation in the health sector, the leading problems confronting it, the approaches being taken to solve them, and possible measures for the near future.

Part II examines at the regional level the joint Country/PAHO activities in basic areas of health service infrastructure and the development of health programs, including special program areas. It also examines the mobilization of technical and financial resources and summarizes the major problems.

Part III views the work of the Organization's Governing Bodies in light of the Regional Objectives and Goals. It also describes the measures taken by the governments and the Secretariat to implement the resolutions they have adopted.

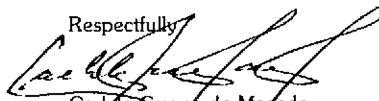
Part IV summarizes the steps taken by the Secretariat to implement the "Managerial Strategy" in support of national priorities and those taken to implement the resolutions of the Governing Bodies.

Part V discusses the activities that each government carried out with PAHO/WHO cooperation in relation to national objectives. A first attempt is made to describe the levels of health in the individual countries and to identify some substantive information on the mobilization of external resources.

The *Report* must be read in conjunction with the *Interim Financial Report of the Director for 1984*, which is also presented to the Directing Council for examination. Hence, this document contains no information on or analysis of financial aspects.

By virtue of its purposes and structure, this *Report* is a working document of the Governing Bodies of PAHO. Therefore, it is hoped that its structure, content, and implications will be examined and discussed; its interpretations and innovations will be analyzed; and its general approach and practical utility to the governments, the Organization, and the Secretariat will be reviewed.

Respectfully,



Carlyle Guerra de Macedo
Director

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HEALTH FOR ALL BY THE YEAR 2000
FRAME OF REFERENCE
REGION OF THE AMERICAS[a]

I. Characteristics of the Goal of HFA/2000	
Comprises the entire population	
Priority human groups	• Population in extreme poverty in rural and urban areas • Human groups exposed to high risk
Health levels	• Increase of life expectancy at birth by means of: — reduction of the prevalent morbidity — control of communicable diseases — elimination of malnutrition — improvement of the environment
Levels of well-being	• Accessibility of the population to basic health services, education, shelter, and environmental services • Improvement in the levels of family income and food supply • Production and consumption structure aimed at satisfying basic needs
II. Regional Goals	
Life expectancy at birth	• No country shall have a life expectancy at birth less than 70 years of age
Infant mortality	• No country shall have an infant mortality rate higher than 30 infant deaths for children under 1 year of age per 1,000 live births
Mortality in the 1-4 age group	• No country shall have a mortality rate in the 1-4 year age group higher than 2.4 deaths per 1,000
Immunization	• 100% vaccination of all infants less than 1 year of age against diphtheria, tetanus, whooping cough, measles, and poliomyelitis • 100% vaccination against tetanus of pregnant women in tetanus endemic areas
Drinking water and basic sanitation—goals for 1990[b]	• Water: *urban areas*: 87% of the population (269 million inhabitants) *rural areas:* 59% of the population (78 million inhabitants) • Excreta disposal: *urban:* 71% (219 million inhabitants) *rural:* 32% (43 million inhabitants)
Health services coverage	• Access of 100% of population to health services system
III. Regional Objectives	
	• Reorganization and equitable, effective, and efficient extension of health services • Promotion and improvement of intersectoral linkages • Promotion of intra- and interregional cooperation
IV. Regional Strategies to Attain the Goals and Objectives	
Primary health care and its components	• Development of the health services infrastructure • Health promotion and care • Disease prevention and control • Environmental health
Mobilization of technical and financial resources	• Research and technology • Technical Cooperation Among Developing Countries (TCDC) • International cooperation • Financial resources

[a]*Health for All by the Year 2000, Strategies.* PAHO Official Document 173 (1980).
[b]*International Drinking Water Supply and Sanitation Decade.* First Evaluation. PAHO/WHO, November 1984.

Part I
Regional Overview

Overall Analysis and Trends

The efforts of the governments, the Organization, and its Secretariat to overcome prevailing health problems are conducted within the following frame of reference: the goal of health for all by the year 2000 in terms of the whole population, priority human groups, and levels of health and well-being; the regional goals, objectives, and strategies adopted by the Member States of the Directing Council of the Organization based on HFA/2000; and the national health priorities defined by the governments. An overall view of the state of health of the countries of the Region of the Americas in 1984 shows that efforts to achieve the regional goals and objectives have encountered substantial obstacles, both within the health sector and arising from external problems which have become unusually complex and pervasive.

Foremost among the major constraints is the crisis the world is going through, especially the developing countries and among them the countries of the Americas. Some of the most outstanding symptoms of that crisis are the instability of the balance of payments and the pressures of external debt, as well as domestic problems such as high rates of inflation, unemployment, decreases in income, deterioration in income distribution, and uncontrollable financial deficits. Added to this is the reduction of resources to finance social sector programs, especially health activities and those for satisfying basic needs. The scarcity of resources is making it impossible to operate services at the levels demanded by a steadily growing population, constituting an additional threat to the health situation. Nevertheless, it is possible to detect some symptoms of economic recovery in several countries which, together with some prospects of moderate economic growth in the developed countries, permit the expectation of better future times. From the political standpoint, changes have occurred that favor institutional normalization and are aimed at establishing democratic governments in which the society plays a larger role. It is expected that those changes may generate decision mechanisms more socially sensible and consequently with more priority for the social sectors. However, there are other concerns. The Central American Isthmus conflict has been aggravated and is adding constraints to the solution of subregional problems.

Even if the crisis wanes and adjustments are made in social structures that will help improve the well-being of the population, the recovery will be slow and lengthy. For that reason, it remains imperative for the health sector to achieve greater equity, efficiency, and effectiveness in its services. Thus, the thesis is reaffirmed that the situation will steadily worsen unless changes that make it possible to find new ways of achieving the objectives come about within the sector itself. By itself, the

health sector cannot overcome the crisis but it can mitigate its effects through a better rationalization of its order of priorities and the full utilization of its resources.

The major difficulty in the sector is the problem of the timely and effective use of resources, revealing serious deficiencies in the operating capability of health systems. In this regard, the sector faces enormous challenges in the areas of organization and operation. The many agencies that provide health services, their lack of coordination, and the scarcity of trained personnel are factors that lead to duplication and lack of coherence in the care of persons at the different levels of complexity of the services. Waste in the use of resources—either because of idleness, unnecessary delivery of services, deficiencies in organization and management, or the use of inadequate technologies—is a fundamental obstacle. The still inadequate coverage of the services and the fact that large segments of the population (30-40%) do not have access to basic health services are matters of serious concern. To face this situation, health planning and administration should be adjusted and strengthened to enable the health sector to mobilize, organize, and utilize its own resources, as well as to complement them with resources from other sectors. Special challenges will be assuring the technological and organizational adequateness of all levels of the health services within the primary health care strategy and complying with prevailing conditions in the Region.

In 1984, the governments, with the cooperation of the Organization, undertook a number of projects that have important implications for the future. Indeed, when the Region as a whole is examined, at least five areas of action, all well defined and closely related, stand out. Their purpose is to achieve better use of resources through the adoption of new procedures and solutions, the linkage of internal resources of the sector and its coordination with other sectors, joint actions by groups of countries in order to combine and make better use of the resources available, effective mobilization of national and external resources, and strengthening of the Bureau's capacity to support national efforts effectively.

New Approaches and Technology Development

Several steps are now being taken to define new policies and solutions. Epidemiology is becoming increasingly important as a useful and essential element in discovering the factors that influence changes in the health profiles of the population, which in turn will have a decisive effect on the appropriate distribution of health resources and on decisions concerning health policy. Accordingly, development and expansion of epidemiological practice are being promoted in the countries in order to improve knowledge, evaluation, control of health problems, and development of the services. Specifically, efforts are being made to strengthen the capabilities of generating and using information in order to obtain a better understanding of the manifestation, distribution, and causes of disease and of health; evaluate the impact of the health services; and integrate them within the development process. Strengthening and promoting the epidemiological approach also will make it possible to forecast needs, identify and qualify risks, and redefine priorities in the planning and technical-administrative management of services; in other words, prospective epidemiology will make it easier to define strategies and propose solutions.

In the area of maternal and child health, vulnerability due to the demands of the reproductive, growth, and development processes and the exposure of mothers, children, and families to factors derived from the biological, socioeconomic, and ecological systems highlight the importance of using the risk factor approach, both for promoting health and controlling diseases, as well as for adapting resources and efforts to the basic health needs of this priority group. This approach follows epi-

demiological criteria for resource allocation and guides Member Governments to formulate projects in which priority is given to marginal groups, so that major attention is channeled to those people who really need it. At the same time, specific procedures in child health based on high-impact and low-cost technology have been identified and grouped under the heading of infant survival. The risk factor approach together with a rational technology selection for maternal and child care have been the fundamental guidelines for Country/PAHO/WHO program formulation and implementation in this field.

The adoption of new approaches has also become urgent in planning and administration because of the changing situation of the health phenomenon as a whole, the growing demand for services by a steadily increasing population, and the real decrease in the resources of the sector. Based on the countries' experience in this area, PAHO/WHO, together with several schools of public health—in particular that of the University of Antioquia, Colombia—has prepared strategic approaches to the planning and administration of health services that are intended to increase the operating capacity of the system. These conceptual and methodological developments, aimed at satisfying the requirements of the goal of health for all, were designed in the light of the endogenous and exogenous factors that influence both the health of society and service delivery systems. Their distinguishing features are that they are flexible, are inherent in practice, and recognize and deal with the conflict and its conjunctures. Instrumental developments in critical areas such as sectoral analysis and financial analysis are also included. These approaches will be made available to public health schools in Latin America as teaching material in planning and administration courses; they will also be distributed to institutions that make up the health sector.

The need for innovative solutions has also become clear in problems related to water supply and sanitation. An analysis of the status of water supply and sanitation problems shows that coverage in urban areas continued to increase in 1984, and that by 1990 the goal of providing 87% of the population with services would be achieved. However, this is not the case for water supply in rural areas, where only 42% of the population is covered. Accordingly, efforts will have to be redoubled if the goal of 60% is to be achieved by 1990. A similar deficit is found in urban sewage systems and rural excreta disposal systems. To overcome these problems, in the frame of reference of the International Drinking Water Supply and Sanitation Decade, activities have been aimed at consolidating and accelerating coverage through effectively using the limited financial resources and giving preference to marginal populations of large cities and rural areas, thereby helping to improve the living standards of communities. The new approach emphasizes linking water supply and sanitation institutions with those of other sectors involved in this task, using the existing mechanisms for community participation, rehabilitating services, and strengthening the operation and maintenance of the systems. Of conspicuous importance in the implementation of this strategy are sectoral analyses and the formulation of national plans, which in turn have given rise to priority projects; the efforts of the governments to strengthen the managerial capabilities of the institutions; and the development of effective and low-cost technologies. The steps which the governments and the Organization are to take must be aimed at rehabilitating the existing water supply and sewage systems; making optimum use of resources; and extending coverage, giving priority to underprivileged groups.

There is an explicit trend towards reorienting the selection of health technology and increasing its generation and use in accordance with the characteristics of the national health problems and the resources available. Nevertheless, still of concern is the lack of criteria for importation and utilization of technology, especially the transfer of high-cost technology. Current trends in technology development in

health delivery services show that the health sector is imparting and utilizing technology incompatible with the aims and goals already spelled out by the governments. Such incompatibility is a fundamental factor in the waste of resources, with negative repercussions in health delivery services, staff and patient attitudes, and institutional structure and functions. Even more serious, it unnecessarily increases the operational costs and produces misleading sectoral policies. Consequently, incorporation of high-cost technology without selection criteria is producing serious disturbances in resource allocation and utilization, efficiency and efficacy of the health services, and the extension of health services to the underserved population.

To deal with these problems, several governments, with the cooperation of PAHO/WHO, have decided to strengthen their mechanisms for the selection and importation of technologies while increasing their domestic capability for generating technology. Foremost among these is the definition of the bases for analyzing technology development that Argentina, Brazil, Colombia, Costa Rica, Mexico, and Paraguay agreed upon during the International Meeting on Technological Development in Health, held in Brazil in 1984. Those analyses included selection, cost, allocation, dissemination, and use of technology, and will be put into operation in 1985. Furthermore, preliminary steps have been taken to organize a network of technological information.

In addition, as part of the PAHO/WHO programs of cooperation with the governments, new approaches have been developed such as simplified systems of x-ray diagnosis, simplified dental systems, effective and low-cost environmental health technologies, simple instruments for measuring nutritional status, educational technology in the training of human resources, and standards for vaccine production. For their part, the PAHO/WHO regional and subregional centers have continued to generate and use techniques and procedures in specific areas of their responsibility. This field, essential for the effective use of resources, will demand greater effort and attention by the governments and the Organization if it is to be developed.

Intra- and Intersectoral Linkages

The linkage of the resources assigned to each component of the health sector is particularly important for their efficient use. During this period, the linkage of the Ministries of Health and Social Security Institutions has begun to show concrete results with encouraging prospects for the future. This linkage was analyzed in 1979-1984 in the 16 countries in which the two institutions share responsibilities in providing health services. The study showed that linkage existed at different levels of development in accordance with the characteristics of each country, and that there was a trend towards delimiting the areas of responsibility of the sector's components; spelling out financing policies, including the role of the private sector; and determining the extent of real coverage in the provision of services. The findings of this study were examined at the XXX Meeting of the Directing Council of PAHO and at the Joint Meeting of Ministers of Health and Directors of Social Security Institutions held in July in Medellín, Colombia. The Ministers of Health of Central America and Panama adopted a resolution on the incorporation of the directors of social security institutions and the conversion of their annual meeting into a Meeting of the Health Sector of Central America and Panama, clearly indicating the progress achieved in coordination. Other signs of progress are the interinstitutional agreements being implemented in Colombia, Costa Rica, Ecuador, Honduras, Panama, and Peru in the areas of planning, organization, and maintenance of health services. These agreements embody the joint approaches of the two subsystems for dealing with common problems, with PAHO/WHO cooperation. This process

should lead to the gradual elimination of duplication and the filling of gaps, making it possible to extend the delivery of services to the unprotected population and consequently to use the resources of the sector equitably.

Foremost among the efforts for promoting the linkage of the sector with other sectors are the joint activities of the Organization and the Latin American Institute for Economic and Social Planning (ILPES). Those efforts are aimed at developing the conceptual, technical, and methodological foundations for the introduction of the health dimension and its intersectoral linkage into the decision-making mechanisms of the administrations of the Latin American and Caribbean countries. It is thus hoped to define criteria that will be of use to the governments in incorporating the health sector into their overall and social planning by means of decision-making and resource allocation. Furthermore, the food and nutrition area also offers examples of the implementation of intersectoral policies. The Intersectoral Workshop on Nutrition and Food Safety was held in Colombia for the purpose of implementing the National Food and Nutrition Policy, including the definition of objectives for the agricultural sector, and of elements for intersectoral coordination. Another example was the effort made to increase the availability of food in poor households in Argentina, Bolivia, Nicaragua, and Peru. Finally, mention should be made of the limited availability and accessibility of essential drugs for the entire population; several countries are attempting to solve the problem by using a multisectoral approach, especially in formulating and implementing policies.

Joint Activities by Groups of Countries

One of the most important expressions of the combination of efforts and resources for jointly dealing with the solution of common health problems has been the dynamic process followed by the Governments of the Central American Isthmus in formulating the Plan for Priority Health Needs in Central America and Panama. At their Special Meeting held in Costa Rica (March 1984), the Ministers of Health adopted that Plan and undertook to carry it out. It was subsequently given favorable consideration by the Ministers of External Relations when they met in Panama in April 1984. In addition, the governments that make up the Contadora Group reaffirmed their support for it. Three facts are of importance in this process: the active participation in multidisciplinary groups of more than 200 national experts of the ministries of health, universities, and economic planning units of the countries involved; the effective coordination of international cooperation agencies (PAHO/WHO, UNICEF, UNFPA, IDB, and the like); joint action by the governments, PAHO, and UNICEF to support each proposal with requests for financial resources from European and American governments and donor agencies. The Plan comprises seven priority areas: the strengthening of health service systems; the development of human resources; the availability of essential drugs and critical supplies; the improvement of the food and nutrition situation; the control of malaria and other tropical diseases; immediate action for infant survival; and the strengthening of water supply and sanitation systems. It includes 40 subregional projects and 267 national projects which it is hoped will mobilize national resources estimated at US$625 million and external resources in the amount of almost US$1.3 billion in a 5-year period.

With regard to its significance and projections, the Plan has two fundamental purposes. The first is to satisfy basic health needs that have long been postponed or accumulated in the historical evolution of the countries and which now have worsened because of the economic, social, and political crises that affect the subregion in particular. The second is to use the consensus that health is a basis for promoting understanding and cooperation among

countries, peoples, and governments for establishing peace. This unusual collective effort shows that the strengthening of links among countries of the Central American Isthmus is possible if the international community supports and strengthens political understanding and contributes constructive solutions to the social and economic problems of the subregion.

Several groups of countries have decided to combine and coordinate their efforts to deal with the problem of the availability and accessibility of essential drugs for the entire population. In this regard, at an intersectoral meeting organized by PAHO/WHO, representatives from Argentina, Brazil, Mexico, and Spain recommended the formulation and development of an intercountry program for the production and marketing of raw materials and finished products based on the linkage of existing production facilities. The aim of the program is to ensure that the developing countries increase their self-sufficiency in national production wherever it is economically and technically feasible, as well as their capacity to negotiate purchases of raw materials and finished products. In the latter regard, the Organization and the Central American Bank for Economic Integration (CABEI) made a study with a view to establishing a revolving fund and a system of joint purchases by the Governments of Central America and Panama. A similar initiative is being promoted and implemented in the English-speaking Caribbean, with the sponsorship of the Caribbean Community (CARICOM). Furthermore, the availability and accessibility of drugs is a basic priority of the Plan for satisfying the Priority Health Needs in Central America and Panama. In addition, the Andean Pact countries have established a system of information exchange on prices, sources of raw materials, and finished products imported by those countries. As a guide for national officials involved in taking decisions on this matter, in 1984 PAHO published a document entitled *Policies for the Production and Marketing of Essential Drugs*.

Mobilization of National Resources and External Financing

It must be emphasized that no solution to the problems of health and of general development is lasting unless it is based on the national capacity of a country to conduct and sustain its own development. With the cooperation of PAHO/WHO, some governments have begun to shape a policy in this field aimed at shifting the use of the resources already allocated to the sector by increasing the efficiency of their use through the rationalization of priorities; coupled with this is the simultaneous identification of national resources that may be channeled towards essential activities in the health field. Certain requirements for implementing this policy tend to strengthen the assignment of priorities and establish the consistency of the proposals requiring additional resources; these requirements are the need to define the viability and feasibility of the health proposals.

The national development policies and the priority assigned to the social sectors, both in their linkage with other sectors and in the allocation of national resources to health, are the national frame of reference for the formulation of health plans and programs. Consequently, their viability is determined, on the political level, by the formal support of governmental authorities and the commitment of agencies, institutions, and groups that participate in decisions about society. On the institutional level, viability is determined by the extent of the support of all the institutions that make up the health sector. In other words, the implementation of health activities involves the government and society, and not only the ministries of health.

Furthermore, the operating capacity of health institutions to make better use of the resources available and to make optimum use of the additional resources determines technical-administrative feasibility. Thus, the issue is to

avoid the contradictory situation and its concomitant problems—that is, mobilizing and channeling additional resources to the sector without the capacity for efficient absorption and utilization. Financial feasibility depends on both the national policy of financing the public sector, especially the health sector, and the analysis of available counterpart resources and the possibilities to finance operational costs. The purpose of these mechanisms is to rationalize the process of making better use of the resources available and endeavoring to obtain additional resources within the national sphere itself.

One valuable instrument for the mobilization of external resources that is becoming increasingly important as its procedures become systematized is technical cooperation among developing countries and between them and developed countries. To strengthen this process, an analysis has begun of the priority areas of countries and of their potential both for receiving and supplying cooperation. Mechanisms for the financing of Technical Cooperation Among Developing Countries (TCDC) projects are being designed jointly with ILPES. Actual instances of TCDC and Economic Cooperation Among Countries (ECDC) exist, such as the development of networks of national centers, the joint action taken to draw up the Plan for Priority Health Needs in Central America and Panama, training in essential drugs in the Andean countries, and the nutrition and training programs in the Caribbean Community.

As regards the mobilization of external financial resources, experience has shown that it must meet two fundamental requirements: the resources must supplement the national effort, and they must be short-term in nature. At this time of crisis through which the countries are going, international financial corporation can in special cases temporarily replace domestic financing capacity. However, domestic financing capacity is of particular importance when concessionary funds or grants are involved. To that end and to make the work of governments easier, PAHO/WHO prepared and distributed to the health authorities a document entitled *Guidelines for the Mobilization of External Financial Resources* which provides important information on sources of financing, requirements and procedures, and mobilization strategies. It also identifies the many private agencies and foundations that can make grants to specific programs.

In this context, the Organization has cooperated with the Member Countries in defining the external financing needs of several projects; foremost among these is the Plan for Priority Health Needs in Central America and Panama. It is hoped that support will be forthcoming from the international community, especially bilateral cooperation, both from North America and from several European governments. Nevertheless, international credit agencies—the Inter-American Development Bank and the World Bank—continue to be the common financing sources for national water supply and sanitation programs, health services, and development of human resources in Latin America and the Caribbean.

Preparation of the Bureau to Meet the Needs of These Processes

To meet the requirements for implementation of the initiatives already discussed in this chapter and for the attainment of equity, effectiveness, excellence, and sufficiency in the use of resources for technical cooperation programs, the implementation of the "Managerial Strategy for the Optimum Use of PAHO/WHO Resources in Direct Support of Member Countries" has been strengthened. A notable component of this process is an increase in the managerial and operating capacity of the Central and Field Offices. At the central level, we have consolidated the program areas, the articulation of their functions, and the development of multidisciplinary approaches; personnel of different categories also have been

retrained. In the field, the former Area Offices have become Country Offices. The "Plan for Decentralized Administrative Development" has been implemented and comprises a review and adjustment of administrative systems, analysis of the operating capacity of the Country Offices and PAHO/WHO Centers, and a feasibility analysis of the components of the decentralization process. The results point to gains in the design and application of modules for the management of programming cooperation and of the budgeting, financial, and accounting subsystems; in the decentralized management of personnel, fellowships, travel, seminars, and courses; and in information systems for the monitoring of programs and budgets.

Noteworthy instances of real participation of the governments in the Organization's work—a basic principle of the Strategy—are the joint Country/PAHO/WHO reviews of health policies and programs, which have led to a determination of national priorities and needs for PAHO/WHO cooperation and, in many cases, external funding.

Official and informal relations with international and national agencies and foundations have also been strengthened as a basic aspect of the Strategy for the coordination of international cooperation and the mobilization of resources for health. This has been the basis of operations with the Inter-American Development Bank, the World Bank, the Economic Commission for Latin America, UNDP, UNICEF, UNFPA, and other national and private technical and financial agencies. These efforts have given rise to official agreements for joint activities in specific countries and regional programs. The Organization has also cooperated with individual countries in setting up effective machinery for coordinating international cooperation, including permanent government agencies and joint Country/PAHO/WHO committees which participate in the identification of the external resources needed to complement local resources for carrying out national health programs.

Possible Future Courses

Despite the implications of the economic and social crisis, the Organization and its Secretariat have reaffirmed their purpose of intensifying measures for attaining the regional goals and objectives. Meanwhile, the governments, in accordance with their national priorities, are channeling efforts to the solution of leading problems and thereby contributing to the attainment of regional purposes. There are four main areas of action—the evaluation and reorientation of technological development, intra- and intersectoral articulation, combined operations by groups of countries, and resource mobilization—for maximizing resources, strengthening the operating capacity of institutions and the system in support of these areas, and updating and strengthening the structure and operations of the Organization.

These undertakings are in their first stages. Hence, if it is agreed that these approaches can lead to useful and practical solutions, the first steps would be to consolidate and strengthen initiatives in progress. Flexibility is needed to adjust them to changes in and outside the sector and to take advantage of situations as they arise to revitalize the process.

The outlook for the economic and social situation is profoundly uncertain. However it develops, the health sector must hone its creativity and ingenuity to accelerate the development of mechanisms for serving the population with equity, efficiency, and effectiveness, and for extending health services to underserved urban and rural populations. Therefore, in addition to strengthening the aforementioned initiatives in progress, it is imperative to continue the search for new approaches and solutions and, at the same time, to give high priority to the generation of useful knowledge and the development of technology and procedures that are socially workable and have the greatest impact. Moreover, encouragement and support should be given to combinations of resources and efforts in mutually

supportive operations by groups of countries as a device for both addressing common problems and promoting understanding and peace in the Region.

This proposition is subject throughout to a basic condition, which is that it receive the support of government as a matter of policy. In fact, the conviction that there are effective ways of improving levels of health and welfare of the population while at the same time minimizing the baneful effects of the crisis in the sector must be given overt expression in each country in firm policies and decisions that engage the government and society as a whole. This enterprise is not for the health sector alone but, to the contrary, requires comprehensive, articulated measures by a country as a whole. The implementation of those policies joined to the resolve of those responsible for the process will result in optimal use of resources, a strengthening of the operating capacity of the sector, and a quest for new solutions.

Part II
Regional Analysis of Joint Government/PAHO/WHO Actions

Chapter 1. Development of the Health Service Infrastructure

Development of Health Service Systems

Situation and Trends

1.1 Severe constraints on funding for the health sector as a result of the economic crisis, together with the pressing requirements of a population in rapid growth, have created serious problems for government activities. Nevertheless, it is possible to point to a number of efforts aimed at improving the organization of health systems, achieving greater coverage by seeking appropriate ways of extending the service networks, and increasing the operational capacity of health service systems through linkage with other sectors that influence health conditions.

1.2 Efforts continued in Costa Rica and Panama to coordinate the services of public health facilities with those of social security institutions. Several countries were pursuing the same objectives through changes in the organization of the health sector. A case in point is Argentina, where the social security agencies are being brought within the jurisdiction of the Ministry of Health and Social Action. In Mexico, the Ministry's authority was broadened with a view to improved sectoral performance, and a constitutional amendment was adopted providing for the establishment of coordination and deconcentration-decentralization nuclei to further integrate services at subnational levels.

1.3 Other countries of the Region continued their efforts to consolidate the coverage and extension process through practical application of the primary care strategy, in some cases by means of externally aided projects (Barbados, Bolivia, Brazil, Cuba, Dominica, Dominican Republic, Ecuador, Guyana, Haiti, Honduras, Nicaragua, Paraguay, and Peru).

Planning and Administration

1.4 Reference has been made to the sharp financial constraints on the health sector and the problem of the rising demand for services. These factors are making it necessary to focus national and international efforts on helping the health sector develop the operating capacities that will enable it to make the best possible use of available and potential resources. This, in turn, necessitates an urgent review of the approaches and methodology

traditionally employed in health systems administration, particularly with respect to planning and management. The experience acquired by the countries in the planning area and the advances made in other socioeconomic sectors have been basic elements in reorienting the course of the work, especially the training of national officials responsible for adjusting processes to current conditions. Further efforts were made to develop more flexible planning techniques that adjust to situations prevailing at a given time. Thus, the University of Antioquia's School of Public Health in Medellín, with PAHO/WHO cooperation, continued its work on the development of strategic planning and management approaches, the results of which are gathered in a technical publication to be made available to the governments. Several critical planning areas requiring instrumental development were identified in this process. Initial priority was given to analysis of the health sector, analysis of financing, and formulation of investment projects as vehicles for strengthening specific areas of service planning and administration. Some methodological tools for the analysis of financing have already been designed in Uruguay.

1.5 In order to consolidate these schemes, the Latin American Institute of Economic and Social Planning cooperated with PAHO/WHO in laying the groundwork for joint participation in planning courses conducted at schools of public health. This will also include the exchange of experience and of instructional staff. It is worth noting that some of the strategic planning approaches are being utilized in Honduras, Nicaragua, and Panama.

1.6 In keeping with the high priority that the English-speaking Caribbean countries have assigned to health systems development, a regional seminar on health systems planning and administration was held in Antigua in October, with 34 participants from 15 countries of the area. The objectives of the workshop, in which the Secretariat of the Caribbean Community (CARICOM) and the Commonwealth (Great Britain) also participated technically and financially, were to evaluate the present initiatives for the development of systems in the Caribbean subregion, examine the management process for the development of national health services and its relevance to the Caribbean, and select priority areas for strengthening the planning and administration process in the next 2 years. A National Health Plan was prepared in Belize, while in other countries—including Brazil, Colombia, Jamaica, Mexico, Trinidad and Tobago, and Uruguay—the situation analysis of the health sector was consolidated, and in Argentina the basic provisions for the formulation of a National Plan were established.

1.7 To help strengthen the decentralization and administration of health systems, a seminar on that subject was held in Mexico, with eight countries participating: Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, and Mexico. The participants exchanged experiences and examined possible approaches. To discuss these initiatives, particularly those on strengthening the legal foundations of health service systems, a Consultative Group on Legislation in Public and Private Administration convened at PAHO/WHO Headquarters in September, consisting of officials from seven countries: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, and Uruguay. It was hoped that the meeting would lead to a definition of national strategies and workplans in this field.

1.8 In Bolivia, work continued on the adjustment of administrative methods and procedures for development in the areas of health, local programming, and community participation. In Colombia, the administrative development project was evaluated, leading to the establishment of guidelines for strengthening institutional development. In Costa Rica, further progress was made on restructuring the health sector and implementing the Social Security Institutional Development Program, in search of a suitable managerial response to the problems presented by the sector's institutional plurality. In Dominica,

Saint Lucia, and St. Vincent and the Grenadines, administrative systems applicable to essential drugs were improved through simplification of procedures for procurement, storage, distribution, and inventory control. In Ecuador and the Dominican Republic, PAHO/WHO cooperated in the identification and analysis of critical areas in the present administrative systems, leading to better utilization of technical and administrative instruments. In Barbados, Guyana, and Suriname, draft legislation on institutional development of the health sector was prepared in close cooperation with the Inter-American Development Bank (IDB). In Guatemala, consideration was given to an adjustment of the administrative structure of the Ministry of Public Health and Social Welfare and to the technical and administrative innovations needed in the support services. An institutional analysis of the Guatemalan Social Security Institute also was carried out, including consideration of improvements in the supply area.

Organization and Development of the Health Service Network

1.9 Priority continued to be given to the extension and consolidation of the network of health services. To this end, with PAHO/WHO cooperation an analysis of the organizational characteristics of health services in 19 countries of the Region was initiated: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela. These studies made it possible to identify constraints and problems at the national level, to formulate strategies, and to define areas for PAHO/WHO cooperation in reorganizing and consolidating the service systems. Significant activities in this area were: the establishment of integrated areas in Bolivia; the development of a local programming module and an analysis of the role of hospitals in the primary care strategy in Brazil; the formulation of a project to support the process of consolidating the national health system in Colombia, using World Bank resources; the development of local service programs in various regions of Honduras; and the formulation of decentralized State plans and local programs in Mexico.

1.10 The Organization also cooperated with the governments of the Central American Isthmus in the identification of factors that hinder the extension of services to the entire population and in the formulation, within the Plan for Priority Health Needs in Central America and Panama, of 34 project proposals for surmounting those obstacles. The proposals aimed to achieve universal coverage and access to the system of services. Four of the projects were subregional in scope, covering the areas of organization and delivery of services, formulation and implementation of projects, facilities maintenance, and critical inputs. The other 30 were national projects for Costa Rica (4), El Salvador (2), Guatemala (14), Honduras (3), Nicaragua (4), and Panama (3) and covered the extension and consolidation of the infrastructure and the strengthening of technical, administrative, and financial processes.

1.11 In the implementation of the primary health care strategy in rural and urban areas of various countries, including Brazil, Colombia, Honduras, and Nicaragua, there was a trend toward gradual involvement of the nursing profession in the delivery of services to the community and toward the use of simplified methods in peripheral units. In Brazil, priority continued to be given to the system's primary level services; to this end, PAHO/WHO collaborated in efforts to strengthen the State health departments' technical capabilities and to develop the network of units for expanding the coverage of health services. A consultative meeting in Jamaica, sponsored jointly by UNICEF and WHO, was attended by representatives from Burma, Nicaragua, Papua New Guinea, Democratic Yemen, PAHO, WHO, and UNICEF. Participants reviewed the development of primary health care, its critical areas, and its lessons;

suggested basic guidelines to follow in redirecting the process; and proposed actions to be undertaken in the future by the governments and by PAHO/WHO and UNICEF. Multidisciplinary teams including nursing personnel were set up in a number of countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Guatemala, and Panama) to provide primary health care to underserved populations in urban areas.

1.12 In the field of nursing, three subregional workshops were held on the changing demands on nursing in terms of the goal of health for all by the year 2000. The workshops were conducted in Argentina, Brazil, and Panama for nurses from the ministries of health, social security agencies, university hospitals, and nursing schools of Argentina, Brazil, Chile, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, and Uruguay. In Canada, a workshop on the contribution of nursing to primary care programs was held for nurses from Canada, Haiti, Suriname, and 18 countries or territories of the English-speaking Caribbean area. The standards of nursing care in hospitals and health centers of the Caribbean, formulated at a workshop in 1983, were examined at the Meeting of Ministers of Health of the Caribbean in 1984 and were subsequently circulated to the Caribbean countries as a guide for setting up nursing care standards consistent with conditions in each country. In Argentina, Bolivia, Chile, and Peru, workshops were conducted for the purpose of designing instruments for auditing and evaluating community and hospital nursing services. In the Dominican Republic, a central-level working group was organized to devise national nursing care standards. In El Salvador, efforts to develop and improve nursing services and to review and evaluate national nursing school programs were intensified.

1.13 In the medical records area, work proceeded on reorganizing medical records departments of four national hospitals in Trinidad and Tobago. In Costa Rica, PAHO/WHO cooperated in the adoption of unified maternal and child and pediatric clinical history forms for use at all health centers, clinics, health posts, and hospitals. Dominica implemented a plan to reorganize its medical records service according to recommendations put forth by PAHO/WHO in 1983. In the Dominican Republic, PAHO/WHO participated in an assessment of the medical records situation and the development of a manual of medical records rules and procedures for ministry of health hospitals and subcenters. In Guatemala, the Organization collaborated in the determination of responsibilities for medical records in the country and in the Central American area. Training was intensified for technical staff in Costa Rica and Venezuela and for auxiliary staff in Uruguay. Mexico continued its development of health records for use in primary care in rural and underserved urban areas. The Ministry of Public Health of Uruguay received assistance in a project to review medical records to determine their usefulness in evaluating the quality of the services provided, the technologies used, and the continuity and completeness of the care of chronic diseases. Lastly, cooperation was extended to Colombia and Peru for evaluation and reorganization of social security medical records.

1.14 A highlight in the architecture and maintenance area was the meeting held in Lima, Peru, to examine critical aspects of hospital planning, design, equipping and maintenance, and to define action guidelines. The meeting was attended by representatives from the Andean Group countries, the Office of Physical Infrastructure of the Ministry of Health of Peru, and PAHO/WHO. El Salvador's methodology, plans, programs, and manuals on maintenance service administration and logistics were being designed. In Honduras, equipping modules were defined that reflect the requirements of priority activities of peripheral-level health programs, including the preparation of a plan for redistributing health center equipment. In Nicaragua, a national inventory of health service equipment and installations was begun to serve as a

basis for adjusting the national maintenance plan; staff training was stepped up; and PAHO/WHO assistance was also provided in designing the organizational and technical structure of the Division of Engineering and Maintenance and revising the national and regional program. In Paraguay, the architectural programming for the various health establishments was reviewed and an assessment was made of plant and equipment maintenance. In Peru, a workshop on hospital equipping was conducted, a methodology for preparing national physical infrastructure standards was defined, and standards were developed for the first level of care.

Intrasectoral Coordination

1.15 PAHO/WHO cooperation efforts were directed toward the strengthening of linkages among health sector components, especially ministries of health and social security agencies, with shared responsibilities for the provision of health services in the following 16 countries: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela. Pursuant to resolution CD28.R34 of the XXVIII Meeting of the PAHO Directing Council, a study of the process of coordination in the 16 countries during the period 1979-1984 was carried out. The study shows a tendency to delimit sectoral components with increasingly greater accuracy and identifies policy definitions, the financing of services, and levels of linkage as central elements in the process. The XXX Meeting of the Directing Council considered this study in September 1984 and, by means of resolution CD30.R15, urged the Member Countries, once again, to strengthen the ties between ministries of health and social security agencies so as to make a more effective use of the sector's technical and financial resources and extend health care to underserved population groups. The study was also examined at the Meeting of Ministries of Health and Directors of Social Security Institutions of Central America and Panama.

1.16 In addition to such regional and subregional statements of policy, there are specific instances of intersectoral linkage. These included, first of all the agreements concluded in Colombia, Costa Rica, Ecuador, Honduras, Panama, and Peru for interagency cooperation in the areas of planning and organization of health programs, development and maintenance of health facilities, administrative analysis, and human resource development.

1.17 The strategy followed in implementing these agreements has been to focus cooperation on areas where by mutual accord the institutions concerned are taking joint approaches to the solution of common problems. Thus, PAHO/WHO provided technical assistance to the National Institute of Social Services of Argentina for the Program of Services to Retirees and Pensioners. In Colombia, PAHO/WHO is playing an active role in the development of a planning model for the Social Security Institute. In Costa Rica, it continued its cooperation in medical care organization, nursing services administration, information systems, and personnel training. In El Salvador, the Organization cooperated with the Social Security Institute in the identification of health facility maintenance requirements and potential areas for interinstitutional coordination. In Panama, where the Organization continued to collaborate in the development of the health service network, long-term proposals were formulated in the areas of infrastructure requirements, adjustments to key hospitals, and unificaton of administrative services. PAHO/WHO's cooperation in Guatemala centered around maintenance services, specifically the design and application of standards and manuals and the training of staff at the operational level. A technical cooperation agreement was signed with the Ibero-American Social Security Organization (Spain) for the development and promotion of technical and administrative training for staff of social security entities to improve the operation of

health care programs and stimulate coordination with the health ministries.

National Information Systems

1.18 Strengthening of the national health information systems continued in Costa Rica, El Salvador, Guatemala, Honduras, and Paraguay. In each of these countries, emphasis was placed on achieving interdisciplinary coordination in planning, administration, and national information systems; strategies of change were formulated; and intercountry cooperation to improve the linkage among information services was intensified.

1.19 Four specific information subsystems were identified for development. The first was drug supplies, with emphasis on the establishment of intercountry technical cooperation nuclei in the Andean area (Hipólito Unanue Agreement). The second referred to programs to extend the coverage of services, including the immediate action for infant survival programs, whose information subsystems are being developed in the Central American countries and Panama. The third area was that of budget control subsystems, whose operations were being initiated in Guatemala. Lastly, the fourth group referred to the information subsystems on planning and programming currently being developed in Argentina, Chile, Paraguay, and Uruguay, based on the exchange of experience and using electronic data processing.

1.20 The training of national personnel in courses combining the subjects of planning, administration, and information continued. Two workshops were held for this purpose; the workshop for the English-speaking Caribbean countries also included the sanitation program. The member countries of the Andean Pact—Bolivia, Colombia, Ecuador, Peru, and Venezuela—participated in the second workshop. The primary purposes of both workshops were to promote coordination among the areas involved and to lay the groundwork for the subsequent development of information systems and subsystems.

1.21 The Organization has intensified its efforts in the technological development of information systems. Outstanding in this regard were the incorporation of qualitative evaluation techniques for use in the health services, the utilization of modern computer techniques at different levels of the system, and the revision and adaptation of sections of the International Classification of Diseases.

1.22 The activities pertaining to the International Classification of Diseases continued in 1984, notably those directed to the establishment of a network of national centers. In addition to the centers in São Paulo (Brazil) and Venezuela, a center was established in Peru, and centers were being formed in Argentina and Mexico. The centers adopted a strategy of coordinated work within the Technical Cooperation Among Developing Countries (TCDC) framework; within this scheme, a cooperative study of various coding methods, to be carried out by the São Paulo Center, the Government of Mexico, and PAHO/WHO, was designed. The governments continued to take an active part in the preparation of the 10th Revision of the International Classification of Diseases to adjust it to the monitoring and evaluation of health systems.

Project Formulation and Administration

1.23 Within the Plan for Priority Health Needs in Central America and Panama, the governments aided by PAHO/WHO identified priorities and formulated 29 preliminary projects for the development of health services. Of these, four projects were subregional in scope and 25 were national, corresponding to Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. The preliminary projects are now under consideration by financing agencies. The proposals for securing external funding total US$332 million.

1.24 Cooperation was provided to Barbados, Guyana, Haiti, Mexico, Suriname, and

Venezuela in the development, with external funding, of preliminary projects in the area of service infrastructure. PAHO/WHO continues to be the executing agency for IDB technical cooperation in projects under way in Ecuador, El Salvador, Honduras, Nicaragua, and Paraguay for the development of health services.

Health Service Research

1.25 A survey of health service research trends in 15 countries of Latin America and the Caribbean was carried out. The study included a review of national and institutional policies on health service research and an inventory of studies made in those countries during the period 1974-1983. Proposals to PAHO's Advisory Committee on Health Research concerning possible areas of collaboration were formulated on the basis of the analysis of those trends. In the Caribbean area, specifically in Antigua and Barbuda, Dominica, St. Christopher and Nevis, and Saint Lucia, a study was made for the purpose of obtaining qualitative and quantitative information for health service planning and financing, as well as for determining health conditions.

Health Education and Community Participation

1.26 As a follow-up to the study made in 1983 to determine the scope and effectiveness of health education activities and community involvement in maternal and child health and family planning projects in 10 countries (Bolivia, Brazil, Guatemala, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, and Peru), the final report of the study was distributed early in 1984 to the governments of those countries and associated financial institutions. An analysis of case studies on community participation in urban and rural areas of eight countries of the Region (Barbados, Brazil, Colombia, Cuba, Ecuador, Guyana, Jamaica, and Mexico) was published during the year, as was the first title in a new series of documents for community workers entitled *Development and Use of Health Education Materials*. A guide for identifying educational methods and techniques available in the community and applying them to health activities was being field tested, and a guide on simple methods of evaluating the impact of health education and communication activities was scheduled for preparation in 1985. Cooperation was extended to Colombia, Guatemala, Honduras, Mexico, Paraguay, and Uruguay in reorganizing the health education departments of their Ministries of Health, training health education staff in community diagnosis techniques, and planning and evaluating health education programs. The health education and community participation component was gradually being incorporated into perinatology training programs. This trend was evident at the Latin American Perinatology Center (CLAP) workshop on national perinatology standards, as well as in CLAP's course on perinatology and public health and at the Interregional (PAHO and EURO) Conference on Appropriate Technology in Prenatal Care. Additional information on these courses will be found in chapter 2 of this *Report*, under CLAP. Also worthy of mention is the course conducted in Mexico on evaluation of the impact of health education and mass communication activities on the utilization of health services. A total of 80 officials from a majority of the Latin American countries attended this course.

Human Resource Development

1.27 In the context of the Regional Strategies for health for all by the year 2000 and in keeping with medium-term regional programming, efforts in 1984 in human resource development were focused on meeting the requirements of the health services' national plans and programs in two closely related areas: management of human resource development and health personnel training.

Management of Human Resource Development

1.28 **Promotion of policies and plans.** Preliminary steps were taken toward a joint analysis of policies in the Central American countries and Panama. In addition, 5 subregional and 26 national human resource programs were prepared and incorporated into the Plan for Priority Health Needs in Central America and Panama. In the English-speaking Caribbean countries, a number of subregional workshops analyzed mechanisms for strengthening health personnel management systems and promoting the inclusion of human resources in the general planning processes. Also in the Caribbean and in cooperation with CARICOM, a human resource availability survey was conducted for use in subsequent programming.

1.29 An Interregional Meeting on Coordination of Health Personnel Programs was held for the purpose of reviewing the medium-term regional programming and adapting it to the governments' requirements and efforts. The meeting also examined possible approaches to the problems involved in teaching-service integration, utilization of personnel, research, and personnel requirements for primary care. Finally, human resource planning courses were offered in Colombia and the Dominican Republic.

1.30 In the strengthening of national capacity for research on human resources, a highlight was the identification by the Regional Advisory Committee on Health Research of the following study areas: analysis of the labor market, production functions (the relationship between human resources and technology), sociology of the professions, and educational development. The PAHO/WHO grant program gave priority to these areas, within the context of market analysis, because of the contribution it can make to a better understanding of the national profiles. In this regard, the study on the nursing labor markets in Brazil, Colombia, Ecuador, Honduras, Mexico, and Peru was completed in 1984, and a comparative analysis of the findings was scheduled to be made for reprogramming purposes. Special importance also was given to training in research. The School of Nursing of the University of Valle in Cali, Colombia, and the advisory research group of the Community Health Training Program for Central America and Panama (PASCCAP) contributed to the design of various modules for self-instruction and research. Courses on research methodology were offered in El Salvador, Guatemala, Honduras, and Panama through PASCCAP.

1.31 In the development of information subsystems, three areas were identified and later added to the system: available human resources and their utilization in the services; training institutions and programs, with their respective characteristics, teaching capacity, and resources; and technical-scientific level of the health sector professions. These elements served as a basis for designing the subsystem to be implemented in the countries in 1985. Also in 1984, the National School of Public Health of Brazil, using the latest census returns, selected and analyzed the data on the categories of personnel, employment, wages, and functions.

1.32 **Reorientation of policies on personnel utilization.** This is a priority area in most of the countries, given the serious problems created for governments by scarcity of personnel in certain categories and poor distribution in others. At the regional level, a methodology was prepared for use in the definition of educational and occupational profiles, and an evaluation methodology based on functional requirements was developed as a support instrument for supervision and continuing education. At the national level, PASCCAP conducted workshops designed, like the one in Panama, to review the occupational profiles for all the health professions, or, like the one in El Salvador, to prepare the occupational and educational profiles for physicians. In Peru, the profile for nursing personnel was defined, and the staffing table for middle technical and auxiliary level personnel

of the Ministry of Health was established. Finally, in Cuba, the study of nursing personnel performance was completed.

1.33 **Continuing education and supervision.** In accordance with the recommendations of the regional meeting held in the latter part of 1983, these two programs were combined into a single operating unit. To implement the combined program, workshops were conducted in El Salvador, Guatemala, Honduras, and Panama, and programs were designed for seven other countries. Cooperation was also given to Cuba's continuing educational program through educational technology.

Training of Health Personnel

1.34 Training continued within the broad approach of teaching-service integration. Programs in this field encompassed the training of physicians, nurses, odontologists, and public health personnel, as well as administrators.

1.35 **Medical education.** Noteworthy events were the establishment of the School of Medicine in Guyana, the evaluation of the School of Medicine in Guatemala, the development of the teaching-service integration program at the Medical School of the Autonomous Metropolitan University of Mexico, and the study of the integrated units of the School of Medicine of Cayetano Heredia University in Peru. In addition, the medical residencies program in Honduras was evaluated, and the new School of Medicine in Managua, Nicaragua, was consolidated. Further progress was made in the ongoing study of the programming and structure of Brazil's medical schools, with a view toward reorganization.

1.36 PASCCAP participated in the development of the medical curriculum in Honduras. A plan of work was formulated for academic upgrading of the health-related faculties of the University of El Salvador.

1.37 **Nursing education.** In keeping with the relevant resolutions of PAHO's Governing Bodies and recommendations of the Consultative Group in Nursing (1981), the Organization continued to promote the establishment of networks for exchanging experiences in the development of nursing education in Latin America. To this end, a proposed information subsystem on science and technology in nursing was developed as part of the regional information system with the aim of supporting and facilitating the production, circulation, exchange, and use of information and technology in the field of nursing. An analysis of nursing documentation centers and libraries was initiated in several Latin American countries. Two studies were carried out to examine the contribution of nursing to the health care delivery system so that training programs may be adjusted to national realities. One of the studies, dealing with the training of professional nurses, revealed a high degree of heterogeneity within this group; consequently, the study programs and the professional practice of nursing are currently under revision in a number of countries. The second study, with similar characteristics, dealt with the training of nursing auxiliaries.

1.38 In addition, a reorientation of nursing curricula within a framework of teaching-service integration was promoted in Argentina, Paraguay, Peru, and Uruguay, and with the support of PASCCAP, nursing education was being reformulated in El Salvador and Panama. With regard to intermediate technical personnel, the second period of activities under the technical cooperation agreement among Cuba, Nicaragua, and PAHO/WHO was directed toward intensifying efforts to train such personnel in those countries.

1.39 **Dental education.** Efforts to integrate the teaching programs with the delivery of health services were continued, especially in Central America and Panama. The analysis of this topic at the Meeting of Dental Associations of the Isthmus (FOCAP), attended by officials of associations, ministries of health, and universities, should facilitate coordinated action and a better utilization of the participating entities' resources. In this area, PAHO/

WHO cooperated with Brazil, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, and Venezuela. Construction of the building for the School of Dentistry of Trinidad and Tobago progressed during the year; the school is expected to provide service to the English-speaking Caribbean countries in 1985.

1.40 In the area of research, a survey was initiated to assess the effect of dental caries on the children of a community in Antioquia, Colombia, in which salt fluoridation had been instituted several years before. A total of 30 participants from eight countries attended a course on pedodontics and social periodontics conducted jointly by the University of Panama and the University of Illinois (USA). Attention was given once again to problems in the provision of dental care to children in the Member Countries and to present-day technologies available in the United States of America and other countries of the Region for the delivery of preventive and therapeutic services.

1.41 **Veterinary public health.** Activities continued under the 1982-1986 Regional Program of Training in Animal Health for which the IDB had provided a loan of US$2.2 million. In 1984, seven courses on epidemiological surveillance, administration of animal health programs, and social communication were offered, as was a regional seminar on foot-and-mouth disease vaccine. A total of 208 professionals participated in courses given in Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Mexico, Nicaragua, Peru, Uruguay, and Venezuela. By the end of the year, 592 national technicians—mostly employees of veterinary public health services—had received training. This staff provides a basis for the institutionalization of similar training within the countries.

1.42 With the completion of studies by its eighth graduating class in 1984, the Regional Education Program for Animal Health and Veterinary Public Health Assistants (REPAHA) had trained a total of 239 assistants from 17 countries and territories of English-speaking countries in the Caribbean. More than 82% of the graduates of REPAHA currently are working in their countries of origin in fields related to their training. An evaluation of the impact of this project, made during 1984, revealed progress in continuing education and in linkages between REPAHA and the future School of Veterinary Medicine in Trinidad and Tobago. Since the United Nations Development Program (UNDP) funding expired in 1984, the Member Countries, wishing to ensure the program's continuity, established a fund which they will finance and converted REPAHA into an agency of CARICOM.

1.43 **Public health and health administration.** Within the Plan of Priority Health Needs in Central America and Panama, the Governments of the Isthmus prepared a proposal for a program of education in public health that calls for the training of 600 professionals and 2,000 middle-level and auxiliary staff. Exchanges of experience, personnel, and educational materials among the Region's schools of public health were encouraged. In this regard, the School of Public Health of Peru was evaluated, and the priority activities for 1985 of the School of Public Health of Mexico were identified.

1.44 In the area of education in health administration, in addition to the support extended to specific country programs, the profile for middle-level, technical-administrative personnel was defined through PASCCAP for use in conducting a training program for this group in conjunction with the National Distance Education University (UNED) of Costa Rica. In health services administration, PAHO/WHO collaborated with the Latin American Institute of Economic and Social Planning (ILPES) in the preparation of an intersectoral project to be carried out jointly by the two agencies. The project primarily will analyze the impact of the present economic crisis in the social sectors of the Latin Ameri-

can and Caribbean countries and the effect on the training of personnel. A working group was set up and activities were carried out in Argentina, Brazil, Colombia, Nicaragua, and especially Cuba to promote the development of education in epidemiology and the practice of new approaches in this field.

Educational Technology and Teaching Materials

1.45 Impetus was given to the production and distribution of educational materials in priority fields of training. Continued support was extended to the national educational technology centers in Brazil, Cuba, Ecuador, Honduras, Nicaragua, Panama, and Peru. Particular attention was given to the Educational Technology and Health Nucleus (NUTES) at the Federal University of Rio de Janeiro, Brazil, which serves as the focal support and coordination point for centers in other countries. NUTES initiated computerized training evaluation activities in Cuba. In Peru, regulations were approved for the Educational Technology in Health Centers (CENTES), a combined project of the Ministry of Health of Peru, the National University of San Marcos, and PAHO/WHO. As part of the process of structuring the network of educational technology centers, an analysis of the existing centers in Central America and Panama was conducted. Support was given to the development of CENTES in Nicaragua, with an effort made to achieve an interinstitutional arrangement similar to that of CENTES in Peru. Two courses were conducted in Haiti, one on integrated evaluation of the training and service process for officials of the National Malaria Service and the other on educational technology.

1.46 Beginning with the distribution of questionnaires to students and educational institutions, PAHO's Expanded Textbook and Instructional Materials Program (PALTEX) was evaluated with a view toward possible restructuring. The decentralized program in Brazil and the medical, veterinary, and dental textbook programs of Argentina, Chile, Colombia, Mexico, Uruguay, and Venezuela were evaluated.

Bibliographic Information Systems

1.47 Concerted efforts were made through the Latin American Center on Health Sciences Information (BIREME) to consolidate the Latin American Health Information Systems. A summary of the activities of BIREME appear in chapter 3 of this *Report*.

Community Health Training Program for Central America and Panama (PASCCAP)

1.48 PASCCAP continued to serve as a vehicle for promoting the formulation of national human resource policies with the participation of the ministries of health, social security institutions, and universities of Central America and Panama. As part of this effort, a scheme was developed for human resource planning in accordance to each government's primary health care strategy and health policies. National health and human resource studies were being conducted in Guatemala and Honduras, and assistance was provided to El Salvador and Guatemala in the design of an information subsystem.

1.49 **Research.** PASCCAP continued to cooperate with national groups in charge of health personnel research. Survey projects on the performance of community health agents were prepared in Guatemala, Honduras, and Panama. Guatemala also formulated projects to assess and strengthen the continuing education system in the areas of educational methodology, identification of needs, and development of educational materials, and to determine ways of linking supervision with continuing education. Eight training workshops on research methodology applied to personnel development were conducted in El Salvador, Guatemala, Honduras, and Nicara-

gua for a total of 564 professionals. A manual of research methodology prepared by the University of Honduras was published with PASCCAP assistance.

1.50 **Development of technology.** Support was given to the establishment of educational technology units at the Universities of Costa Rica and Honduras. Pedagogical training models were designed for El Salvador, Guatemala, and Honduras. Training in educational methodologies was provided to 324 instructors from ministries of health and universities, and a distance education model was being devised. A model for the development of occupational and educational profiles of community and nursing personnel was completed and was being applied in all countries of the Central American Isthmus. Educational and occupational profiles were developed in conjunction with the School of Medical Sciences of the University of Honduras and will serve as a basis for reformulating the school's curriculum.

1.51 **Dissemination of information.** Technical training materials were distributed widely, especially manuals on x-ray diagnosis, research methodology, and formulation of human resource policy. PASCCAP continued to publish its quarterly bulletin for staff of rural health centers and posts. Educational material was distributed for use in the Center for Research and Health Studies (CIES) in public health courses in Nicaragua, and in courses offered by the Medical Technology Section of the University of Costa Rica.

1.52 **Training.** Support was given to continuing education programs for health personnel in Costa Rica, Guatemala, and Honduras in an effort to link them to supervision and research and convert the programs into an ongoing process covering all staff. In this field, a plan of operations involving groups from three health regions was designed in Guatemala. In Costa Rica, assistance was provided in the teaching of an educational unit within the Ministry of Health's continuing education program; 423 officials from the Ministry and the Social Security Agency participated in this training.

1.53 Within the guidelines for bringing the universities into the countries' effort to achieve the goal of health for all by the year 2000, PASCCAP initiated a program of cooperation with various Central American universities, as follows: (1) with the University of Costa Rica, the production of educational materials and support of the health research and education units; (2) with the University of El Salvador, the initiation of a process to reformulate curricula in the various health area programs; and (3) with the School of Medical Sciences of the University of San Carlos of Guatemala, the design of an educational program including teaching-service integration, research, and faculty training at the San Juan de Dios General Hospital.

1.54 **Technical cooperation.** Within the Plan for Priority Health Needs in Central America and Panama, PASCCAP collaborated in the formulation of 16 human resource projects. It also coordinated the preparation of five intercountry human resource projects in the areas of public health, training of middle-level technicians, health personnel surveys, educational development and continuing education, and the start-up activities for the Central American Network of Documentation and Information Centers. Three of these projects were expected to begin in 1985.

Administration of Fellowships

1.55 In 1984, PAHO/WHO awarded a total of 1,441 fellowships in the Americas, of which 990 or 69% were awarded at country level. Under decentralized administration, 113 fellowships were awarded in the Caribbean subregion and 877 in Latin American countries for studies within the respective socioeconomic subregions. Awarding fellowships to individuals in countries of similar language, culture, and health conditions fosters Technical Cooperation Among Developing Countries, enhances the accessibility of the

learning experience, and increases the likelihood of acquiring appropriate technology (table 1).

1.56 Group fellowships continued the increase begun in 1983, going from 31% to 32% of the total. Long-term fellowships remained the same, and short or travel fellowships declined slightly (tables 1 and 2).

1.57 Of the 1,441 fellowships awarded in 1984, 368 (26%) were in public health and other administrative fields, a decrease from the 31% of 1983 and a reverse of the prevailing trend. Environmental health fellowships rose from 9% to 12% of the total awarded; nursing continued its decline by dropping from 5% to 4%; maternal and child health rose from 5% to 7%; and other health ser-

Table 1. Fellowships awarded in the Americas, by country of origin and type of training, 1984

	Type of training			
Country of origin of fellows	PAHO/WHO organized or assisted group courses	Long-term fellowships	Short-term fellowships	Total
Antigua and Barbuda	2	2	3	7
Argentina	23	—	13	36
Bahamas	1	1	3	5
Barbados	4	12	13	29
Belize	1	8	2	11
Bolivia	18	5	3	26
Brazil	25	2	100	127
Canada	—	2	8	10
Chile	20	2	25	47
Colombia	18	6	25	49
Costa Rica	5	19	22	46
Cuba	43	4	80	127
Dominica	1	4	7	12
Dominican Republic	34	2	27	63
Ecuador	19	2	19	40
El Salvador	20	7	22	49
Grenada	1	5	1	7
Guatemala	14	19	33	66
Guyana	1	1	22	24
Haiti	8	12	24	44
Honduras	10	5	16	31
Jamaica	4	9	29	42
Mexico	31	4	45	80
Nicaragua	17	9	67	93
Panama	18	15	9	42
Paraguay	25	2	23	50
Peru	57	4	37	98
St. Christopher and Nevis	2	1	1	4
Saint Lucia	1	6	6	13
St. Vincent and the Grenadines	—	3	7	10
Suriname	2	2	8	12
Trinidad and Tobago	1	7	15	23
United States of America	—	—	17	17
Uruguay	14	—	15	29
Venezuela	25	1	24	50
British Territories	2	7	11	20
French Antilles, Guiana	—	—	2	2
Total	467	190	784	1,441

— None.

Table 2. Fellowships awarded in the Americas, by field of study and country of origin, 1984

	Country of origin of fellows																		
Field of study	Antigua and Barbuda	Argentina	Bahamas	Barbados	Belize	Bermuda	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominica	Dominican Republic	Ecuador	El Salvador	Grenada	Guatemala	Guyana
Health Organization																			
Public Health Administration	—	—	1	3	—	2	1	1	1	4	8	1	1	3	3	—	—	9	2
Hospital and Medical Administration	—	—	—	—	—	—	—	—	—	—	—	3	—	1	—	3	—	3	—
Other PHA Sub-fields	1	8	1	6	3	3	23	1	10	6	3	35	1	10	14	15	1	5	8
Sanitation																			
Sanitary Inspection	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Sanitary Engineering	—	—	—	—	—	—	6	—	—	—	—	—	—	—	—	1	—	1	—
Other Specialized Fields	1	—	1	2	—	—	16	—	1	5	3	13	1	10	5	3	—	22	—
Nursing																			
Nursing Education	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	2
Public Health Nursing	—	—	—	—	3	—	—	—	—	—	2	—	—	5	—	1	—	—	—
Nursing Services	—	—	—	3	2	—	1	—	—	—	1	—	—	—	—	—	—	—	4
Other	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	1	—	—
Maternal and Child Health	—	6	—	—	—	—	12	—	3	3	3	1	—	2	—	—	—	—	—
Other Health Services	—	—	1	4	1	—	6	1	2	1	3	3	4	3	—	—	2	2	—
Mental Health	2	—	—	3	—	—	2	—	—	—	1	—	—	—	—	—	—	—	—
Health Education	—	—	—	—	—	—	1	—	1	—	2	1	1	—	—	1	—	—	1
Occupational Health	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—
Nutrition	—	1	—	—	—	1	4	—	—	1	1	—	—	—	1	—	—	4	—
Health Statistics	1	—	—	—	—	1	1	—	1	—	—	2	—	1	—	—	—	1	4
Dental Care	—	—	—	—	—	—	3	—	3	2	—	2	—	7	—	16	—	—	—
Rehabilitation	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Control of Pharmaceutical Preparations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—
Communicable Diseases																			
Malaria	—	—	—	—	—	2	—	—	—	—	—	—	—	1	—	—	—	—	—
Tuberculosis	—	—	—	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2
Zoonoses	—	1	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
Foot-and-Mouth Diseases	—	1	—	—	—	1	—	—	1	1	—	—	—	—	1	—	—	—	—
Leprosy	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	1	—	—	—
Other Communicable Diseases	—	—	—	—	—	—	5	—	—	—	—	1	—	—	—	—	—	2	—
Laboratory Services	—	3	1	1	—	1	4	—	1	4	—	8	—	2	1	—	—	—	—
Veterinary Public Health	—	12	—	1	—	10	6	1	8	6	—	1	—	6	7	3	—	4	—
Other	2	2	—	—	—	3	9	—	5	9	2	12	1	4	5	2	1	2	—
Medical Education and Related Sciences	—	1	—	3	—	—	11	5	7	5	7	38	—	6	2	3	1	7	1
Clinical Medicine	—	1	—	1	2	—	13	—	2	2	10	6	—	—	1	—	—	—	—
Total	7	36	5	29	11	26	127	10	47	49	46	127	12	63	40	49	7	66	24

—None.

Table 2. Fellowships awarded in the Americas, by field of study and country of origin, 1984 (Cont.)

Field of study	Haiti	Honduras	Jamaica	Mexico	Nicaragua	Panama	Paraguay	Peru	St. Christopher and Nevis	Saint Lucia	St. Vincent and the Grenadines	Suriname	Trinidad and Tobago	United States of America	Uruguay	Venezuela	British Territories	French Antilles, Guiana	Total
	Country of origin of fellows																		
Health Organization																			
Public Health Administration	12	3	5	1	7	12	—	4	—	—	—	1	1	—	—	—	1	1	88
Hospital and Medical Administration	—	—	—	—	1	2	—	1	—	—	—	—	1	—	—	1	—	—	16
Other PHA Sub-fields	11	4	6	23	12	5	4	15	1	—	—	3	4	4	5	7	5	1	264
Sanitation																			
Sanitary Inspection	—	—	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11
Sanitary Engineering	—	—	—	1	1	1	1	—	—	—	—	—	—	—	3	—	—	—	15
Other Specialized Fields	3	—	1	12	10	2	11	7	—	—	1	2	9	1	3	4	1	—	150
Nursing																			
Nursing Education	—	2	—	—	5	—	—	—	—	—	—	—	—	—	—	1	1	—	13
Public Health Nursing	—	—	1	—	1	—	—	—	—	2	—	—	2	1	—	—	1	—	19
Nursing Services	—	—	—	—	2	1	1	—	—	—	—	—	—	—	—	—	6	—	21
Other	—	—	—	—	—	—	—	—	1	4	2	—	—	—	—	—	—	—	10
Maternal and Child Health	2	—	—	8	12	6	5	24	—	1	—	—	—	3	2	1	—	—	94
Other Health Services	—	9	4	1	8	3	5	4	—	3	3	—	—	—	2	4	—	—	79
Mental Health	—	—	2	—	—	—	1	—	1	1	—	—	—	—	—	—	2	—	15
Health Education	4	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	14
Occupational Health	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Nutrition	—	4	—	—	2	1	—	3	—	—	1	—	—	—	—	—	—	—	24
Health Statistics	3	1	—	1	1	1	—	—	—	—	—	—	1	—	—	—	—	—	20
Dental Care	1	1	2	1	3	—	1	3	—	—	—	—	—	—	—	4	—	—	49
Rehabilitation	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	2
Control of Pharmaceutical Preparations	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	6
Communicable Diseases																			
Malaria	3	—	—	1	—	—	2	5	—	—	—	—	—	—	—	—	—	—	14
Tuberculosis	2	—	6	1	—	—	—	1	—	—	—	1	2	—	—	1	1	—	20
Zoonoses	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	4
Foot-and-Mouth Diseases	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	6
Leprosy	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Other Communicable Diseases	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9
Laboratory Services	1	—	1	3	4	—	1	—	—	—	—	2	—	—	—	8	—	—	46
Veterinary Public Health	—	—	—	9	5	—	9	9	—	—	—	—	—	—	10	6	—	—	113
Other	2	3	2	11	1	1	6	8	1	2	3	2	3	—	3	8	2	—	117
Medical Education and Related Sciences	—	3	1	3	16	5	—	11	—	—	—	—	—	8	1	3	—	—	148
Clinical Medicine	—	1	—	1	1	1	3	—	—	—	—	—	—	—	—	1	—	—	46
Total	44	31	42	80	93	42	50	98	4	13	10	12	23	17	29	50	20	2	1.441

—None.

vices fell from 17% to 15%. Communicable disease studies rose from 20% to 23%, continuing the recent trend; studies of medical education and related sciences rose from 9% to 10%, and clinical medicine from 2% to 3%. The increases in maternal and child health and in communicable disease control in the countries of the Region reflect the priorities being accorded in these areas (table 2).

1.58 Awarding 1,441 fellowships and 83 extensions involved 4,004 months and required US$4,837,805 resulting in an average per month cost of US$1,208, a decrease of almost 2% from 1983. The decrease occurred in all categories except group course fellowships in Latin America and the Caribbean. Several factors contributed to the unusual decrease in the overall cost of fellowships in 1984. In the United States of America and Canada, efforts to identify and utilize institutions which offer education and training of equal quality for lower costs have continued successfully. In Latin America and the Caribbean, stipends—which are established and paid in local currency—as well as other local costs, have not risen at the same rate as the revaluation of the United States dollar. Also, many of the awards made under decentralization were for studies in neighboring countries, requiring lower travel and tuition expenditures.

1.59 Finally, in 1984, 653 fellowships were awarded to women, 45% of the total. This exceeds the highest previous percentage of 43% reached in 1981. Efforts to improve the awarding of fellowships to women as an essential element in health for all appear to be achieving some success.

Expanded Textbook and Instructional Materials Program

1.60 Despite low student buying power brought about by the continuing economic crisis in Latin America, the quantity of material sold through the program during 1984 was essentially equal to that sold during the previous year. The 1984 sales projection at the time of preparation of this *Report* was US$115,000.

1.61 PAHO/WHO is continuing to study ways to make the Program more responsive to the needs of the Member Countries, including financing the efforts of Latin American authors and working groups to produce innovative textbooks and other instructional materials. Considerable progress was made during 1984 in publishing and distributing primary health care manuals in two basic series. In the first PALTEX series, seven manuals and sets of modules were made available to technicians and auxiliaries in the areas of mental health, laboratory techniques, maternal and child health, basic eye care, preparation of community education materials, basic training for the Expanded Program on Immunization, and principles of epidemiology. In the second PALTEX series, manuals in the areas of drug supply administration and hypertension control were provided to persons in Latin American health services in charge of planning and executing primary health care programs.

Diagnostic and Therapeutic Technology

Laboratory Services

1.62 In 1984, the recommendations of the Regional Seminar on Laboratory Programs, held in Chile in October 1983, began to be applied in the countries. The initial emphasis was on expansion of quality control services in the national networks, creation of biosafety programs, and production and distribution of reagents. Chile's Institute of Public Health strengthened its programs in those areas and consolidated its role as Central Laboratory of the national system. It also expanded its activities as a WHO Collaborative Center by increasing its cooperation with other countries. Mexico continued to bolster its National Laboratory System by training staff of reference laboratories and peripheral centers and

strengthening its food protection and epidemiology programs. In Brazil, the laboratory network infrastructure was reinforced by setting up national reference centers and an intensive training program. In view of the impact of the UNDP project on the improvement of laboratories in the Caribbean, in progress since 1981, the countries of that subregion presented a request for its extension.

1.63 In an effort to assist governments in strengthening the management of their laboratories, regional and national courses were conducted in cooperation with the United States of America's Centers for Disease Control (CDC). In addition, coursés aimed at the prevention of potential hazards continued to be offered in Argentina, Brazil, and Trinidad and Tobago, and biosafety committees were established in Argentina, Chile, Colombia, Mexico, and Venezuela.

1.64 Regarding quality control problems, besides the existing quality control programs of syphilis serology, clinical chemistry, identification of *Mycobacterium tuberculosis*, microbiology, and parasitology, a program of quality control in hematology was initiated in 1984. By the end of the year, 10 countries were participating in this new program. This field is related to the production and availability of biological reagents. In 1984 a program was started in which Brazil (Lutz Institute and the Oswaldo Cruz Foundation), Chile (Health Institute), and Mexico (General Management for Biological Products and Reagents) collaborated in supplying some 900 reagents to 11 countries. Argentina and Cuba have adhered to this scheme and are offering, respectively, monoclonal antigen and antibodies for Chagas' disease.

1.65 As an outcome of the regional workshop on standardization of antibody sensitivity tests (Caracas), a network of national centers (Argentina, Chile, Colombia, Mexico, and Venezuela) was established to detect antibiotic sensitivity of etiological agents. The analyses of such tests are being made by PAHO/WHO Collaborating Center in Boston. This information is afterwards distributed to all countries of the Region.

1.66 Advances were made in the dengue virological surveillance program (Caribbean countries, El Salvador, Guatemala, and Mexico) and in hybridoma technology and monoclonal antibody production.

1.67 Immunology services in Central America and Panama were evaluated with a view to establishing a network of immunology centers similar to those in operation in the English-speaking Caribbean countries. With the aim of making maximum use of modern biotechnology for the benefit of human, animal, and environmental health, a network of biotechnology centers engaging in research, training, and information exchange was designed.

Radiation Health

1.68 PAHO/WHO continued its program aimed at fostering the use of the "essential radiology system" in areas lacking radiological services. An evaluation was made of the program in Colombia, where four units had been installed on a pilot basis in the Department of Antioquia in 1983. The findings of the evaluation indicated that the system was covering the most common diagnostic need, the training of auxiliaries for a 1-week period was sufficient, supervision by a professional technician was needed, and the operation of the system was posing no problems. In Nicaragua four units were obtained and installed, the necessary staff was trained, and the basic arrangements for an evaluation were made. Chile is planning to utilize the system in 1985. A survey conducted in collaboration with the Governments of Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, and Nicaragua on the use of x-ray equipment revealed that its utilization in diagnosis was very low in small hospitals, ranging from 1 to 5% as compared to 20 to 30% in referral hospitals. A total of 120 radiation therapy services in Barbados, Bolivia,

Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, and Venezuela were participating in 1984 in PAHO's Collaborative Program with WHO and the International Atomic Energy Agency (IAEA) aimed at accurately measuring the dosage of radiation received by patients under treatment. While there is clearly a trend toward the improvement of dosimetry, 40% of the centers were not as yet fulfilling the precision criteria. In Danbury Hospital in Connecticut (USA), a pilot study was undertaken in conjunction with the WHO Collaborating Center in Nuclear Medicine to determine the precision of dosages in nuclear medicine in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru, and Uruguay. A comparative analysis of the findings will be made and is expected to contribute to an improvement in diagnostic procedures.

1.69 In the radiation protection area, PAHO/WHO collaborated with Argentina in the application of new diagnostic and protective techniques, with Colombia in studies on protection in four localities, with Mexico in the operation of a radiological protection program, and with the Netherlands Antilles in the identification of protection requirements and the preparation of proposed legislation.

Essential Drugs

1.70 Expenditures for drugs continue to increase in the public and private sectors, although the large cost figure for pharmaceuticals marketed in 1983 in Latin America and the Caribbean—more than US$5 billion—does not reflect the real health needs of the Region. Another serious problem is the disparity between the frequently inadequate provision of drugs resulting from the extension of health coverage and the ready availability of pharmaceuticals mainly to urban populations with economic means and access to medical care. Several actions have been promoted by Member Governments with PAHO/WHO support to assure availability of drugs to all populations at a reasonable cost.

1.71 The Technical Discussions held in September 1983 during the XXIX Meeting of the PAHO Directing Council on "Policies for the Production and Marketing of Essential Drugs" drafted a resolution, subsequently adopted by the Council, recommending that governments encourage self-sufficiency in the drug sector. In support of this strategy, the Organization coordinated a study on the production of raw materials in Argentina, Brazil, and Mexico which served as the basis for proposing regional approaches for integrating existing production facilities and expanding their markets. Representatives of the above countries and Spain discussed the proposals at a July 1984 meeting in Mexico and recommended an intercountry program on the production and marketing of raw materials and finished products, as well as on pharmaceutical research and development. PAHO/WHO Member Governments endorsed these recommendations at their XXX Directing Council Meeting in September 1984. PAHO/WHO will be cooperating with the development of this long-term, complex program, which will require high-level political commitment and intersectoral coordination within the participating countries.

1.72 PAHO/WHO gave priority to the essential drugs component of the comprehensive plan entitled "Priority Health Needs in Central America and Panama" agreed upon by the governments of this subregion. Intercountry and national project profiles were developed in the areas of drug policy formulation, production, quality control, joint procurement and supply systems. PAHO/WHO already is cooperating with Central America and Panama within the framework of these project profiles. For example, the Organization, in collaboration with the Central American Bank for Economic Integration (BCIE), completed a study on the establishment of a revolving fund and a joint procurement sys-

tem for Central America and Panama. In addition to the Central American activities, PAHO/WHO is collaborating with the Andean Pact in promoting the exchange of information on prices and sources of raw materials as well as on finished products imported into the Andean countries.

1.73 PAHO/WHO's cooperation with governments stresses the need for a coherent national drug policy, and during 1984 the Organization carried out a number of activities addressing this subject. In Argentina, studies and preliminary activities were undertaken toward the establishment of a special program to provide free essential drugs to the population in need. In Colombia, an intersectoral workshop was developed on the need for a national policy, and health authorities prepared an initial program for 1985. In Nicaragua, studies and proposals were carried out for the formulation of national drug policies and the preparation of essential drug lists and a therapeutic formulary; the Government also established a national body (COFARMA) to assure an integrated intersectoral approach to pharmaceuticals. Technical cooperation relating to specific aspects of drug policy also was provided to Cuba, Ecuador, and Peru.

1.74 Regarding pharmaceutical supply systems, the Barbados Drug Service (BDS) has been designated as a WHO Collaborating Center on Drug Management in the English-speaking Caribbean. Through BDS staff technical cooperation was provided to Dominica for the publication of its national formulary and to St. Vincent and the Grenadines for improving their pharmaceutical supply system. Similar activities are being initiated in Saint Lucia.

1.75 Great emphasis was placed on manpower development during 1984. Subregional "train the trainer" courses on drug supply management were held in Colombia (March) and Costa Rica (November) with the cooperation of the Javeriana University and the Central American Institute of Public Administration, respectively. This activity led to national courses on drug management in Bolivia, Ecuador, Peru, and Venezuela, organized with the collaboration of the Hipólito Unanue Agreement in 1984; courses in Central American countries will be held in 1985-1986. In Brazil, the National Drug Center (CEME) conducted a course addressing the political, technical, and administrative aspects of an essential drugs program.

1.76 To strengthen training in the area of drug quality control, activities were increased with the participation of the Specialized Laboratory of Analysis of the University of Panama, which in 1984 was designated a WHO Collaborating Center in Drug Control. Regional courses on drug approval and registration and on drug bioequivalence were held during the year, and courses on postmarketing surveillance and on chromatographic analysis are being prepared for 1985.

1.77 UNDP-funded projects in drug regulation and control continued in two countries. The Brazil project provides the resources required for the infrastructure development of the Federal Laboratory responsible for the control of foods, drugs, and biologicals. In Guatemala, the project stresses the implementation of the drug approval process and strengthening of the official drug control laboratory which is progressing satisfactorily.

Vaccine and Biologicals Production

1.78 Surveillance of the potency and safety of vaccines used in national immunization programs is a basic PAHO/WHO cooperation activity. As a result of this scrutiny, in 1984 three manufacturers were discarded from the list of suppliers for 1985 because their products did not satisfy PAHO/WHO requirements. In another instance the contract of a polio (live) vaccine manufacturer was revoked after a breach in the consistency of the sterility of the product supply to one of the countries.

1.79 Checking on the stability of the polio (oral) and measles (live) vaccines is now an established routine in the health laboratories

of Argentina, Brazil, Chile, and Mexico. During 1984 four more national laboratories qualified to perform the test: Colombia, Ecuador, Honduras, and Venezuela. All laboratories participating in testing viral vaccines had received reference materials from collaborating laboratories in Mexico and the United States of America. Also, virologists from laboratories in Brazil, Chile, Colombia, Dominican Republic, Ecuador, and Honduras were trained in Mexico on the titration of viral vaccines.

1.80 To enable the vaccine-producing laboratories in Latin America to become self-sufficient and to participate in the international bids for vaccines purchased through the Expanded Program on Immunization (EPI) Revolving Fund, direct PAHO/WHO consultations were maintained, the laboratories were periodically assessed, and the potency of their products was tested in PAHO/WHO-designated reference laboratories. Three vaccine manufacturers in the Region should be able to qualify: Brazil (BCG), Chile (DPT), and Mexico (BCG).

1.81 The stability of yellow fever vaccine produced in Brazil and Colombia is monitored by the National Center for Drugs and Biologicals of the U.S. Food and Drug Administration, the PAHO/WHO-designated reference laboratory for yellow fever vaccine. Studies are being pursued with funds from the International Development Research Center (Canada) to improve the stability of the 17D vaccine at a higher temperature (37°C). In order to support the development of yellow fever vaccine, PAHO/WHO had agreed to provide a grant to the Oswaldo Cruz Foundation (Brazil) and to the National Institute of Health (Colombia). The two laboratories exchange information on production and control, and Brazil trained the scientist in charge of production and control in the Colombian laboratory.

1.82 Regarding smallpox vaccine, WHO keeps an emergency reserve stock of freeze-dried vaccine, estimated at 105 million nominal doses. In 1984, at the request of the WHO Orthopoxvirus Committee, the status of production and of vaccine stocks held by the Americas was surveyed. Amounts of vaccine stock are maintained in the United States of America (15 million doses), Colombia (6.6 million doses), Peru (4 million doses), and Canada (1 million doses). Canada maintains both the primary and secondary seeds, as well as an undetermined volume of pulp; the latter should enable Canada to resume production in the event of an emergency situation.

1.83 Mexico has gradually emerged as a reliable partner that provides services to many of the other countries in the Region. Its National Institute of Virology and National Reference Laboratory rendered the following services: checked the stability and potency of field samples of polio and measles vaccines referred by the national EPI programs in Bolivia, Chile, Colombia, Guatemala, Honduras, Panama, Nicaragua, and Peru; provided technical consultation to Cuba on DPT and measles vaccines; held (October-November) a regional training course in viral vaccines for controllers from Latin American countries; and made available to control laboratories reference polio 1, 2, and 3 neutralizing antiserum. In conjunction with the National Center for Drugs and Biologicals of the U.S. Food and Drug Administration, the National Reference Laboratory in Mexico is taking steps to operate a quality assessment scheme in microtitration of viral vaccines—polio (oral) and measles (live). Laboratories from Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Honduras, Peru, and Venezuela are participating.

1.84 The Clodomiro Picado Institute in Costa Rica and the Oklahoma State University (USA) are conducting research on the characterization and standardization of venoms and homologous antivenoms of *Bothrops atrox*. Venomous factors will be used in preparing improved immune antisera of high specificity and potency.

1.85 Steady and unprecedented growth of biologicals programs in Latin America has increased the levels of biotechnology re-

sources in the countries. An important consequence has been the designation of 12 experts from the Region on WHO panels—6 on blood and blood production, 4 on biological standardization, and 2 in the new WHO program for the development of vaccines.

1.86 **Blood Program.** To carry out the activities of the mid-term program on effective blood transfusion services at the level of the countries, PAHO/WHO relies on a network of collaborating blood banks. A recent survey identified that the blood banks in Brazil, Colombia, Costa Rica, Cuba, Ecuador, Jamaica, Nicaragua, and Uruguay qualify for reference and training in blood banking. During 1984, PAHO/WHO responded promptly to all the countries that had requested PAHO/WHO technical cooperation in assessing their blood transfusion services in order to help define national policies. In Belize, the operation of a commercial plasmapheresis plant undermines the Code of Ethics and undercuts the efforts of voluntary organizations. The Government has adopted legislation regulating the use of blood. A project proposal was drafted and potential funding sources identified. In Peru, the health service has commissioned a task force to advise on the feasibility of a national policy on blood. At the request of the Secretariat of the Hipólito Unanue Agreement, the availability and need for hemoderivatives in Colombia, Peru, and Venezuela have been assessed, particularly in terms of hemophiliaes. One central blood bank per country would be adequate to supply the required amounts of cryoprecipitate for those cases.

1.87 In Brazil, technical cooperation was provided to a local industry that manufactures disposable plastic blood bags from source materials available locally and processes the components from whole blood. The Government designated the National Institute for the Control of Health Quality (INCQS) to control the safety and quality of blood bags.

1.88 Blood transfusion services in Barbados, Belize, Dominica, Grenada, Haiti, Jamaica, and Trinidad and Tobago were assessed in May. A proposal was made to establish an intercountry project to service the blood banks in the Caribbean subregion, using the National Blood Transfusion Center in Kingston, Jamaica, as a reference center for teaching, training, and production of reagents and the Queen Elizabeth Hospital in Bridgetown, Barbados, as a collaborating blood bank for the Eastern Caribbean. In December, blood banks in Argentina, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Nicaragua, and Uruguay began to participate in a WHO-sponsored quality assurance scheme of laboratory tests to enable blood banks to standardize their testing procedures.

Chapter 2. Development of Health Programs

2.1 During 1984, the development of health programs involved activities in the following areas: (a) health promotion and care for the population, especially those groups more exposed to risk factors; (b) development of initiatives to improve environmental conditions, with particular reference to marginal groups of large cities and rural areas; and (c) disease prevention and control. These three areas are closely related. This chapter also considers several priority programs identified by the Organization's Governing Bodies: priority health needs in Central America and Panama, emergency preparedness and disaster relief coordination, women, health, and development, and health statistics.

Health Promotion and Care

Food and Nutrition

2.2 PAHO/WHO's cooperation in this governmental priority area was directed to strengthening national plans and programs to increase food supply and consumption levels and establishing mechanisms for food and nutrition surveillance and the prevention of specific deficiencies. PAHO/WHO also cooperated in the incorporation of food and nutrition as an important element of primary health care and in strengthening national and subregional food and nutrition institutions.

2.3 **Increase in availability of food.** With a view to developing strategies for increasing the availability of basic foods in poor homes, PAHO/WHO, in collaboration with the Institute of Nutrition and Food Technology (INTA) of the University of Chile, is performing studies in Chile, Colombia, and Peru to acquire more precise information on various food subsidy programs in Latin America and their effectiveness. A deep analysis of these studies will be made and supplemented by surveys to be initiated in 1985. In Brazil, the National Food and Nutrition Institute, the National Human Resource Center of the Secretariat for Planning, and the Joaquím Nabuco Foundation were working toward similar ends. These institutions examined the food subsidy and donation programs formulated on the basis of the National Family Pantry Survey (ENDEFE) and the Basic Food Supply (PROAB) and Nutrition in Health (PNS) programs. In Colombia, as a result of the intersectoral workshop on nutrition and food safety (1983), a working group was established including representatives of the National Planning Department, the Ministers of Health, Agriculture, and Education, and the Colombian Institute for Family Welfare. The group recommended continuation of the Food and Nutrition Plan (PAN) and the Integrated Rural Development Program (DRI), both of basic importance for implementing the country's food and nutrition policies. In food assistance, PAHO/WHO coop-

erated in the technical analysis of new projects under the World Food Program (WFP) and the evaluation of projects under way. In 1984, the WFP supplied assistance to 20 countries of the Region through 42 projects that provided 396,902 metric tons of food valued at US$270,293,900.

2.4 **Increase in food consumption**. The recommendations of the food and nutrition education workshop held in Jamaica in 1983 were examined with a view to finding ways of enhancing the role of the family and the community in the improvement of food consumption levels. A working group was convened at the Institute of Nutrition of Central America and Panama (INCAP) in September 1984 to determine the priority activities that should be started immediately and the need for action-oriented research to be submitted by PAHO for the Member Countries' consideration in the areas of social communication; education at the community level; and the training of staff—from community health workers to university-trained personnel—in health, nutrition and food, and related areas. These activities were expected to provide a basis for generating action plans at the country level.

2.5 **Food and nutrition surveillance**. Cooperation with the countries in this field was given renewed impetus by two events. The first was the organization of a PAHO/WHO Consultative Group on Food and Nutrition Surveillance, which revised the operational concept of surveillance and formulated recommendations for orienting PAHO/WHO cooperation toward operations research, staff training, and intercountry technical cooperation. The second event was a regional seminar-workshop on the contribution of schoolchildren's height surveys to food and nutrition surveillance systems, sponsored by INCAP and its Central American member countries and Panama. The governments' activities in this area in cooperation with PAHO/WHO were also outstanding. Thus, in Brazil, the National Food and Nutrition Institute and the Joaquím Nabuco Foundation established a pilot food and nutrition project in the State of Pernambuco. In Chile, INTA was organizing the first international course on food and nutrition surveillance (CIVAN-85) to be conducted in March–July 1985 in conjunction with Cornell University (USA) and PAHO/WHO. In Colombia, the nutrition project at the University of Valle was continued, and the program for nutritional surveillance of the Departments of Valle and Cauca (Kellogg Foundation, German Agency for Technical Cooperation, and PAHO/WHO) was evaluated. With a view toward applying this experience country-wide, a national workshop will be conducted in 1985 on incorporating food and nutrition surveillance into health information systems. In Ecuador, INCAP/USAID/CDC/LATINRECO jointly supported the planning for a national survey of nutrition, health, and food consumption, also to be carried out in 1985. In Peru, a national health and nutrition survey was designed and the data were being analyzed at the end of the year. In The Dominican Republic, the nutritional surveillance activities were revised to include community health workers' application of anthropometric indicators to the infant population.

2.6 **Prevention of specific deficiencies by means of mass-scale actions**. The Organization promoted the control of iodine deficiency, endemic goiter, and cretinism especially in the Andean countries, where the problem is most serious. In Bolivia, acting together with the joint PAHO/WHO-UNICEF Nutritional Support Program, the Ministry of Social Welfare and Public Health implemented the action plan prepared in 1983, achieving the following results: (1) the production of iodized salt with the installation of two new plants at La Paz and Chuquisaca which, together with two other scheduled to go on stream in 1985, are expected to result in the iodization of more than 85% of the salt for human consumption in Bolivia; (2) organization of small salt producers to form cooperatives for the production, iodization, and marketing of iodized salt; (3) initiation of a broad campaign of public education on the benefits of using iodized salt; (4) establishment of a revolving fund to cover the cost of inputs

needed for continuing the salt iodization program; (5) identification of high-risk communities requiring other types of transitional action to combat this deficiency; and (6) implementation of an iodine deficiency monitoring and surveillance system in the primary health care services. In Colombia and Venezuela, action was taken in 1984 to implement the recommendations of the V Meeting of the PAHO/WHO Technical Group on the Control of Endemic Goiter and Cretinism, held in Lima in November 1983. In Ecuador, various groups cooperated with Belgian scientific groups in a study on the eradication of iodine deficiency, to serve as a basis for subsequent programming. In Peru, also with support from the PAHO/WHO-UNICEF Joint Program, the Ministry of Health prepared a plan of action, to be implemented beginning in 1985, for the eradication of iodine deficiency.

2.7 The World Health Assembly gave its approval in 1984 to the global program for the eradication of vitamin A deficiency. Existing programs currently are being strengthened through food fortification in Guatemala and Honduras and the systematic administration of massive doses on a periodic basis in Haiti and the northeast of Brazil.

2.8 With regard to iron deficiency and nutritional anemias, the long-term study on fortification of sugar with NaFeEDTA conducted by INCAP/PAHO/WHO in four Guatemalan communities was completed in mid-1984. The results of the study were highly satisfactory and opened up new avenues for the prevention and control of this deficiency.

2.9 Lastly, in 1984, PAHO/WHO and INCAP promoted the preparation of salt fluoridation programs in Costa Rica, Nicaragua, and Peru to counteract the deficiencies of this micronutrient, so important for oral health.

2.10 **Food and nutrition in primary health care**. In close coordination with UNICEF and with funding provided by the joint WHO/UNICEF Nutrition Support Program, PAHO/WHO cooperated with several governments in the implementation of nutrition support projects as part of primary health care activities. The projects reached varying stages of development in 1984. In Brazil, with PAHO/WHO technical and financial cooperation, the University of Pernambuco and the National Nutrition Institute conducted the first international course on nutrition and primary care in August, attended by 25 physicians, nurses, and nutritionists. In addition, the Organization cooperated with the governments of the Central American Isthmus in developing the food and nutrition component of the Plan for Priority Health Needs in Central America and Panama, described in this same chapter under Special Programs. Dominica, with support from the Caribbean Food and Nutrition Institute (CFNI), has a program already in effect which provides for broad community participation and includes activities for the prevention and control of nutrition-related diseases (such as obesity, hypertension, diabetes, and arteriosclerosis) and their complications, which are highly prevalent on that island and in the Caribbean countries in general. In Haiti, where the project had been operational for 18 months, activities were centered around promoting the widespread practice of oral rehydration, developing means for evaluating the project, and defining strategies for extending it. In Nicaragua, with INCAP support, the 5-year plan of operations was prepared, as was the plan of action for the first year of the project, scheduled to begin early in 1985. The project in Peru was at the stage of consolidating the operational structure, and the Government was planning to inaugurate it in the Puno area at the beginning of 1985. In St. Vincent and the Grenadines, the project was being implemented with the assistance of CFNI; its activities included training staff, developing educational components, and increasing community participation.

2.11 In the area of preventive nutrition, three pilot studies of the PRECAVAS project (the contribution of food and drug interventions to the prevention and control of chronic cardiovascular diseases) were completed in Brazil, Jamaica, and Mexico. The resulting data were being processed and analyzed for

the purpose of designing a common and standard methodology, to be used in 1985, for initiating an epidemiological study of risk factors and their food and lifestyle determinants in contrasting populations of the various countries of the Hemisphere.

2.12 **Strengthening of national and subregional food and nutrition institutions**. Component agencies of the Regional Operations held their first consultation meeting in 1984. In this meeting, in which three United States of America institutes, three from Latin America, the two PAHO centers dealing with food and nutrition (CFNI and INCAP) and the United Nations University, the Coordinating Committee for the Network was established, and agreement was reached on priority activities for the Network to undertake in 1985. The Organization acts as the Secretariat of the Network. One of the Network's primary objectives is to contribute to the strengthening of national institutions to develop national capability for solving food and nutrition, health, and development problems, and to carry on operational research, staff training, and information dissemination. INCAP and CFNI are part of this program.

Institute of Nutrition of Central America and Panama (INCAP)

2.13 The following stand out among INCAP's activities in 1984 in the areas of generation and dissemination of knowledge, training, and cooperation with the countries of the Central American Isthmus.

2.14 **Research**. In nutrition and health, INCAP initiated research on epidemiological and operational aspects of various components of the primary health care strategy, including the feeding of infants with diarrhea, the epidemiology of acute respiratory diseases in urban areas, health and nutrition education, the utilization of health services, and food and nutrition surveillance. The findings were applied in the formulation of infant survival programs to be conducted beginning in 1985. In Costa Rica, the dietary data obtained from the national nutritional survey was analyzed in conjunction with the Department of Nutrition, and a national survey on food practices of schoolchildren and mothers was planned. The Costa Rican Nutrition and Health Teaching Institute received assistance in formulating a proposal, "Evaluation of the Impact of Social Development Programs on the Status of Health and Nutrition, 1970-1984," and negotiations for external financing were begun. In Panama, INCAP collaborated with the Ministry of Health in a study of the cost and nutritional value of the meals served at 33 of the country's hospitals, with a view to making appropriate improvements. Studies were conducted on pollution of food sold in the street and of crops irrigated with wastewater, for the purpose of defining strategies and plans to protect the population. Studies on food and nutrition and socioeconomic factors continued in Guatemala. INCAP continued its studies on the utilization of nontraditional products that can help to solve nutrition problems. The studies on the nutritional value of amaranth were completed, and those on "alado" and "gandul" beans were continued.

2.15 **Technology development**. The field testing of the "Nutricta" corn strain, on which studies were started in 1983, was a highlight in INCAP's effort to improve the staple grains forming part of the subregion's diet. In view of the significant post-harvest losses of legumes, INCAP is working on the development of household, community, and regional technologies for solving this problem. The *Dietary Services Manual* of San Juan de Dios Hospital in Guatemala and the *Supervision and Evaluation Manual* of the Social Security Agency's Nutrition Department of Panama were revised and updated.

2.16 **Dissemination of information**. The main activities in 1984 in the dissemination of technical information were the publication of three issues of the bulletin *INCAP Reports*, distributed primarily on the Central American Isthmus; the publication and distribution of three numbers of the *Supplement on Maternal and Child Nutrition, Breastfeeding, and Weaning*; the publication and distribution of documents entitled *Guidelines for the Establishment of Milk Banks* and *Selected Bibliog-*

raphy on Breastfeeding; and the preparation of 2,975 kits of materials on maternal and child nutrition, breastfeeding, and weaning, which were distributed at 21 events in Central America, Panama, and the Dominican Republic.

2.17 **Training**. Studies on human resource requirements for food and nutrition programs were carried out in 1984 in El Salvador, Guatemala, Honduras, Nicaragua, and Panama. The study in Costa Rica will be conducted in 1985. The findings of these studies will enable the countries to plan the training of human resources for such programs more effectively. The Institute continued to collaborate with San Carlos University in Guatemala in training nutritionists, with the University of Panama in planning the nutrition curriculum, and with the schools of nutrition of the University of Costa Rica and the Central American University in Nicaragua. INCAP continued to offer its graduate course in food science and technology, which is open to professionals from any country in the Region. Given the priority extended by the subregion to infant survival programs, the Institute offered short courses on breastfeeding, food and nutrition education, and information systems for staff of ministries of health and intensified the training in breastfeeding of health professionals in the various countries, including a subregional course in Costa Rica on clinical management of breastfeeding for hospital personnel. A subregional seminar-workshop on the contribution of height and weight surveys in primary schools to the operation of food and nutrition surveillance systems was conducted in Antigua, Guatemala, as part of an effort to analyze the food and nutrition surveillance plans of INCAP's member countries. The workshop was attended by 52 professionals from the agricultural, educational, planning, and health sectors of the Central American countries and Panama.

2.18 INCAP collaborated with the Ministry of Public Health and Social Welfare of El Salvador in the preparation of a preliminary proposal for an inservice training plan for hospital personnel and in a review of the food and nutrition aspects of the training program for rural health assistants. Finally, INCAP collaborated in a seminar-workshop conducted for 40 physicians, nurses, and nutritionists on the evaluation of nutritional status. The Division of Human Resources of the General Health Service Directorate of Guatemala, with the cooperation of INCAP, offered a course-workshop on research methodology applied to health service manpower.

2.19 Table 3 summarizes INCAP's training activities in 1984 by participant's country and Region of origin and by type of training offered.

2.20 **Technical cooperation**. Together with other technical resources of PAHO/WHO, INCAP collaborated with the Governments of the Isthmus in preparing the following subregional projects forming part of a priority plan entitled "Improvement of Food and Nutrition in Central America and Panama" which aim at: (1) strengthening and developing the nutrition surveillance system; (2) food and nutrition education; (3) technical and administrative reinforcement of food aid programs; (4) food fortification; (5) training; and (6) food supply. INCAP carried out studies on the mobilization of resources for priority areas of this plan, and in December 1984 USAID provided a US$7.5 million grant, available for a 5-year period, to assist the countries in their oral rehydration and nutrition activities in the infant survival area. As part of this arrangement, INCAP continued to provide support to the countries in the formulation and implementation of national projects in the priority area of food and nutrition. With regard to breastfeeding, to which particular attention was given, a module was developed for collecting information on significant activities in this field. The module provided for feedback for decision-making. Direct cooperation was given to health authorities in the design of protocols for a number of breastfeeding projects, some of which were subsequently approved and provided with external financing. In Panama, INCAP collaborated with the Ministry of Health in the development of a na-

Table 3. Participants in INCAP teaching programs, by country and Region of origin and by type of training, 1984

Country and Region of origin	School of Nutrition	Graduate courses	Advanced residency	Tutorial training	Training in national courses	Total
INCAP member countries:						
Costa Rica	1	1	—	2	20	24
El Salvador	—	—	—	20	40	60
Guatemala	13	7	—	46	213	279
Honduras	5	—	—	2	39	46
Nicaragua	2	—	—	8	33	43
Panama	—	—	1	3	162	166
Total	21	8	1	81	507	618
Other countries of the Americas:						
Bolivia	—	—	3	—	—	3
Colombia	—	—	1	—	—	1
Ecuador	—	—	1	—	—	1
Mexico	—	1	—	—	—	1
Peru	—	1	—	1	—	2
United States of America	—	—	—	1	—	1
Total	—	2	5	2	—	9
Other Regions:						
Bangladesh	—	—	3	—	—	3
Bulgaria	—	—	1	—	—	1
England	—	—	—	1	—	1
Philippines	—	—	1	—	—	1
Total	—	—	5	1	—	6
Grand total	21	10	11	84	507	633

— None.

tional breastfeeding promotion project which included the design, organization, and implementation of an information center, periodic evaluations of the project, and the preparation of operating plans; the holding of 2 national and 23 regional seminars to promote breastfeeding, attended by 1,200 professionals from the health, education, agriculture, and labor areas; the production and testing of the *Guide for the Promotion of Breastfeeding at the Primary School Level*; and hospital studies to determine the feasibility of establishing "breastmilk banks." In Honduras, a workshop was conducted on the treatment of special breastfeeding situations, and a documentation center was established for the Breastfeeding Support Project.

2.21 Institutional studies were made of 65 food aid programs under way in the Central American Isthmus, with the directors of the national programs and representatives of donor agencies participating in the study in each country. The findings of the survey were discussed first in each country and later at INCAP with representatives of the World Food Program (WFP), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Children's Fund (UNICEF), the United States Agency for International Development (USAID), CARE, and PAHO/WHO. Based on the results of the subregional study, a proposal was developed for cooperation with the food aid programs in Central America and Panama. The project, with a

cost of US$6 million for 5 years, will be submitted to lending agencies with a request for funding.

2.22 In Honduras, the institutional study of food aid programs was completed and analyzed, and an impact evaluation report was prepared on stage 2 of the project on mass communication applied to child health (PROCOMSI). In Nicaragua, in cooperation with the Ministry of Health and UNICEF, INCAP formulated the food program forming part of the country's proposed Five-Year Food and Nutrition Plan, which was submitted to the PAHO/WHO-UNICEF Joint Nutrition Program. Funding in the amount of US$4.8 million was obtained from the Government of Italy.

Caribbean Food and Nutrition Institute (CFNI)

2.23 During 1984, CFNI fulfilled its mandate of service to the 16 governments of the English-speaking Caribbean and one Dutch-speaking country, Suriname. In April 1984, ground was broken for a new headquarters due for completion in mid-1985. The new building will include laboratories for simple testing, monitoring, and evaluation; a food protection and demonstration kitchen; and audiovisual production and training facilities.

2.24 **Research**. The research project designed to evaluate the impact of food price and subsidy policies and practices on food production and marketing, consumption, and nutrition was continued. Data were collected in selected countries on type, rationale, and scope of these policies, and a survey of farmers, fishermen, and food farms was conducted. A study on infant feeding practices, women's work, and social support resources was initiated in Jamaica as a collaborative venture of CFNI, the International Center for Research on Women (Washington, D.C.), and the University of the West Indies, with funding from the Carnegie Corporation of New York. A disaggregated data study of nutritional status at family level continued as a follow-up study to a 1982 household socioeconomic and nutrition survey in Jamaica. A study was conducted of hemoglobin levels in healthy nationals of the West Indies to determine normal hemoglobin values and establish cutoff points applicable to the Caribbean. Iron-folate replenishment was started on 700 school-age children living in the Turks and Caicos Islands to determine whether iron or folate deficiency is a cause of anemia. Anemia control mechanisms in member countries also were investigated. A feasibility study on the fortification of foodstuffs was completed. Studies were completed on the behavior and constraints of family groups in relation to weaning, as well as to the nutritional status of the elderly in selected communities.

2.25 **Technology development**. To help achieve consistency in charting child growth in member countries and to address deficiencies in the present system, CFNI developed not only growth charts specifically to be used in the Caribbean, based on the WHO accepted standards, but also a take-home chart for mothers of young children, which has been field tested in one country. An evaluation of the charts is being conducted. A system of collection, collation, analysis, and utilization of the information on nutrition also is being developed.

2.26 The *Nutrition Handbook for Community Workers* was revised on the basis of field-test responses and was reprinted. The *Food Guide for the Caribbean*, a joint publication of CFNI and the Caribbean Association of Nutritionists and Dietitians (CANDI), was published. It contains basic dietary guidelines to help consumers prevent or control chronic nutrition-related diseases. The outline for a proposed project on the development of educational materials for the prevention, management, and control of diabetes mellitus was drafted and a project proposal was prepared. In response to widespread requests, the *Diet Manual for the Caribbean* was reprinted together with its companion volume, *A Physician's Guide to Diet Ordering*. The final version of a dietary guide for chronic renal failure

also was published following field testing of data. The *Food and Nutrition Manual for Children in Primary Schools* was field tested under the Joint Nutrition Support Program (JNSP).

2.27 **Technical information**. A document on food and nutrition profiles of the English-speaking Caribbean countries and Suriname was compiled as the basis for establishing an effective food and nutrition surveillance system. The quarterly nutrient cost tables continued to be used as a valuable indicator of food surveillance. *NYAM News* features continued to be published; the book *Food and Budgeting for Caribbean Families*, a compilation of these *NYAM News* feature stories, was published as a consumer education tool. The Institute's quarterly bulletin, *CAJANUS*, and an index were published.

2.28 **Training**. The major training activity undertaken in 1984 was the 7-month course in community nutrition in which 19 students from 15 member countries participated. Postgraduate lectures in nutrition continued at the Tropical Metabolism Research Unit and the Department of Social and Preventive Medicine of the University of the West Indies (UWI), as well as undergraduate lectures in the Faculty of Agriculture of the UWI. A workshop for nurses on patient education in hypertension was conducted in the British Virgin Islands. Refresher training for professional nutritionists and dietitians in hypertension management also was provided.

2.29 CFNI cooperated in the implementation of the nurse practitioner training program in the Eastern Caribbean, in programs for the community control of diabetes in Barbados, and in the design and implementation of a 4-month course held in Kingston for food service supervisors. An attempt was made to strengthen intersectoral, nonformal nutrition training at the community level through the establishment of a pilot distance teaching course, using the facilities of the University of the West Indies Distance Teaching Experiment (UWIDITE). A total of 30 community workers in the countries and centers linked by this satellite network participated in a 6-week inservice course, using as a basic tool the *Nutrition Handbook for Community Workers*. A workshop on food and nutrition education in preservice teacher training institutions was held jointly with the Faculty of Education (UWI) and FAO. In St. Vincent and the Grenadines and Dominica, under JNSP, training workshops were held for community health aides, nurses, nursing assistants, agriculture and community development officers, extension workers, and family nurse practitioners.

2.30 **Technical cooperation**. Collaboration between CFNI and CARICOM was strengthened mainly in the area of Regional Food and Nutrition Strategy (RFNS) by developing and implementing programs and projects at the national and community levels. One of these was an intersectoral workshop on "Household Food Availability and Nutritional Status in Jamaica: The Challenge for the Future." The aim was to sensitize principal decision makers in the public and private sectors to food and nutrition problems, with specific reference to socioeconomic factors affecting household food availability and nutritional status. A meeting was held to create a framework for establishing collaboration among agencies involved in food and nutrition projects in Jamaica. Another significant area of CFNI technical cooperation was the JNSP, administered through UNICEF/PAHO/WHO with funding from the Italian Government. Coordinated by the Institute, this program began in May 1984 in Dominica and St. Vincent and the Grenadines and is an approach to incorporating nutrition into primary health care. Its intent is to reduce infant and young child mortality, improve child growth and development, improve maternal nutrition, and contribute to the prevention and control of chronic nutrition-related diseases such as obesity, hypertension, and diabetes. Program components in both countries include support of the Food and Nutrition Council, the training of health and allied personnel, and primary health care activities. Under this program, the food and nutrition policy for Dominica was revised. CFNI also participated in the creation of the Regional Opera-

tive Network of Food and Nutrition Institutions. CFNI developed a project for improving nutrition through primary health care and initiated it in Belize, with major technical support from CFNI/PAHO/WHO and UNICEF. The second meeting of the CFNI Scientific Advisory Committee (SAC) and the 17th Meeting of the Policy Advisory Committee (PAC) were held in Kingston, Jamaica, in December 1984 to review the Institute's work program.

Maternal and Child Health and Family Planning

2.31 Most of the countries in the Region continued to experience declines in maternal, infant, and preschool mortality rates (table 4 and figure 1) along with increases in the coverage of basic health services for mothers and children. Fertility and population growth rates also followed a downward trend, largely because of educational and social progress in the communities with respect to the use of contraceptives.

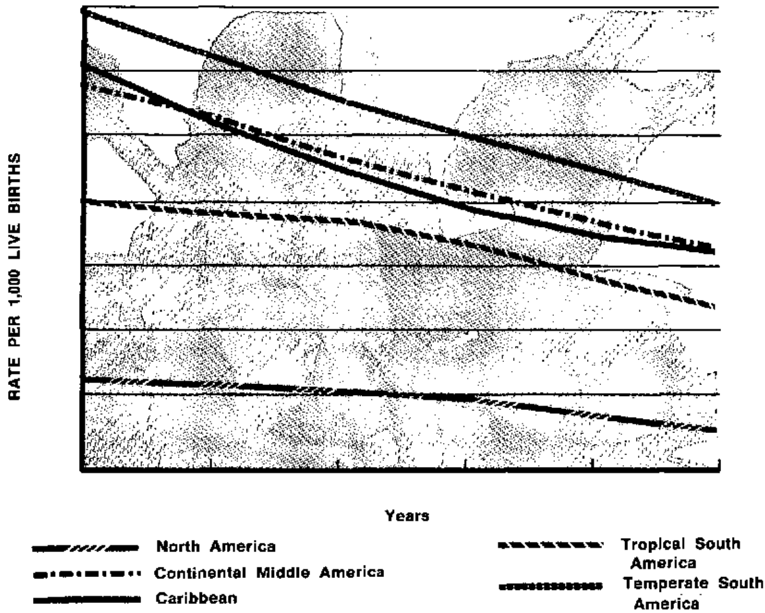
2.32 PAHO/WHO cooperated with governments by furnishing orientation for their efforts to develop methodologies for expanding the coverage of underserved population groups and socially depressed areas. The risk criterion continued to be a useful management tool for determining the most vulnerable communities and families, organizing intersectoral activities to control disease factors, and guiding the rational allocation of resources. A number of national and local seminars on this

Table 4. Infant mortality rate per 1,000 live births in some countries of the Americas, 1960-1985*

Country	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985
Argentina	59.5	56.4	51.3	47.2	43.2
Barbados	60.8	46.4	33.8	27.0	25.5
Bolivia	163.6	157.5	151.3	138.2	124.4
Brazil	111.8	102.3	94.9	82.4	72.4
Canada	26.3	21.3	16.4	12.2	10.4
Chile	110.5	95.1	69.5	46.3	40.0
Colombia	84.5	74.2	66.9	59.4	53.3
Costa Rica	80.6	65.6	50.9	29.3	25.7
Cuba	59.6	47.8	33.8	22.5	20.4
Dominican Republic	110.0	96.3	83.6	73.1	63.5
Ecuador	132.3	114.5	100.1	86.0	77.2
El Salvador	128.0	112.0	101.0	84.8	71.0
French Guiana	. . .	. . .	57.6	47.9	40.5
Guatemala	114.9	101.5	90.2	79.0	67.7
Haiti	170.5	150.2	134.9	120.9	108.2
Honduras	136.8	124.0	110.7	95.4	81.5
Jamaica	54.4	47.0	42.0	30.1	26.2
Martinique	47.7	42.5	34.8	23.0	21.0
Mexico	86.2	78.6	68.6	59.8	52.1
Nicaragua	136.4	122.2	108.9	96.5	84.5
Panama	62.6	53.9	43.8	36.2	32.5
Paraguay	80.6	66.9	52.6	48.6	45.0
Peru	152.2	132.8	106.5	93.5	81.9
Suriname	63.5	54.6	46.7	39.2	33.8
Trinidad and Tobago	48.0	45.0	40.4	34.6	29.9
United States of America	25.2	22.2	18.1	14.0	12.1
Uruguay	47.9	47.0	46.3	41.7	37.6
Venezuela	76.9	64.9	52.4	44.8	38.6

. . . Data not available.
* Source: CELADE, Rome, April 1984. Document CESA/ICP/1984/EGIV/12.

Figure 1. Infant mortality trends in the subregions of the Americas, from 1955-1960 to 1980-1985



Source: Publication CESA/ICP 1984/EGIV/12, Latin American Demographic Center (CELADE).

subject were held in 1984, while the regional effort was focused on three workshops for instructors and "multiplier agents," conducted at La Falda (Argentina), Medellín (Colombia), and Lima (Peru). A total of 83 professionals from 14 countries of the Region participated. An outgrowth of the workshops was the preparation of a manual on the risk approach to health care, which was edited during the year and scheduled for publication early in 1985. Further risk factor studies were conducted with PAHO/WHO support in Argentina, Brazil, Chile, Colombia, Cuba, Guatemala, Mexico, Nicaragua, and Uruguay.

2.33 In the area of child growth and development, the network of cooperating institutions—consisting of the centers at La Plata (Argentina), Havana (Cuba), Mexico City, and Denver (USA), other national institutions, and the Latin American Center for Perinatology and Human Development (CLAP), Montevideo (Uruguay)—intensified its work. A Regional Consultative Group on this subject held a meeting in Washington, D.C., in September, with UNICEF and other agencies interested in human growth participating. The group determined the type of instruments to use for monitoring growth and development and the research projects to support.

2.34 At the regional workshop on "Primary Health Care Strategies and Infant Mortality," held in May in Mexico, papers were presented on infant mortality in the Americas and its implications for the health services; infant mortality trends in Chile, Costa Rica, and Cuba; and experiences of local programs which have managed to reduce infant mortality. In addition to discussing the papers, the workshop examined the characteristics of proposals to extend these studies to other areas. Publications in preparation since 1983 were completed, and a book entitled *Maternal and Child Health and Primary Care—Facts and*

Trends was edited and distributed widely, as was a pamphlet on children's health in the Americas and an annotated bibliography on maternal and child mortality.

2.35 More than 50 researchers from the Caribbean area, Europe, Latin America, and the United States of America attended the Interregional Conference on Appropriate Prenatal Technology, held in November in Washington, D.C. Guidelines for the development of useful prenatal monitoring technologies were developed during the conference.

2.36 Work proceeded intensively on the training of a wide variety of maternal and child health personnel, from practical midwives to professionals with specialized training in this field; emphasis was given to the administration of maternal and child health programs. Six international courses were adapted and conducted to meet the requirements of the programs in Buenos Aires, Argentina; Santiago, Chile (2); Cali, Colombia; Medellín, Colombia; and Montevideo (CLAP), Uruguay. Approximately 200 Latin American participants attended these programs. The analysis, conclusions, and recommendations of the meeting in December 1983 on maternal and child health education were sent to the participating countries and donor agencies. In addition, a guide for the design, utilization, and evaluation of educational materials was published and distributed. First steps were undertaken to implement specific measures in this field.

2.37 PAHO's Executive Committee and Directing Council, at their 92nd and XXX meetings held in June and September, respectively, considered the report by the Director of PASB on "A Basis for the Definition of the Organization's Action Policy with Respect to Population Matters." The Directing Council adopted resolution CD30.R8 urging all governments to strengthen maternal and child programs, bearing in mind the population dynamics problems, as well as to promote the formulation of population policies with multisectoral participation. The identification of priority groups and high-risk populations through demographic analysis was also emphasized. This report was later submitted to health and population groups at the World Bank, the Inter-American Development Bank, and USAID to stimulate coordination in this field.

2.38 Outstanding among the studies on maternal and child health and family planning were the study on the sociodemographic characteristics and problems of adolescent unwed mothers, conducted in Colombia jointly with the Javeriana University; the study on contraceptive education, a model program for adolescents, conducted in St. Christopher and Nevis jointly with the University of the West Indies; and the design for a study on the reproductive behavior of adolescents, to be carried out in Cuba with the Health Sciences Institute. Based on these initiatives, a survey methodology will be available to the other countries in 1985. At the country level, infant mortality surveys were carried out in Bolivia, Paraguay, and Uruguay as projects of the United Nations Fund for Population Activities (UNFPA). In addition, a survey on the incidence of abortion was conducted in Paraguay in conjunction with the National University.

2.39 Using the experience acquired in evaluating the training of traditional midwives in Bolivia, Colombia, El Salvador, Honduras, and Peru, a multidisciplinary group was convened to prepare a more complete model for evaluating training programs for traditional midwives.

2.40 The Organization cooperated with UNFPA in providing basic information for the evaluation of projects on health and education for family life that countries were conducting with the assistance of PAHO/WHO. The findings of an assessment of the approaches followed in maternal and child health in 1983 were used in revising and adjusting the technical cooperation strategies for the English-speaking Caribbean countries. In response to requirements set forth by these countries, UNFPA financed an additional course in family health for nurses. A total of 35 projects, in-

cluding 31 at country and 4 at regional level, were conducted jointly with UNFPA during the year. The budgeted funds amounted to US$7.5 million, and available information indicates that project implementation will exceed 95%. New 4-year projects with a combined budget of approximating US$18 million were started in Brazil, Ecuador, and Grenada, and existing projects in Antigua, Honduras, Nicaragua, and Peru were extended for 4 years at a total cost of nearly US$10 million.

2.41 All 18 maternal and child health projects financed by the W. F. Kellogg Foundation continued to receive technical support from PAHO/WHO during 1984, especially in the qualitative aspects of health activities and in training and research. International courses on maternal and child health with emphasis on primary care received technical and financial support from the Kellogg Foundation. During the annual meeting of coordinators of family planning projects held in Santiago, Chile, it was recognized that the projects had made significant advances, largely as a result of the growing involvement of local institutions and communities in the development of primary care. The meeting also recognized that national and international networks offer very real opportunities for working together on the development and evaluation of health technologies and on health service research. The new work plan for the next 3 years, which the Kellogg Foundation approved, calls for the establishment of six or seven networks in which the efforts and resources of maternal and child health projects will be pooled together with those of health administration projects.

Latin American Center for Perinatology and Human Development (CLAP)

2.42 CLAP continued its activities in perinatal care research and technology, dissemination of information and training, as well as technical cooperation with countries in the organization of perinatal health services.

2.43 **Research and technology development**. Research formerly carried out at CLAP gradually is being transferred to the countries to strengthen national capacities and increase their impact. In 1984, CLAP worked with 17 countries of the Region in joint activities. In the growth and development area, a study was conducted on the accuracy of various techniques for estimating gestational age and monitoring fetal weight and health, and a program was under way for developing simple procedures for estimating fetal pulmonary maturity in the event of premature rupture of ovule membranes and the correlation between placental maturity and fetal pulmonary maturity. With regard to breastfeeding, studies were made on sucking patterns in very low-weight infants, feeding procedures for premature babies, and variance in the flow of milk during lactation. The epidemiology of low birthweight was researched, standards were developed for the management of prematurity during the perinatal period, patterns of contractions during labor were studied, and intracerebral hemorrhaging in low-birthweight infants was investigated. Perinatal record systems based on the use of traditional and simplified perinatal clinical history forms and the pediatric chart were evaluated.

2.44 Regarding the risk approach, studies were made of the time of discharge in low-risk cases and the implications for the mother and infant, the risk presented by perinatal factors, and habits and drug use during pregnancy. Studies also were carried out on patterns of arterial pressure during pregnancy and on perinatal assessments at maternal and child health services.

2.45 **Dissemination of information**. A total of 45 scientific articles prepared at CLAP were published and distributed. Automation of the Center's library in 1984 facilitated the preparation of technical series and the provision of specialized bibliographic assistance to countries. The semiannual bulletin *Perinatal Health* increased its press run to 10,000 copies.

2.46 **Training**. A total of 258 fellows at-

Table 5. Participants in the CLAP training courses by subject and country of origin, 1984

Subject of the course	Argentina	Bolivia	Brazil	Chile	Colombia	Costa Rica	Dominican Republic	Ecuador	El Salvador	Guatemala	Mexico	Paraguay	Peru	Spain	Uruguay	Total
Scientific foundations for comprehensive perinatal care according to degree of risk[a]	—	1	1	1	4	—	1	1	—	—	—	—	1	1	1	12
Specialization in health[b,c]	—	—	—	—	1	—	—	—	—	—	2	—	—	—	1	4
Methodology for epidemiological, operational, and clinical research in perinatology[d]	3	1	1	1	4	—	2	1	—	—	—	1	2	1	27	44
Evaluation of fetal growth and development[e]	6	1	1	2	5	1	1	2	—	—	—	1	5	1	21	47
Standards for prenatal monitoring according to degree of risk	9	1	1	2	6	2	2	2	—	1	2	—	5	—	19	52
Postnatal growth and development[e]	1	1	2	2	4	—	1	1	—	1	1	1	3	1	15	34
Introduction to public health for the perinatal and maternal and child health areas[d]	5	1	1	3	5	—	1	1	3	—	7	2	8	1	27	65
Total	24	6	7	11	29	3	8	8	3	2	12	5	24	5	111	258

— None.
[a]A 7-month course. [b]Continuation of the course on integrated perinatology assistance according to risk. [c]A 2-year course. [d]A 4-week course. [e]A 2-week course.

tended CLAP courses in 1984 (table 5). The Center also offered study visits with specific training programs.

2.47 **Technical cooperation**. A total of 310 days of consulting services were provided to 14 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Honduras, Mexico, Nicaragua, Paraguay, Uruguay, and Venezuela) in response to requests for specific activities. Cooperation was provided mainly in the areas of health service organization, training, research, and standards.

Workers' Health

2.48 The main objective of PAHO/WHO's cooperation in the area of workers' health, as determined in 1983, is to support, promote, and assist in strengthening national occupational health activities within the general health services. Of regional interest in this field was a seminar-workshop on occupational health activities in the health service network, held in March in Campinas, Brazil. The objectives of the seminar were to discuss the implications of the interrelationship between occupational health and the health services, to examine the experiences of the Region's countries in conducting occupational health activities through the network of health services, and to discuss mechanisms and propose strategies for making use of those experiences. A total of 40 participants from 11 countries of the Region attended the seminar, which presented the experience acquired and models applied in various countries, including Brazil, Chile, Colombia, Cuba, and the Dominican Republic. Significant byproducts of this event were the publication (now in process) entitled *Anthology of Experiences* and the distribution of the seminar's final report, which contains useful guidelines for integrating occupational health within the network of health services. During the VII Inter-American Congress on the Prevention of Occupational Hazards, sponsored by the Inter-American Committee on Social Security (CISS) and

held in Oaxtepec, Mexico, in November, PAHO/WHO contributed a document on occupational health activities in medical care programs which described action based on the experiences discussed at the Campinas seminar.

2.49 In 1984, Bolivia and Suriname revised their occupational health programs with the assistance of PAHO/WHO. Bolivia took preliminary action to strengthen the National Institute of Occupational Health (INSO) and transfer responsibility to the health regions for monitoring the working conditions of high-risk workers such as miners and farmhands exposed to organophosphate pesticides. With PAHO/WHO's assistance, Suriname hopes to control the problem of pesticide poisoning, particularly by Paraquat. A number of Brazilian States, including São Paulo and Rio de Janeiro, are in the process of integrating workers' health activities into their adult health programs. Colombia decided to assign an important role in occupational health to the Social Security Institute (ISS) and to strengthen the National Occupational Health Committee. The practical implications and the strategies aimed at developing occupational health in Colombia were examined at the November seminar-workshop on occupational health.

2.50 Agreement was reached with Cuba on terms of reference and on a tentative program for securing the cooperation of the Workers' Medicine Institute in Havana as an additional Regional Collaborating Center in its field. With the cooperation of PAHO/WHO, Chile conducted the first Chilean Congress on Occupational Health and Occupational Diseases, held in Concepción in November. PAHO/WHO also contributed practical suggestions, including the teaching of occupational health in medical schools. Guatemala assigned an important occupational health role to the Guatemalan Social Security Institute (IGSS). Formal arrangements were concluded during 1984 to designate the School of Public Health of the University of Texas in Houston (USA) as a Collaborating Center in occupational health.

Health of the Elderly

2.51 Scientific, technological, and administrative advances have led to significant increases in the 60-and-over age group. In Latin America, this group is expected to grow from the 1980 figure of 23 million (6.4%) to a projected 41 million (7.2%) in the year 2000. The increase in the absolute and relative size of the elderly population has made it necessary for many countries to expand and adapt their health services to meet the demand of that group in a manner consistent with each country's degree of social, economic, and cultural development and national policy on aging.

2.52 In 1984 a number of governments, with PAHO/WHO cooperation, evaluated their programs for the care of the elderly to determine the strategies to follow and the training activities needed. With PAHO/WHO support, Argentina, Chile, and Uruguay held a meeting in Punta del Este for the purpose of establishing specific lines of action on chronic diseases and care of the elderly. This initiative is to be supplemented by a seminar on policies for the care of the elderly, to be held in Buenos Aires in 1985. With technical cooperation from the Organization, Argentina's National Institute of Social Services for Pensioners and Retirees, the agency responsible for the care of 3 million elderly people (i.e., 90% of this group), organized a workshop for updating the training of its staff. Argentina, Barbados, Chile, Colombia, Costa Rica, Cuba, El Salvador, Guyana, Honduras, and Jamaica played an active role in preparing and conducting a survey on needs of the elderly sponsored by PAHO/WHO and assisted financially by the United Nations. Three of those countries (Chile, Costa Rica, and Guyana) completed their studies during 1984.

2.53 The countries that participated in the collaborative study mentioned above were represented at a meeting on orientation of health policies for the elderly, organized by

PAHO/WHO and the Kellogg Foundation and held in Washington, D.C. (USA). A total of 25 experts from Belgium, Canada, Costa Rica, Denmark, the Netherlands Antilles, the United Kingdom, the United States of America, and Venezuela participated in this event and shared their experiences with delegates from Argentina, Barbados, Chile, Costa Rica, El Salvador, Guyana, Honduras, Jamaica, and Uruguay. The meeting was also attended by representatives from the United Nations Center for Social Development and Humanitarian Affairs (Austria) and the International Center for Social Gerontology (France). The meeting identified a number of major questions to consider in planning for the care of the elderly, based on the experience of the developed countries. These included such matters as demographic, scientific, economic, social, and psychological parameters; public information aspects; staff training; social security alternatives; self-care; the role of the health services, with special emphasis on primary care and family and community participation; and the role of nongovernmental organizations, and their collaboration with governments, in the promotion of the relevant policies. It is hoped that the summaries of the papers presented at this event and its conclusions, to be issued shortly by PAHO/WHO, not only will contribute to a better understanding of this basic aspect of public health in Latin America, but also will serve as a source of information and guidance for the promotion of initiatives at the national level.

Health of the Disabled

2.54 The promotion of rehabilitation as a component of primary care and of the general health services has led the countries of the Region and PAHO/WHO to adjust certain aspects of the programming, coordination, and implementation of activities. At its XXX Meeting held in September-October 1984, the Directing Council of PAHO considered the Director's report on this matter and adopted resolution CD30.R7 urging the governments to continue policies and programs on the protection and comprehensive care of the disabled and the prevention of the causes of disability, placing special emphasis on the development of rehabilitation technologies in formulating family- and community-based programs for the disabled within primary health care. This decision constitutes the basis for promoting the activities of the governments and PAHO/WHO.

2.55 Some governments, with the cooperation of PAHO/WHO, are putting the community-based rehabilitation (CBR) strategy into practice. Argentina provided inservice training to health agents from the Provinces of Jujuy, La Rioja, and Neuquén. National officials from Chile, Ecuador, Peru, and Uruguay also examined the possibility of applying the CBR approach. In Mexico, the CBR guidelines were examined in suburban areas. Training activities continued to receive attention in some countries. In Chile, Ecuador, and Uruguay, PAHO/WHO cooperated in the development of courses on orthotics and prosthesis, and in Colombia, in a national congress on physical therapy. Finally, in the English-speaking Caribbean countries, a conference on deafness was held in which 14 countries and territories of the area and Haiti participated.

2.56 Coordination between the Inter-American Institute of the Child and Helen Keller International Incorporated was strengthened in order to jointly prepare a manual of community-based rehabilitation. A meeting was held in Panama, with the cooperation of UNICEF and the International Rehabilitation Agency, to promote the development of national programs for the prevention and rehabilitation of disability in children under age 6. The meeting was attended by representatives of the Central American countries, Panama, and Mexico. A highlight in the area of dissemination was the distribution to the relevant national authorities and private organizations of a publication in Spanish, English, and Dutch on self-care of paraplegics.

Oral Health

2.57 In the area of dental prevention, major emphasis was placed on the development of the capability of countries to implement the fluoridation of refined table salt as an alternative to the fluoridation of water supplies, in accordance with resolution CD26.R39 of the XXVI Meeting of the PAHO Directing Council (September 1979). A travelling seminar was held involving six participants from five countries (Colombia, Costa Rica, Cuba, Jamaica, and Mexico) to review at first-hand the implementation of salt fluoridation in Switzerland and the appropriate machinery, procedures, and materials in West Germany and Holland. During 1984, Colombia and Peru both passed decrees permitting the fluoridation of table salt, and Jamaica advanced in the consideration of this method. In July, the ministers of health of the Commonwealth Caribbean recommended the implementation of salt fluoridation, and steps were taken to identify possible approaches. In Costa Rica, a survey was undertaken to identify the needs of such a program and to estimate table salt consumption. In Mexico and Peru, the requirements for implementing salt fluoridation in those countries were identified. Basic project designs were prepared for modifications of salt plants in Colombia, Costa Rica, Cuba, Jamaica, and Mexico in connection with the requirements of such programs. A follow-up study was initiated in Colombia to evaluate the incidence of dental caries in a village previously involved in a salt fluoridation project. Prevention of dental caries continued through the use of other vehicles containing fluoride in Bermuda's 5-year project. This program showed a reduction of approximately 80% in the incidence of dental caries over the 5-year period. In Dominica, a training program for school teachers in oral health and prevention of dental caries was developed. Support was also provided for the initiation of a massive fluoride rinse program for schoolchildren in Lima, as well as preventive programs in El Salvador, Panama, and Venezuela. A nationwide project for the implementation of a caries preventive program was developed in the Dominican Republic.

2.58 In connection with the development of dental preventive or curative services, a new system for the delivery of dental care was inaugurated in the health services of Viña del Mar, Chile; and, with the Government of Argentina, the provision of dental services within the overall health service programs was reviewed. A multidisciplinary meeting was held in the Dominican Republic to review alternative approaches for the development of dental resources and delivery of services. Likewise, a joint working group finalized a survey to be conducted on the availability of dental materials and equipment and the extent to which such items are imported or exported from the Region.

2.59 Nevertheless, a major concern still exists in the provision and accessibility of dental services to rural and urban marginal populations. With this in mind, initial steps were taken to identify the barriers to the development of oral health in developing countries of the Region which are scheduled to be subjects of discussions during a meeting in Brazil in 1985.

2.60 During 1984, considerable emphasis was placed on the development of audiovisual materials. Notable among these were videotapes on the dental preventive program in Bermuda, simplified systems and equipment in use in programs in Mexico, and aspects of the Organization's program in oral health. Production of audiovisual materials for mass use by community personnel in preventive programs was initiated in the Dominican Republic.

Mental Health

2.61 Programs promoting children's psychosocial development by stimulating their interaction with the environment continued in 11 countries of the Region. Special attention was given to the group of children at greatest risk of retardation of their intellectual develop-

ment because of their vulnerability to biological or social agents. Barbados, Cuba, and Panama initiated activities for coping with disease-inducing psychological factors by means of behavioral modification and tension reduction. Cuba has stationed 600 psychologists at health centers for this purpose. At the International Seminar on the Psychology of Health, held in Cuba in December 1984, the programs of three countries were examined and the relevance of the psychosocial approach to the control of chronic diseases, problems of adolescents, and accidents was underscored. Aid to the parents of retarded children was the topic of a seminar held in Guyana, while the management of psychological problems within the family was the subject of three courses for health center workers in Belize, Costa Rica, and Honduras. In the second Caribbean seminar (the first was held in 1983) on transcultural psychology, held in the Virgin Islands (USA) in March 1984, representatives of the English-speaking Caribbean countries examined the models used in the area for the treatment of mental diseases. Prominent among the recommendations were those on the impact of ethnic factors and the importance of community support. In Peru, a group of pediatricians and general practitioners received training in the identification and treatment of certain mental problems and problems of psychosocial development highly prevalent in infants.

2.62 In response to the progressive increase in problems resulting from alcoholism and drug dependency in the Region and the governments' demand for advisory services, the Organization extended technical cooperation to eight countries and the Caribbean subregion in connection with the preparation of proposals for securing external financing.

2.63 PAHO/WHO collaborated with the Caribbean subregion, through the Caribbean Alcoholism Institute, in the organization of a seminar on traffic accident prevention and the planning of a seminar on the prevention of drug dependency. To deal with the growing cocaine problem in the Region, a seminar for clinical physicians from the countries of the Andean area was sponsored in Bogotá. The Organization, acting jointly with WHO and the Government of Colombia, organized a meeting in September of 22 cocaine experts to prepare a world-wide prevention and control strategy. The WHO Collaborating Centers—including the U.S. National Institute on Drug Abuse and the National Institute on Alcoholism and Alcohol Abuse, the Addiction Research Foundation of Canada, the Mexican Psychiatry Institute, and the University of Miami—have made available consultants from their staff to provide technical cooperation to the national programs. In Guatemala, the Organization participated with the University of Alabama (USA) and the Government in holding the first Latin American seminar on alcoholism in industry.

2.64 Workshops on the organization of community mental health services were held in Anguilla, Chile, and Uruguay. The rehabilitation of chronic mental patients was supported in Chile, Dominican Republic, Guatemala and Peru. In Argentina, Bolivia, Dominica, and Grenada, the national authorities decided, pursuant to PAHO/WHO cooperation, to institute mental health and psychiatric care programs as part of their new national health plans. With the technical cooperation of PAHO/WHO, the mental health programs of Colombia, Costa Rica, El Salvador, Guatemala, and the State of Rio de Janeiro (Brazil) were evaluated, and a new orientation based on decentralization of services and community participation was suggested. Colombia, Costa Rica, El Salvador, Honduras, and Panama continued to extend the coverage of their mental health services by using a network of primary care centers supported by more sophisticated facilities.

Accident Prevention and Control

2.65 Pursuant to a resolution of the 8th Conference of Caribbean Ministers of Health, a workshop on the prevention of traffic accidents in the English-speaking Caribbean

countries was held in June in Bridgetown, Barbados, under the auspices of the Caribbean Community (CARICOM), the Government of Barbados, and PAHO/WHO. The principal purposes of the meeting were to identify the nature and causes of traffic accidents in the Caribbean, recommend methods for reducing their frequency and ameliorating their impact, and develop a plan for reducing the extent of the problem. The meeting was attended by 21 delegates from 10 Caribbean countries, including epidemiologists, police and transportation officials, and health administrators. Salient conclusions included a recommendation calling for the prompt establishment of national highway safety committees and the designation of the Caribbean Epidemiology Center (CAREC) as the agency to coordinate training, epidemiological surveillance, and research in the traffic accident field.

2.66 With the cooperation of the International Bank for Reconstruction and Development (IBRD—World Bank) and PAHO/WHO, a study was made of the traffic accident prevention program in Colombia, particularly with respect to the areas of information and evaluation, as well as highway construction and maintenance. The study's findings will be incorporated into the national accident prevention programs in the form of provisions for specific activities. In Cuba, a workshop was held on the conduct of research on accident prevention in children. Cuba's experience with a survey of morbidity of children under 15 years of age due to accidents was discussed during the meeting. The methodology developed will be offered to other countries of the Region as an instrument for determining the extent of the problem and then establishing appropriate programs.

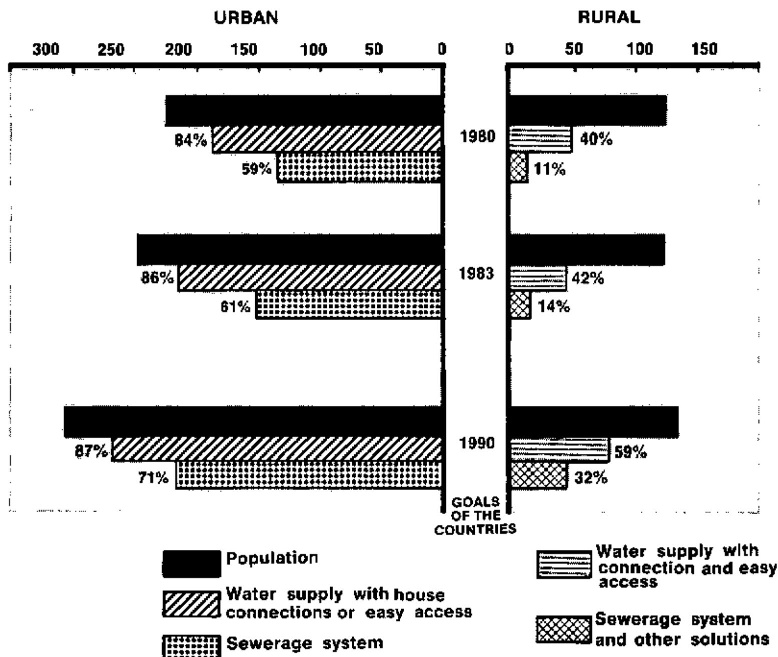
Environmental Health

Water Supply and Excreta and Wastewater Disposal

2.67 The information obtained in 1983 on coverage achieved in 26 Latin American and Caribbean countries with a combined population of 369 million (i.e., 96% of the total Latin American and Caribbean population) was analyzed within the context of the International Drinking Water Supply and Sanitation Decade (IDWSSD), the goal of which is to achieve total coverage of the population, with special emphasis on underprivileged groups (figure 2). The analysis revealed that 86% of the urban population and 42% of the rural population were being served by water supply systems, and 61% and 14% of the urban and rural populations, respectively, by sewage and excreta disposal facilities. Compared with 1982, these figures indicated increases of 2% in water supply in urban and rural areas and in urban sewage and sanitation services, and 3% in rural excreta disposal facilities. Should these trends be maintained, by 1990 the water supply goal for urban areas might be attained, and both the water supply and sewerage goals would be close to attainment in rural areas.

2.68 The implementation of strategies for the Decade continued with a view to implementing the national plans formulated in 1983 by Bolivia, Haiti, Honduras, and Paraguay. Under the cooperative program between the Agency for Technical Cooperation of the Federal Republic of Germany (GTZ) and PAHO/WHO, and in addition to Peru's National Plan for the Decade, action was undertaken in Bolivia and Honduras to strengthen the national institutions responsible for water supply and sanitation services in rural areas. A plan was designed for the provision of water supply and sanitation services in rural areas of Haiti; the plan envisages an increase in the managerial and operational capacity of the national institutions responsible for providing those services in the countryside. As part of the cooperative program, a planning workshop was conducted in Coroico, Bolivia, at which managers of water supply and sewerage companies evaluated progress in the implementation of the national IDWSSD Plan. As a result of this assessment, coordination was improved and a National Association of Water and Sani-

Figure 2. Urban and rural population served by water supply and sewerage systems in 26 Latin American and Caribbean countries, 1980, 1983, and goals to be reached in 1990



tation Companies was established. In the Caribbean area, PAHO/WHO collaborated with Antigua in the analysis of appropriate waste disposal methods; with Dominica in the preparation of the first stage of master water supply and sewage plans; and with Trinidad and Tobago in the formulation of the plan of technical cooperation (UNDP) in training, mapping systems, leaks, maintenance, and pollution control. Within the rural water and sanitation project financed by UNDP, in El Salvador training in underground water and its use was conducted. Also with UNDP resources, the elaboration of the National Plan for the Decade was finished in Guatemala and a project for institutional strengthening of the water sector was financed at a cost of US$314,000 for 1985-1986.

2.69 Despite the countries' problems of indebtedness in the present economic crisis, the total amount of loans provided by the IDB and the IBRD during the fiscal year 1983-1984 came to US$669.5 million, exclusive of water and sewerage components in loans for other sectors, such as agriculture. The national counterpart funds made available during the same period were estimated at US$1.7 billion. In Bolivia, with Inter-American Development Bank (IDB) financing, technical cooperation continued for the implementation of works to improve the water supply facilities of the city of Tarija. Collaboration with Cochabamba's Municipal Water Supply and Sewerage Service (SEMAPA) in the construction of sewerage works also continued, and should be concluded by the end of 1985.

2.70 Within the Global Technical Cooperation Program (IDB/PAHO/WHO), assistance was given in the preparation of the investment project for the construction of water

supply and sanitation systems for San Salvador, El Salvador, four Honduran cities, and Tijuana, Mexico. As a result of a meeting on project development and financing of water and sanitation systems, held in Jamaica in 1983 under the sponsorship of the Caribbean Development Bank, an inventory of projects in the Caribbean in need of financing was prepared and circulated.

2.71 As part of the Plan for Priority Health Needs in Central America and Panama, PAHO/WHO collaborated with the Governments of the Isthmus in the formulation of 70 national projects: 42 for water supply, 16 for sewage and excreta disposal, 4 for solid waste management, and 8 involving other aspects of sanitation and pollution. The estimated investment cost is US$572 million, including US$177 million in external financing. In addition, four subregional projects were identified, dealing with the investigation of water supply sources, solid waste management, production of inputs, and human and technological resources. The cost of these is estimated at US$21 million, including US$11 million in external financing.

2.72 A significant event in project formulation was the cooperation of the Economic Commission for Latin America and the Caribbean (ECLAC) and PAHO/WHO in four water supply and sewage disposal projects in Cuba. In addition to determining the amounts of external resources needed, areas were identified in which horizontal cooperation with other Member Countries (TCDC), including Brazil and Mexico, would be required.

2.73 Possible approaches and solutions to the institutional, economic, technical, and social constraints on the provision of water and sanitation services to marginal populations in periurban areas were examined at the Regional Symposium on Water Supply and Sanitation in Low-Income Neighborhoods of Urban Areas. The symposium, organized by PAHO/WHO under the sponsorship of USAID, AIDIS (Inter-American Association of Sanitary and Environmental Engineering), ECLAC (Economic Commission for Latin America and the Caribbean), and IAWPRC (International Association on Water Pollution Research and Control), was held in Chile in November 1984; a total of 105 participants from 22 countries and 9 international and bilateral agencies attended. The joint analysis of the problems cited will be followed up, at the level of each interested country, by an examination of the political, technical, and financial factors to be considered in national programming.

2.74 A sludge treatment guide, produced as a result of the workshop on transportation, disposal, and utilization of sewage sludge (1983), was distributed to the pertinent national authorities. Sludge may be used as a fertilizer in the English-speaking Caribbean countries.

2.75 With the assistance of CARICOM and the Caribbean Development Bank, a workshop was conducted in Saint Lucia for the purpose of examining the new WHO guide on potable water quality and determining the procedures for its application in the countries of the area. The promotion of the use of simplified systems of water fluoridation in the Dominican Republic, Uruguay, and Venezuela continued. In Mexico, 40 professionals from five States were trained in techniques of fluorine removal from potable water in areas where the fluorine content is high.

Solid Waste Management

2.76 Solid waste management problems continued to intensify as a result of the volume increase and nature of such waste, the rapid growth of cities and underserved urban areas, the limited funding for these services, the transformation in technology, and the economic crisis and recession affecting countries of the Region.

2.77 In this context, PAHO/WHO's collaboration with the governments is addressed to the performance of sectoral studies and the formulation of policies, plans, and programs;

project identification and preparation; promotion of safety in the management of hazardous waste; the mobilization of national resources and intercountry cooperation; and the transfer of experience and technology pertaining to solid waste management. Thus, the Organization cooperated with Paraguay in the formulation of a national solid waste management plan, and with Uruguay in the implementation of a national urban public sanitation plan. Brazil, for its part, issued national urban sanitation directives to govern solid waste management throughout the country. Cooperation with the Caribbean countries centered around the formulation of solid waste management programs.

2.78 In Mexico, PAHO/WHO collaborated with the Secretary of Urban Development and Ecology (SEDUE) in the preparation of urban sanitation projects to be financed by the IBRD (World Bank). In Paraguay, it cooperated with the Municipal authorities of Asunción in preparing an application for World Bank financing. In Nicaragua, it collaborated in the public sanitation project for Managua. The Organization continued to support projects for the improvement of urban sanitation service in Guatemala City and in various cities of Peru. It also helped prepare the Petrolina urban sanitation project in Brazil and cooperated in an assessment of a plan for improvements to urban services in the Bahamas.

2.79 In the field of urban solid waste disposal, PAHO/WHO cooperated in sanitary landfill projects in the Caribbean island of Dominica; Santo Domingo, Dominican Republic; Managua, Nicaragua; and Panama City, Panama. The striking improvement in Usina 5 sanitary landfill in Montevideo, Uruguay, deserves special mention. In Cuba, action began in a number of solid waste programs, notably in the sanitary landfill area, in which significant progress was made with the protection and fencing of 80% of the country's dumping places. In regard to the promotion of safety in the management of special and hazardous solid wastes, the Organization collaborated with Guatemala and with SEDUE of Mexico in a search for solutions to the problem of poultry solid waste and the consequent proliferation of flies.

2.80 An example of the support provided for strengthening community involvement in public sanitation services was the international meeting held at the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) to examine experiences with nonconventional trash collection systems in underserved urban areas. The meeting was attended by 35 professionals from 11 Latin American countries.

2.81 A meeting of urban sanitation services of Latin American Metropolitan areas was held in Rio de Janeiro, sponsored by PAHO/WHO and the Rio Municipal Urban Sanitation Company, for the purpose of fostering mobilization of national resources and horizontal cooperation among countries and among regions within a single country. The meeting was attended by 26 participants and 12 observers from the public sanitation companies of eight major Latin American cities (Bogotá, Buenos Aires, Caracas, Lima, Mexico City, Santiago, São Paulo, and Rio de Janeiro) and from other related institutions. The most important decision taken was to establish a Latin American Network of Collaborating Institutions in Urban Sanitation.

2.82 Significant activities in institutional and human resource development were: the IX Latin American Course on Urban Sanitation in Buenos Aires; national courses in Argentina; the workshop on planning, administration, and financing of sanitation services in Santa Cruz, Bolivia; the workshop on technological aspects of solid waste in Tarija, Bolivia; and the workshop on public sanitation in Chiclayo, Peru.

Human Settlements and Housing in Urban and Rural Areas

2.83 A highlight event was the technical conference on urban climatology and its appli-

cation, especially in tropical areas, held in Mexico under the sponsorship of the World Metereological Organization (WMO) and the United Nations Environmental Program (UNEP), with assistance from PAHO/WHO. The conference examined the current state of knowledge concerning the influence of climate on the life of communities, land use, urbanization, and construction and its potential cointribution to the improvement of human health, the environment, energy utilization, and other social and economic gains. The results of the conference should be highly useful to the countries of the Region in future activities. In Argentina, work began on the collection of information needed for resuming programs to introduce rural housing improvements to control Chagas' disease. In Mexico, the Organization assisted in the formulation of a program to provide basic sanitary equipment for underserved rural communities.

Prevention and Control of Environmental Pollution

2.84 Pursuant to resolution CE873.R10 of the Executive Board of WHO adopted in January 1984, on the International Program for Chemical Safety (IPCS), PAHO's Executive Committee and Directing Council urged the Member Governments to participate in IPCS global activities and to support the implementation of regional policies and strategies. An evaluative study on the status of chemical safety in the Region was initiated as a step toward the preparation of medium-term chemical safety programs. Both proposals are to be submitted to the Directing Council of PAHO for its consideration in 1985.

2.85 In the harbor pollution program of Havana, Cuba, the national authorities' work on the UNDP/UNESCO/CUB project was evaluated, and technical cooperation programming for 1985 and 1986—including the identification of other aspects of monitoring environmental quality—was formulated. In Saint Lucia, potential environmental problems related to the textile industry were identified, and the basic conditions were established for PAHO/WHO collaboration in a study of the environmental impact of certain industrial activities. In the English-speaking Caribbean countries, plans were made with the assistance of the national authorities of Jamaica for a workshop on techniques for environmental impact analysis, scheduled for March 1985. With the participation of UNEP and CARICOM and as part of a project on "Management of the Coastal Waters of the Caribbean Islands," the evaluative study on pollution of the coastal waters of Antigua, Belize, Dominica, Grenada, St. Christopher and Nevis, Saint Lucia, and St. Vincent and the Grenadines was completed during the year. The study's findings were considered by the respective governments and a consolidated study was prepared for CARICOM. Support continued to be given to the Caribbean Environmental Health Institute. Further information is provided on PAHO/WHO collaboration on environmental pollution in the sections corresponding to CEPIS and ECO.

Development of the Environmental Health Infrastructure

2.86 The Organization continued to help Member Countries develop and strengthen the management, operation, and staff of environmental health institutions. As a follow-up to the two subregional workshops held in Panama and Colombia in 1983 on the application of water and sanitation information systems to the monitoring and evaluation of the IDWSSD, a third workshop on the subject was conducted in Georgetown, Guyana, in May 1984. A total of 22 participants attended (from Bahamas, Barbados, Belize, Guyana, Haiti, Jamaica, Suriname, and Trinidad and Tobago), along with 15 PAHO/WHO advisers in planning, health information systems, and environmental health. Subsequently, PAHO/WHO cooperated directly with six countries of the Region in implementing the methodology proposed in the workshops. A microcomputerized information system for

monitoring and evaluating progress under the national water supply and sanitation plans was completed in October.

2.87 Three seminars, forming part of the water and sanitation project planning program of the World Bank's Economic Development Institute (EDI), were held in the Region. The first, held in March at the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) in Lima, was attended by participants from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, and Peru. The second seminar was conducted in May in Panama under the auspices of the National Water and Sewerage Institute (IDAAN) for 40 representatives from Brazil, Colombia, Cuba, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, and Venezuela. The third was held in November in Rio de Janeiro under the sponsorship of the National Housing Bank (BNH) and was attended by 22 participants from Brazil, Dominican Republic, Paraguay, and Uruguay. The topics centered around project planning concepts and methodologies, including analysis of technical, economic, financial, institutional, and human resources.

2.88 In Brazil, the Operational Portfolio and Sanitation Finance System of the National Housing Bank (COSAN/BNH) continued its operation aimed at improving the financing system's capacity in the areas of information, evaluation, contracting, and supervision so that it can better support the implementation of the National Sanitation Plan (PLANASA). PAHO/WHO and the BNH rescheduled the technical cooperation agreement, extending it for 3 more years at an additional cost of US$1 million. The technical cooperation agreement with COSAN/BNH to strengthen the program for institutional development of State water and sanitation companies (PRODISAN) also was extended to September 1985. By means of this program and its line of credit, BNH resources under PLANASA are made available for accelerating the institutional development of State companies, reducing their operating costs, and raising productivity levels.

2.89 In the Dominican Republic, implementation of the IDB-financed project for institutional development of the National Drinking Water and Sewerage Institute (INAPA) began in 1984 (the agreement was signed in 1983). In Ecuador, the Guayaquil Sewerage Company (EMAG) obtained a US$400,000 loan, also from the IDB, for a 30-month institutional development program to be initiated early in 1985 with PAHO/WHO technical cooperation. In Nicaragua, the National Water and Sewerage Institute (INAA) project, financed by a World Bank loan, for development of a national system of rates for water and sanitation service, was completed during the year. INAA was provided with microcomputerized information systems that will enable it to monitor and evaluate its economic and financial performance and ensure equitable service charges. PAHO/WHO also collaborated with INAA in setting up a national rural water supply and sanitation program through a directorate established especially for the purpose.

2.90 In Paraguay, the results of the technical cooperation for institutional development of the National Environmental Health Service (SENASA), for which IBRD funds had been made available, were evaluated. Directives were established to guide the agency in implementing the water supply investment program with the participation of the country's rural communities. PAHO/WHO collaborated with the Lima Drinking Water and Sewerage Service (SEDAPAL) in the organization of a meeting of high-level officials held in February to formulate strategies for making optimal use of managerial and operational capacity in the provision of services. A proposal for the preparation and implementation of the strategic, practical, and operational levels of a planning system also was prepared.

2.91 PAHO/WHO designed a methodology for intensifying its regional technical cooperation with the countries in matters per-

taining to the operation and maintenance of water and sewage systems, with emphasis on optimal utilization of installed capacity, including the detection and elimination of leaks. With support from the IDB and GTZ, the system for training paraprofessional technical personnel in water and sanitation institutions was launched in August in Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua. The aim of the project is to institutionalize, in each of the participating national agencies, an ongoing and self-sustaining system for training paraprofessional technical staff members responsible for the operation and maintenance of water and sewage systems. The project receives institutional and supervisory support from the Committee of Directors and Managers of Water and Sanitation Services for the Subregion (CAPRE).

2.92 In collaboration with the Canadian International Development Agency (CIDA) and the Caribbean Development Bank (CDB), the Organization continued supporting the Subregional Project for Human Resource Development for the water and sanitation sector of the Eastern Caribbean (Anguilla, Antigua, Barbados, British Virgin Islands, Dominica, Grenada, Montserrat, St. Christopher and Nevis, Saint Lucia, and St. Vincent and the Grenadines). The Organization continued to cooperate in the strengthening of the Water and Sewage Authority (WASA) training center in Trinidad and Tobago and the formulation and execution of its training program. PAHO/WHO cooperated with Bolivia, Honduras, Paraguay, and Peru in the formulation of national training plans for the IDWSSD. In support of these activities, the first version of a personnel planning guide for the water and sanitation sector was prepared.

2.93 A meeting of the United States Schools of Engineering (AIDIS) was held in March in Washington, D.C., under PAHO/WHO auspices, to identify potential areas of cooperation between those schools and their Latin American counterparts in improving the teaching of sanitary and environmental engineering. Plans made at the meeting of the Association of United States and Latin American Schools for the execution of joint programs currently are being implemented.

2.94 A start was made on producing auxiliary teaching materials on potable water supplies and excreta disposal for use in training sanitation inspectors and primary care staff of health services.

Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS)

2.95 CEPIS is a basic technical resource for PAHO/WHO cooperation with the Member Governments' environmental health programs. Its responsibilities include research and technology, dissemination of information, training, and technical cooperation with governments.

2.96 **Research**. Research was directed mainly to a search for practical, low-cost solutions to water supply and sanitation problems. In Peru, with financial support from GTZ, work went forward on design studies, construction, and evaluation of slow filters for use in combination with gravel prefilters in rural supply systems. In Peru, with the cooperation of the University of Surrey (United Kingdom), a new system of dual slow filters for small communities was being field tested, along with low-cost equipment for monitoring the bacteriological and physicochemical properties of water in rural supplies. In addition, assistance was provided in the evaluation of laminar rapid filtration plants in Brazil and Peru. In water pollution control, a related priority area, CEPIS collaborated with the General Directorate for the Environment (DIGEMA) of Peru's Ministry of Health in a study on controlling second washing in mine concentrators and prepared a proposal for construction and evaluation of pilot plants for that purpose. CEPIS continued to coordinate a network of researchers collaborating on a study of eutrofication of tropical lakes and ponds. A manual was prepared on planning and designing off-

shore underwater outfalls to control pollution along the coast.

2.97 In low-cost sanitation procedures, CEPIS continued its studies on the treatment and recycling of wastewater in the stabilization ponds at San Juan de Miraflores (Lima, Peru). With support from the World Bank and GTZ, a study was completed on the monitoring and quality control of effluents for reutilization in fish farming, with a view to low-cost production of protein for staple consumption. A protocol was drawn up for a study to evaluate the epidemiological and socioeconomic effects of reusing effluents for irrigation. CEPIS, together with GTZ, collaborated with the Bolivian national authorities on an evaluation study of high-altitude (4,000 m.) stabilization ponds for the treatment of sewage from La Paz.

2.98 A project entitled "Present Situations, Trends, and Promotion of Water Supply and Sanitation Research" was launched in 1984 with financial support from the Canadian International Development Research Center (IDRC) and was under way in Chile, Colombia, Guatemala, and Peru. It is hoped that the project will enable the countries to define their relevant research policies and priorities, and that a regional system can be established to provide information on research being done in the countries. With the aim of promoting research and disseminating its results, CEPIS published the report of the regional seminar on nonconventional water pumping technology in rural systems and prepared and distributed the final report of the regional seminar on rural water treatment studies in Argentina, Chile, Colombia, Costa Rica, and Peru. In addition, it organized an international meeting, sponsored by IDRC and GTZ, of researchers studying nonconventional solid waste collection systems in marginal urban areas, which was attended by 45 specialists and mayors. CEPIS continued its training of national researchers. In the course of the year, seven Peruvian professionals and students received training in stabilization pond research techniques and in procedures for monitoring the quality of water and sewage laboratory analysis.

2.99 **Technology development**. The main focus was on the development of efficient, low-cost, and socially acceptable technologies, particularly for use in underserved communities subject to higher-than-average health risk. Examples included the evaluation and adjustment of the water treatment plant at Cutzamala, Mexico; the assessments of over 10 pilot water treatment facililities in rural Peru, carried out with the support of USAID, the Overseas Development Administration and the University of Surrey (both of the United Kingdom), and GTZ; the feasibility studies for the Puno and Chiclayo water treatment system in Peru; the design of a series of experimental ponds for the recycling of water in Piura; and the recycling of household wastewater in Ica, Pisco, and Trujillo, also in Peru.

2.100 Seminars on technology for leakage control in water supply systems were conducted in Brazil, Colombia, Mexico, and Peru with a view toward building a regional network of agencies to cooperate in the development of control procedures. In sanitation, a working group was formed to consider trash disposal problems in Lima's shanty towns; material was prepared and distributed illustrating the problems and showing how they have been dealt with in similar communities of Brazil and Peru with the help of the community. CEPIS coordinated the meeting of directors of urban sanitary services of Latin American Metropolitan areas, held in Rio de Janeiro, Brazil, under the auspices of the Rio Metropolitan Urban Sanitation Company and attended by 38 participants. Technical cooperation was provided to the Municipality of Lima (Peru) in connection with the Marbella sanitary landfill and to Argentina's National Sanitation Directorate in the treatment of hazardous industrial solid wastes. Highlights in pollution control were CEPIS' role in the regional coordination of the World Environmental Monitoring System (SIMUVIMA) Project and the dissemination of the findings of

analytical quality control evaluations to the national laboratories participating in the GEMS/Water and Preliminary Laboratory Evaluation Projects. These evaluations were carried out with the cooperation of the United States of America's Environmental Protection Agency.

2.101 **Dissemination of information.** The Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA) continued to foster the development of national capacities for the utilization and exchange of information and bibliographical services in the fields of water supply, basic sanitation, and environmental health. A total of 53 additional centers joined the Network in 1984, bringing the number of collaborating units to 130. To strengthen the Network, CEPIS cooperated with Argentina, Bolivia, Brazil, Chile, Cuba, Ecuador, Mexico, Nicaragua, Paraguay, and Peru in training 195 officials in the management, dissemination, and utilization of technical information. Seven countries drew up proposals for the development of national information centers and networks. In addition, the Network's five basic coordination manuals were reviewed and adjusted as an essential activity at the stage of system consolidation. In order to increase the capacity of the Network's computer system, a plan was developed for expanding CEPIS' computation facilities by acquiring an HP-3000 mainframe and microcomputers and instituting a minicomputer system (MINISIS) to process REPIDISCA data. The plan also called for decentralizing the data processing function from CEPIS to the countries.

2.102 REPINDEX, a computerized index containing 700 summaries and having a circulation of 750 copies, continued to be published quarterly for distribution in Member Countries. Several countries made additional copies to increase the number available for local users.

2.103 Documents compiled or published in 1984 under the CEPIS publications program included: *Management of Training Activities in Water and Sewerage Institutions*; *Basic Information for Supervisors of Water Supply and Sewerage Systems*; *Basic Hydraulics for Sanitary Engineers*; *Hydraulics of Underground Water*; *Guidelines for Designing Slow Filtration Plants for Rural Areas*; *Evaluation of Water Treatment Plants*; *Pitometry*; and *Design and Management of Stabilization Ponds and Other Simplified Systems for the Treatment of Wastewater*. In addition, 14 reports and minor technical documents, 23 urban sanitation and water treatment modules, and 3 documents in English on the latter subjects were issued.

2.104 **Training.** With the aim of encouraging activities of the Regional Cooperating Network, CEPIS is planning to achieve a multiplier effect in the use of resources through such strategies as the building up of a regional training program, the training of instructors, the joint preparation of manuals and instructional materials, the testing and adjustment of such materials in pilot courses, and the putting together of audiovisual training packages that national institutions can duplicate economically and use. The Center compiled the experience acquired in the design and teaching of 30 courses in a document entitled *Information on the Assistance that CEPIS Can Provide to Countries of the Region in Their Training Activities in Sanitary, Environmental, and Sanitation Engineering*. The document summarizes the technical details, content, and organization of the courses, all of which can be adapted to meet the needs of an individual institution. In 1984, the Center organized 29 courses that were attended by 732 professionals from most of the countries of the Region. The distribution of the courses by program areas is shown in table 6.

2.105 **Technical cooperation.** Advisory services under the Drinking Water Quality Improvement Program were provided to Peru (Environmental Quality Board—Lima, Puno, and Chiclayo) and Mexico (Guadalajara and Cutzamala plants). Technical information on this subject was furnished to institutions in Brazil, Colombia, Dominican Republic, Ecua-

Table 6. CEPIS training courses and number of participants, by program area, 1984

Program area	Courses at the Center	Courses in the countries	Number of participants	Residencies
Water treatment and improvement of water quality for human consumption	1	6	171	5
Water supply and distribution and control of water leakage	1	6	178	—
Water supply in cases of emergency	—	1	39	—
Planning of drinking water and sanitation projects	1	—	39	1
Management of training activities	—	1	24	—
Wastewater disposal and reuse	—	—	—	7
Ocean outfalls	—	1	20	—
Solid wastes and urban sanitation	1	2	131	—
Information on sanitary and environmental engineering	1	7	130	4
Total	5	24	732	17

— None.

dor, Peru, Uruguay, and Venezuela. Organizations in Brazil, Colombia, Cuba, Mexico, and Peru received assistance in reviewing and adjusting national leakage control programs to extend coverage by reducing the volume of water unaccounted for.

2.106 In sewage collection and disposal, CEPIS collaborated with the executing unit for the IDB Tarija Sanitation Project (Bolivia) in a study on pollution of the Guadalquivir River. Also in Bolivia, major problems arising from the pollution of Lake Titicaca were evaluated and a determination was made of technical studies that should be carried out in order to determine the necessary control measures. CEPIS also advised Paraguay in connection with a preliminary evaluation of the quality of the water in Lake Ypacaraí and the management of that resource; collaborated with the Environmental Quality Board of Puerto Rico in the analysis of pollution problems resulting from industrial discharges from the Caño La Malaria; and cooperated with Argentina, Ecuador, Nicaragua, and Saint Lucia in the review of technical studies and preliminary designs of underwater outfalls for Mar del Plata, the Galápagos, Bluefields, and Castries, respectively.

Pan American Center for Human Ecology and Health (ECO)

2.107 ECO continued studying the interactions between humans and their physical, biological, and sociocultural environment. In addition, it continued to conduct research and training activities, develop technology, disseminate information, and cooperate with the Member Countries in the fields of human ecology and health.

2.108 **Research**. Research during the year was closely linked to ECO's projects for technical cooperation with the countries. With the Government of Honduras, ECO participated in the El Cajón hydroelectric project, especially in the studies on relocation of displaced communities and potential ecological problems. At the request of the Dominican Republic, ECO formulated a proposal on action to prevent potential harmful effects resulting from development of the El Madrigal dam. ECO collaborated with the Government of Guatemala in studies of ways to reduce the harmful public health and environmental effects of arsenic contamination in the Paz River, as well as on a study of environmental pollution from lead. Based on a document

prepared by ECO on the possible impact on health of the Tempesque River irrigation project, the authorities of Costa Rica continued the necessary studies to formulate a plan for dealing with this situation. The Government of the Bahamas reviewed the plan of action suggested by ECO for preventing and monitoring industrial pollution in the Freeport area.

2.109 As a first stage in a program of research aimed at determining the frequency and distribution of cancer pathology due to chemical contamination of the environment, research was initiated to determine the correlation between chemical substances and histopathological cancer. In the second stage, a survey of Latin American industry will be carried out to identify those activities using substances which the International Agency for Research on Cancer has identified as carcinogenic. The School of Public Health of Chile is responsible for the first stage of the study; the Environmental Sanitation Technology Company (CETESB) of São Paulo, Brazil, for the second stage.

2.110 **Technology development**. Drawing on experience of Latin American countries, including field tests in the Mexican States of Aguas Calientes and Mexico, simplified analytical methods were developed for rapidly evaluating sources of air, water, and soil pollution. To facilitate the evaluation of the environmental impact of development projects, ECO, in collaboration with the United Nations Environmental Program (UNEP), initiated the adaptation of environmental analysis techniques to meet the requirements of the countries in the Region. The results of this methodology will be applied in the English-speaking Caribbean countries. In 1984, ECO prepared a manual on the evaluation of public health risks associated with accidents involving chemical agents. An Inter-American Symposium on Emergency Preparedness and Disaster Relief Coordination was held in July under joint ECO/PAHO/WHO sponsorship and with support from USAID. Subsequently, a similar national symposium was held in December in Brazil under CETESB coordination. With the support of various agencies, particularly the University of São Paulo and CETESB, ECO prepared and distributed two guides addressing the problem of scarcity of toxicology laboratories, one on minimum standards for development of a toxicology laboratory and the other on procedures for implementing the most common toxicological and analytical techniques. Both guides were written with the working conditions in Latin America and the Caribbean in mind. To assist health services in the prompt identification and treatment of communities and individuals exposed to potentially hazardous substances, the preparation of a manual on epidemiological surveillance of the effects of exposure to heavy metals, plastics, solvents, hydrocarbon derivatives, and fibers was begun in 1984.

2.111 **Dissemination of information**. ECO restructured its library and entered into an arrangement with the Autonomous University of Mexico providing for the sharing of information and computer equipment, joint data analysis, and joint technical publications on the environment and health. The Center began issuing its monthly publication, ECO TABCONT, a systematically arranged index covering approximately 100 specialized periodicals, and published three bibliographies—on the evaluation of the impact of watershed development projects, on pesticides, and on environmental impact evaluation. A total of 72 technical information requests from 11 countries were answered. The information newsletter *Human Ecology and Health* continued to be distributed quarterly in Spanish (3,000 copies) and English (1,500). The technical publications program was intensified, with a total of 26 titles issued in the various series. Two directories, one on toxicology and the other on toxicology laboratories in Latin America, were published in an effort to facilitate information exchange.

2.112 **Training**. Training focused on methods for evaluating the exposure of individuals to chemicals, with special emphasis on epidemiological and toxicological aspects and environmental impact, and the prevention

and monitoring of the effects of exposure to hazardous substances such as pesticides and asbestos. The training materials published dealt with theoretical aspects, simulations, and analysis. Areas covered included: epidemiological evaluation of chemical environmental risks, fundamentals of toxicology, environmental toxicology, food toxicology, rapid evaluation of environmental pollution sources, environmental and health impact, evaluation, appropriate uses of pesticides, and prevention of risks from exposure to asbestos. Workshops and training sessions were conducted in Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Guatemala, Honduras, Mexico, Panama, and Uruguay for an estimated total of 2,500 participants. Local reproduction of educational materials prepared by ECO was encouraged in order to make them available to a larger number of people.

2.113 **Technical cooperation**. In 1984, ECO cooperated in the implementation of a number of programs and projects with a wide variety of official institutions in its host country, Mexico, including those concerned with health, ecology, and agriculture; social security agencies; universities; and research institutes. Its assistance included *inter alia* support for a study on the structure of the national research program on environmental impacts on health; establishment, together with a consortium of universities, of a Master's degree program in human ecology and organization of an environmental health component in the Master of Public Health programs; inauguration of a national reference laboratory in toxicology; support for field and laboratory research on cases of intoxication by pesticides and other chemicals; development of chemical exposure standards and regulations; and an extensive information program.

2.114 ECO collaborated with the Government of Cuba in a toxicological analysis of pollution problems in Havana Bay, and with Panama in the institution of procedures for the analysis of pesticide residues in food products for export. In Peru, ECO collaborated with CEPIS in the preparation of a protocol for socioeconomic and epidemiological research on the health implications of using treated effluents for irrigation at San Juan de Miraflores. In Honduras, it examined the possibility of establishing a pesticide laboratory to serve Central America.

2.115 The Center, designated in 1984 as a Focal Point by the panel of experts in environmental management of the WHO/UNEP/FAO interagency project, continued to furnish technical assistance to the various components of the Regional Program on Chemical Safety.

Disease Prevention and Control

Epidemiology

2.116 In 1984, priority was given to translating the conclusions and recommendations of the Regional Meeting on Uses and Prospects of Epidemiology, held in Buenos Aires, Argentina in 1983, into strategies and practical activities and strengthening the national capacity to develop epidemiology as a useful tool in the prevention and control of diseases, the planning of health services, decision-making, and evaluation. The final report of the meeting was published in PAHO's *Epidemiological Bulletin* and was distributed widely in the countries of the Region in order to bring these approaches to the attention of the national health authorities. Subsequently, the Directing Council of PAHO, at its XXX Meeting, recognized the far-reaching importance of this topic and adopted resolution CD30.R16, urging the governments to strengthen the practice of epidemiology and expand its area of activity. Implementation will continue with the publication of the entire proceedings of the meeting and the promotion of specific actions in the individual countries.

2.117 To strengthen epidemiological services and encourage new approaches, the

governments are reorganizing and reorienting those services with the assistance of PAHO/WHO. Plans for the establishment of a national epidemiology center were examined in Brazil. In Colombia, Cuba, Dominican Republic, and Mexico, reorganization efforts in epidemiology services were stepped up. In El Salvador, Guatemala, Honduras, Nicaragua, and Panama, guidelines for the assessment of available information on national health conditions and trends were developed in collaboration with the Ministry of Health of each country. In the Caribbean area, Trinidad and Tobago, with support from CAREC, initiated an analysis of health conditions based on the epidemiological method. Among the efforts to improve the countries' epidemiological capacity, mention should be made of the dissemination in the *Epidemiological Bulletin* of information on epidemiological principles and methods, national and regional analyses of epidemiological data, and experience acquired. On the regional level, surveillance against significant diseases was maintained to allow the governments to act promptly in the event of outbreaks. CAREC has proven to be an effective instrument in such circumstances.

2.118 To strengthen their epidemiological capacity, Colombia, Cuba, and Venezuela are mobilizing national resources and have initiated pilot plans aimed at achieving a better definition of what the practice of epidemiology involves. In Cuba, a pilot project was carried out in which the new functions of municipal and regional epidemiologists were put to a test. The national epidemiological services are scheduled to be restructured in 1985 in keeping with the results of that test. In Colombia, a study is being conducted in five distinct geographic areas to arrive at a better understanding of the epidemiological systems and determine the optimal characteristics of those who practice epidemiology. In Venezuela, a start was made on preparing plans for a similar study. Once the national requirements have been determined, networks of national institutions will be established to provide more appropriate training to personnel in epidemiology. A pilot plan to restructure the epidemiology component of training programs in public health is under way in the Dominican Republic and Nicaragua. CAREC continued to conduct important training programs in epidemiology, including its applications in the monitoring of primary health care, food protection, and selected problems of disease prevention and control.

Caribbean Epidemiology Center (CAREC)

2.119 The Caribbean Health Ministers Conference (CHMC), held in Dominica in July 1984, unanimously supported a 3-year extension of CAREC's Agreement and decided that at the expiration of this term there should be an additional 3-year period of PAHO/WHO management (i.e., through December 1990). By December 1984 all but one government had signed the extension of the Agreement.

2.120 The practice of epidemiology in the Caribbean area can be characterized by a variety of situations and problems: noncommunicable chronic diseases are surpassing communicable diseases as the major health problems in recent times; passive surveillance systems, which are traditionally not representative of the whole population, have been geared towards communicable diseases; health information lacks details regarding characteristics of the population and factors influencing the utilization of health services; refinement of indicators is needed for the evaluation of health conditions; health information is noted for its late compilation and limited analysis of data; epidemiological research, training of health personnel in epidemiology, and assessment of health programs and technologies are limited. Within recent years CAREC and other regional institutions have taken steps to improve the use of epidemiology in member countries.

2.121 **Research**. CAREC continued to be actively involved in investigating *Campylobacter*, viral hepatitis (four outbreaks), reported suspicious cases of smallpox, foodborne disease outbreaks (salmonellosis),

typhoid, cryptosporidiosis, excess neonatal deaths, and alleged skin rashes from environmental hazards (such as painting a building). In addition, consultations were provided on a wide range of disease and environmental problems, from the disturbance of cholera graves to the handling of suspect food items. Preparations were made to undertake epidemiological assessments of the health status of each member country. These assessments will be made available to member countries for their consideration in adjusting programs towards the achievement of health for all by the year 2000. This activity is also intended to demonstrate the usefulness of epidemiological techniques in the management of health services.

2.122 **Training**. Training continued as a major function of the Center. Efforts have been concentrated in two major areas: epidemiology and food safety practices. In epidemiology, workshops in the member countries on primary health care surveillance have boosted local capabilities for data collection, analysis, and use for problem identification and program planning and evaluation. As a result of the training of nursing tutors in epidemiology at CAREC, epidemiology is part of the basic nursing course in nursing schools of the Region. The development of training materials (e.g., the CAREC manual of epidemiology and CARIBA data base with practical exercises, together with the audiovisual library) allows training in epidemiology to continue at the local level. CAREC also assists in disseminating epidemiological information through publications such as the *Surveillance Report (CSR)* and *EPI Notes*.

2.123 Broadened services in food safety are available to countries. In addition to training, the Center is developing new capacities in food microbiology and entomology and an audiovisual lending library for continuing services to the member countries. The USAID grant of US$225,000 for a program of food safety training, to be executed from June 1984 to June 1985, has enabled the Center to launch an intensive postbasic training program for inspectors, health educators, and food plant supervisors. The food safety program has included local courses on food establishment inspection for public health inspectors in Barbados, Jamaica, and Suriname, and courses on the food trade in the British Virgin Islands, Jamaica, and Trinidad and Tobago. In cooperation with the U.S. Food and Drug Administration, a course was held for 10 food plant inspectors in Trinidad and Tobago.

2.124 The program for training physicians and nurses in the diagnosis and treatment of sexually transmitted diseases, started in 1983, continued successfully throughout the year. A new manual was developed with the participation of two West Indian consultants and a consultant from the Centers for Disease Control (USA), and 500 copies were distributed. A second edition of 2,500 copies was scheduled for late 1984.

2.125 **Technical cooperation**. During the year, programs for sexually transmitted diseases were assessed in Bahamas, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Christopher and Nevis, and St. Vincent and the Grenadines. Consultants involved were provided through the Technical Cooperation Among Developing Countries (TCDC) program by the Governments of Jamaica and Trinidad and Tobago and by the Government of Suriname for the Guyana programs. CAREC continues to assist the Caribbean countries in developing and strengthening laboratory diagnostic surveillance and analytical capabilities at the national level.

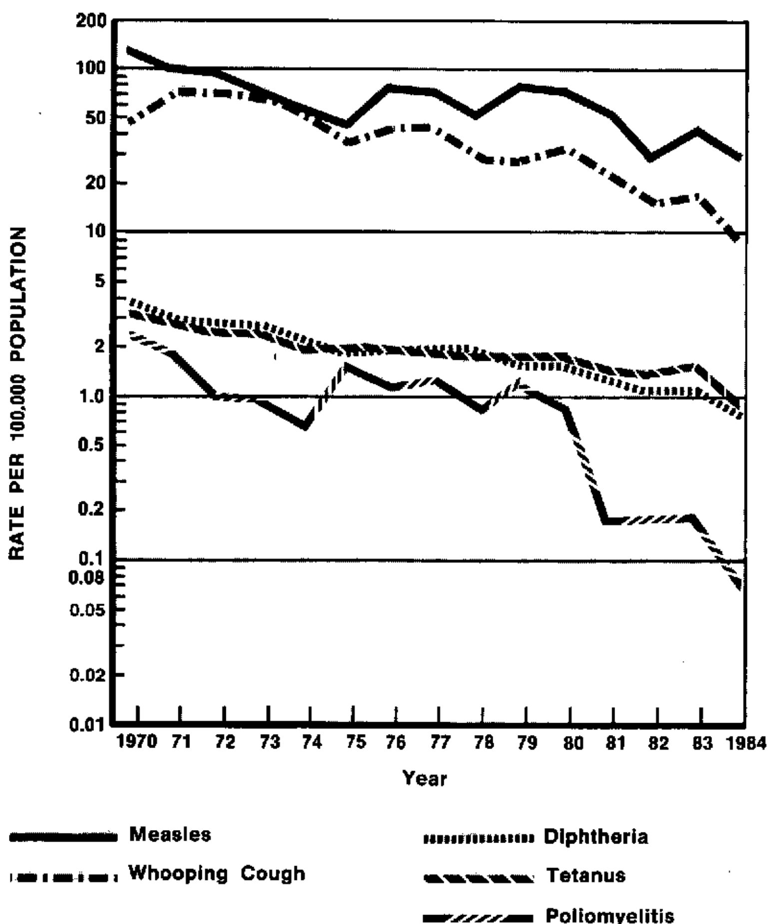
Expanded Program on Immunization (EPI)

2.126 **Progress to date**. EPI program managers from Latin America (20 countries) and the Caribbean (17 countries) held subregional meetings during the past year to review progress made and to set immunization coverage targets for 1985. These meetings were organized in response to resolution CD29.R16

of PAHO's XXIX Meeting of the Directing Council (1983), which recognized that accelerated progress will be necessary to achieve the 1990 EPI goals. At each meeting, participants reviewed one another's work plans and discussed appropriate targets for the next 2 years. Each country then rewrote its work plan in accordance with those recommendations deemed appropriate and feasible. These joint analyses show the following outstanding features:

2.127 Immunization coverage in the Americas has improved considerably over the last several years. An important indicator of EPI impact is shown in figure 3, which plots the incidence rates of polio, tetanus, diphtheria, whooping cough, and measles from 1970 to 1983 in the 20 countries which make up the Latin American subregion. Though programs are at many different stages of development, it can generally be said that important advances have been made in the areas of vaccine sup-

Figure 3. Incidence of five vaccine-preventable diseases in the Region of the Americas[a], 1970-1984[b]



a/ Excluding Bermuda, Canada, and the United States of America

b/ Provisional data for measles, whooping cough, diphtheria, and tetanus for 1984.

ply, extension of the cold chain, selection of effective vaccination strategies tailored to particular needs, training, evaluation, and community participation. Most countries still report significant difficulties in the areas of supervision, information systems, and epidemiological surveillance, and the work plans for 1985 reflect these concerns.

2.128 Almost all countries report they are receiving sufficient quantities of vaccines to cover their target populations and have also made notable strides in improving and expanding the cold chain. Several countries have had problems obtaining enough tools and spare parts to keep their equipment running. A few countries are testing solar refrigeration equipment and have programmed activities relating to this new technology.

2.129 Another important advance in most country programs has been the identification of an appropriate combination of vaccination strategies to meet their particular needs. Besides vaccination in established health centers, these strategies include house-to-house vaccination in urban areas, mini-campaigns in rural areas, and mobile brigades to reach remote areas. The importance of community participation was emphasized during the workshop discussions. Activities planned in this area can be divided into two general areas: use of the mass media, and use of community organizations to promote and actively take part in delivery of immunization services. Several countries use already established community organizations, while others train community leaders.

2.130 Supervision is being increasingly emphasized in many countries. About three-quarters of them plan such activities as scheduling a minimum number of supervisory visits, acquiring additional vehicles and budgeting more per diem for supervisory personnel, conducting training courses for supervisors, and implementing supervisory guidelines.

2.131 Over half the countries have programmed specific surveillance activities, such as surveys to determine immunity levels or target populations in specific areas, institution of a weekly telephone reporting system, reporting and follow-up on vaccine reactions, and the use of seroepidemiological studies. Among the activities mentioned in the work plans to improve disease notification are the design of computer programs to collect and analyze data, new systems to motivate personnel to submit monthly reports, and promulgation of legislation to make disease notification obligatory.

2.132 In rewriting work plans, the major activities for which financial or technical support is being requested in 1984-1985 are: training, cold chain acquisitions and evaluations, the purchase of vaccines, national EPI evaluations, and intercountry visits. Among the external agencies involved in meeting these requests are PAHO, USAID, UNFPA, the European Economic Community (EEC), and UNICEF.

2.133 **1985 Targets—Latin America.** All 20 countries set 1985 vaccination coverage targets for DPT, poliomyelitis, measles, and BCG vaccines. These targets are compared to the actual 1983 levels of coverage in table 7. Almost half the countries of Latin America had coverage levels of at least 50% with DPT, polio, and measles vaccines in 1983, although a much smaller fraction attained coverages of 70% or more. BCG coverage was generally higher, with 12 countries reporting coverages of greater than 50%, 7 of which had coverages of greater than 70%. Figure 4 shows the progress made in increasing immunization coverages from 1978 to 1983 and the dramatic improvement which would result if all countries were successful in meeting their coverage targets by 1985.

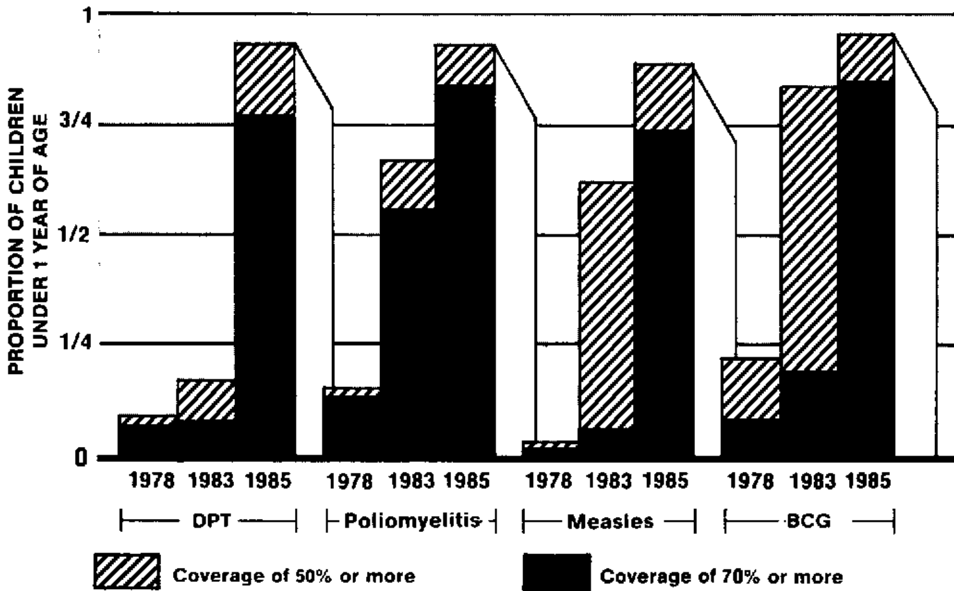
2.134 **1985 Targets—Caribbean.** Table 7 shows each country's 1985 coverage targets for complete immunization of children under 1 year of age with DPT, polio, BCG, and measles vaccines, together with the reported 1983 coverages. Immunization coverage generally improved between 1980 and 1983, particularly in the 12 smaller countries of the subregion with populations of less than 130,000

Table 7. Percentage of vaccination coverage for 1983 and vaccination coverage targets for 1985 in children under 1 year of age, in 39 countries and territories of the Region

	DPT (3rd dose)		Poliomyelitis (3rd dose)		Measles		BCG	
Country or territory	1983	1985 targets	1983	1985 targets	1983	1985 targets	1983	1985 targets
Anguilla	97	95	100	95	70	95	96	95
Antigua and Barbuda	100	90	100	90	48	[a]	[b]	[a]
Argentina	65	70	94	90	62	80	64	85
Bahamas	65	80	65	80	66	80	[b]	[a]
Barbados	69	75	62	75	55	65	[c]	[a]
Belize	59	60	61	60	43	50	81	75
Bermuda	53	[a,d]	53	[a,d]	60[e]	[a,d]	[b]	[a,d]
Bolivia	7	60	11[f]	85	14	60	30	70
Brazil	49	80	100[g,h]	95	52	95	56	75
British Virgin Islands	90	95	75	95	83	95	[b]	[a]
Cayman Islands	89	95	90	95	87[e,i]	95[e,i]	69	95[j]
Chile	70	90	63	90	100	95	85	95
Colombia	41	80	42	80	42	80	78	85
Costa Rica	56	85	54	85	73[j]	95	...	95
Cuba	91[k]	95	93[h]	95	71	95	91[k]	98
Dominica	93	[a]	92	[a]	63	[a]	100	[a]
Dominican Republic	24	70	22	90	23	60	41	60
Ecuador	23[k]	60	27[k]	60	28[k]	60	64[k]	80
El Salvador	45[h,k]	85	41[h,k]	85	47[j]	85	49[k]	85
Grenada	68	85	72	85	7	80	[b]	[a]
Guatemala	44[h]	55	44[h]	55	12	40	25	45
Guyana	56	75	59	75	44[j]	85[j]	73	85
Haiti	...	55	...	55	...	55	...	65
Honduras	70	80	68	80	66	85	74	85
Jamaica	...	65	...	70	...	60	...	70
Mexico	30	80	85	80	85[j]	80	...	80
Montserrat	95	94	95	86	83[e]	51[e]	91	99[l]
Nicaragua	24	70	29[f]	80	23	80	89	90
Panama	61	80	60	80	60	80	81	85
Paraguay	38	80/40[m]	47	80/40[m]	37	80/40[m]	54	80/40[m]
Peru	20[k]	30	19[k]	35	27	43	58[k]	62
St. Cristopher and Nevis	90	90	91	90	[b]	80	[c]	75[n]
Saint Lucia	81	100	80	100	36	[a]	69	[a]
St. Vincent and the Grenadines	80	95	84	90	59	75[n]	[b]	85
Suriname	85	90	83	90	71[o]	90[p]	[b]	[a]
Trinidad and Tobago	60	80	61	80	[b]	[a]	[b]	[a]
Turks and Caicos Islands	70	[a,d]	79	[a,d]	80	[a,d]	98	[a,d]
Uruguay	70	85	74[h]	90	62	95	95	95
Venezuela	49	65	67	80	42	60	48	80

... Data not available. [a]Immunization coverage target for 1985 not established. [b]Vaccine not included in national program in 1983. [c]5 years of age. [d]Information unavailable since country did not attend Second Regional Meeting of EPI Managers held in Trinidad in November 1983. [e]Measles, mumps, and rubella vaccine used. [f]Does not include national poliomyelitis campaigns. [g]Reported number of doses exceeded estimated target population. [h]Second dose. [i]15 months old. [j]1 year of age. [k]Projected. [l]0-5 years of age. [m]Urban and rural targets. [n]2 years of age. [o]12-35 months. [p]1-3 years of age.

Figure 4. Proportion of Latin American children under 1 year of age in countries where immunization coverage is at least 50% or 70%, 1978-1983 (reported coverages), 1985 (coverage targets)



(in order of ascending population size: Anguilla, Turks and Caicos Islands, British Virgin Islands, Montserrat, Cayman Islands, St. Christopher and Nevis, Bermuda, Antigua and Barbuda, Dominica, Grenada, St. Vincent and the Grenadines, and Saint Lucia). The seven larger countries (Belize, Bahamas, Barbados, Suriname, Guyana, Trinidad and Tobago, and Jamaica) have also improved their coverages, but none has yet reached levels greater than 80% with any vaccine.

2.135 **Training**. From the time EPI training activities were launched in early 1979 through 1984, it is estimated that at least 15,000 health workers attended courses and workshops. Over 12,000 EPI modules have been distributed in the Region, either directly by the EPI Program or through the PAHO Textbooks Program. Continued emphasis is being given to the training of personnel in the maintenance and repair of refrigerators; 30 technicians were trained during 1984 in Brazil. As an immediate activity of the Child Survival Program for Central America and Panama, a subregional cold chain and logistics course for 29 supervisors was held in Guatemala in November 1984. Agreements with the schools of public health in Rio de Janeiro and Buenos Aires are permitting the production of training materials adapted to meet national needs. In addition, operational research on immunization, including diarrheal disease control, has been included as part of the development of training materials in Argentina.

2.136 **Cold chain**. The Regional Focal Point for the EPI cold chain in Cali, Colombia, continues to provide testing services for the identification of suitable equipment for storing and transporting vaccines. The evaluation of solar refrigeration equipment is being increasingly emphasized in cooperation with the Department of Thermal Sciences (University of Valle). A summary report of the units tested will be published in the *EPI Newsletter*. A time-temperature indicator for measles vaccine has been also field-tested in three coun-

tries; the results of these trials are being analyzed and incorporated into a global report. A 0.5-liter vaccine container developed at the Focal Point is now ready for production. During 1984, the cold chain Focal Point provided assistance to the Secretary of Health in Mexico in the production of two sizes of ice packs. In addition, technical assistance was given to the Ministry of Health and Social Welfare in El Salvador for the construction of vaccine cold rooms.

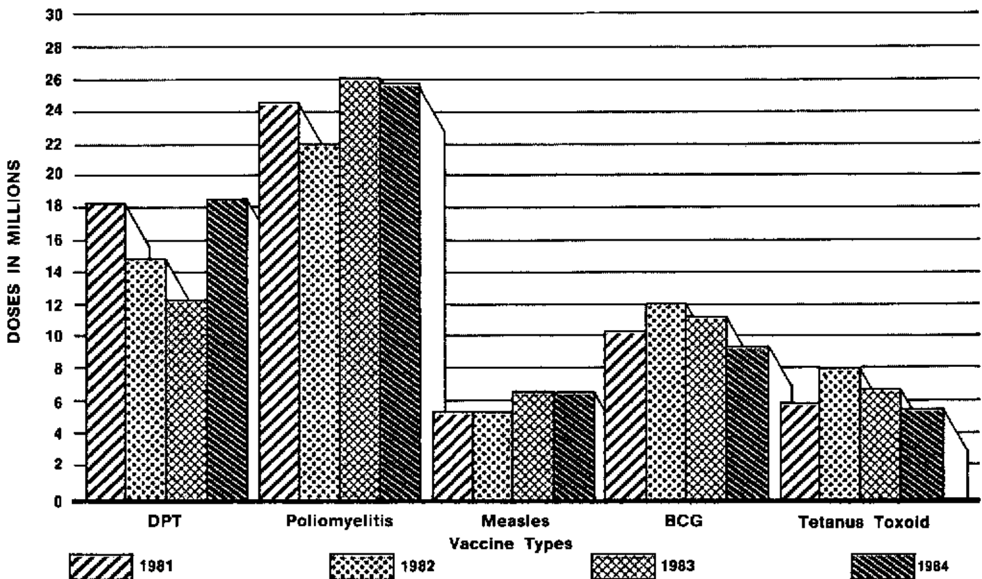
2.137 **Revolving Fund**. PAHO's Revolving Fund for the purchase of vaccines and related supplies received strong support from the United States of America, which contributed US$1,686,000 to the Fund's capitalization. This contribution, together with the UNICEF contribution of US$500,000 made in 1983, raised the capitalization level to US$4,531,112. Despite the economic crisis facing many countries of the Region, Revolving Fund procurements have helped to control vaccine costs during a time of rapid inflation, and the Fund continues to provide good quality vaccines at low prices. Figure 5 shows the number of doses of each of the five vaccines procured through the Revolving Fund for the period 1979-1984 and the estimated procurements for 1985. By the end of 1983, the quality of the vaccines used in over 95% of the countries and territories in the Americas was known to conform to WHO requirements. During its first 6 years of operation, the EPI Revolving Fund placed vaccine orders worth over US$19 million (table 8).

Table 8. Dollar value of vaccines purchased through the EPI Revolving Fund, 1979-1984

Year	Value (US$) F.O.B.[a]
1979	2,259,064
1980	3,250,178
1981	4,303,246
1982	4,209,548
1983	2,763,235
1984	2,342,473[b]
Total	19,127,744

[a]Free on Board (represents the price at originating shipping point).
[b]Total value includes cost (F.O.B.) for diphtheria and tetanus vaccines (pediatric and adult).

Figure 5. EPI Revolving Fund vaccine procurements, in doses, 1981-1984



2.138 **Evaluation**. To improve their immunization services, most countries are evaluating their programs in order to identify problems which impede operations and to define pertinent solutions. Since November 1980, PAHO/WHO has cooperated with 18 countries in conducting comprehensive EPI evaluations. Six countries have also held follow-up evaluations (table 9) to assess the extent to which the recommendations from the first evaluation were implemented. EPI has developed a computerized system to monitor vaccination coverages and disease incidence in all countries of the Region. The first phase of the project, recently completed, involved data collection from each country on target populations from 1979 to the present and on the number of doses administered. Annual reports are produced on vaccination coverages and dropout rates by country, subregion, and region. The second phase of the project, scheduled for completion by early 1985, will permit the generation of reports and line graphs showing reported incidences of each of the EPI diseases from 1970 to the present.

Table 9. Number of EPI evaluations by country in the Region of the Americas, 1980-1984

Country	1980	1981	1982	1983	1984	Total
Argentina	—	x	—	—	—	1
Belize	—	—	—	—	x	1
Bolivia	x	—	—	x	—	2
Brazil	—	—	—	x	—	1
Chile	—	—	—	—	x	1
Colombia	x	—	x	—	x	3
Cuba	—	x	—	—	—	1
Ecuador	—	x	x	—	—	2
El Salvador	—	—	—	—	x	1
Dominican Republic	—	x	—	—	x	2
Guatemala	—	—	—	x	—	1
Honduras	—	—	x	—	x	2
Jamaica	—	—	—	x	—	1
Nicaragua	—	—	—	x	—	1
Panama	—	—	—	—	x	1
Peru	—	—	x	—	—	1
Uruguay	—	—	x	—	x	2
Venezuela	—	—	—	—	x	1
Total	2	4	5	5	9	25

— None.

Diarrheal Diseases

2.139 Plans of operations were formulated in six more countries. In three of them (Suriname, Uruguay, and Venezuela), those plans became operational by using mainly local resources; in the other three (Bolivia, Dominican Republic, and Mexico), considerable regional resources were invested. As a result of regional promotion during 1984, Cuba, Guatemala, and Peru will prepare and implement work plans during the first quarter of 1985. Consequently, there is a total of 23 countries in which control of diarrheal diseases is being promoted as part of a comprehensive program in the American Region. In the rest of the countries, the activities consist mainly in the promotion of oral rehydration therapy (ORT).

2.140 Large-scale local production of oral rehydration salt (ORS) is now under way in Argentina, Brazil, Colombia, Mexico, the United States of America, and Venezuela, while in seven other countries ORS is produced on a smaller scale. As a whole, regional ORS self-sufficiency has been attained. However, the international demand for ORS supplies will probably increase as ORT use expands, not only because virtually all countries are stressing the use of ORS in the home for early diarrhea treatment, but also because of increases in local ORS production costs, forcing countries to reduce local production and procure ORS packets from international sources.

2.141 Regarding training during 1984, two manager training courses on national control of diarrheal diseases were held in Brazil (in Portuguese) and in Mexico (in Spanish). Health personnel in charge of the control of diarrheal diseases (CDD) were trained in the managerial aspects of the program. In Brazil, 45 Brazilian and 9 African Portuguese-speaking individuals from Angola, Cape Verde, Mozambique, and São Tome were trained. In Mexico, a Guatemalan and 57 Mexicans attended the course. The regional program is making plans to train newly appointed coun-

try CDD coordinators. The CDD mid-level supervisory training course was held in six countries, with a total of 282 participants. Countries have found this course very useful and plan to repeat it using locally available funds. Two seminars were organized, one in Chile and the other in Mexico, as part of CDD-ORT promotional activities. A second training course, entitled "Communications Support to Diarrheal Disease Control," was held in Bogotá, Colombia, in March 1984 to evaluate the projects devised after the first course held in Rio de Janeiro, Brazil, in 1982. Participants from 10 countries attended this second course. It was found that the educational materials developed in the projects are being used at the country level.

2.142 Two surveys of diarrheal disease morbidity and mortality were conducted during 1984, one in Belize and one in Suriname. Cooperation was provided to Bolivia and Mexico for the organization of similar surveys. Both countries will conduct them during 1985. Comprehensive reviews of national CDD programs were conducted in Colombia and Costa Rica. These reviews provided useful information for reprogramming the countries' CDD activities.

2.143 Regional efforts were increased to make technical instructional material available to national programs. The technical documents prepared by the Global Program were translated into Spanish and distributed accordingly. Also, in collaboration with PAHO's Textbook Program, in December 1984, a group of experts prepared a handbook on the *Treatment of the child with diarrhea*. Plans to print the modules for a supervisory skills course, as well as other instructional material at the country level, will be implemented during 1985 to ensure their local availability in large scale.

2.144 In research, during 1984, the Steering Committee (SC) of the Regional Scientific Working Group received and evaluated 24 new CDD operational research proposals from scientists within the Region. Of these, two were approved without modifications and six were accepted in principle pending modifications. A total of 32 projects have been approved since 1982; 8 projects have been completed, 15 are currently being carried out, and 9 are pending modifications suggested by the SC for final funding. The Scientific Working Group has formulated new recommendations for preparing country projects in order to conduct and evaluate CDD activities, including planning interventions to reduce diarrheal disease as well as to evaluate the impact of CDD strategies at the community level.

Control of Vector-Borne Diseases

2.145 Persistent upward trends in the number of cases of malaria, dengue, Chagas' disease, leishmaniasis, and schistosomiasis pose an urgent need for a critical examination of existing knowledge and methods and a search for new approaches and technology, as well as effective ways of pooling the use of intra- and intersectoral resources for the prevention and control of these diseases.

2.146 **Malaria**. Of the 255.4 million inhabitants of the 33 countries and political units that were originally malarious, 122,8 million (48%) are living in areas which are now at the maintenance phase, and where there is no transmission. Approximately 132,6 million (52%) still are exposed to the risk of contracting malaria. The number of registered cases in 1984 was 902,799 (see table 10). While some countries succeeded in halting the continuous worsening of the malaria situation, others witnessed a striking increase in the number of cases reported. For the Region as a whole, the situation in 1984 was the worst in the last 20 years. This regression was particularly evident in settlement areas in the Amazon Region and northern South America. The economic crisis that the countries of the Region were facing had a negative effect on the purchase of basic inputs and on the salaries of workers in health programs. Other problems were the wear and tear and irreparable deterioration of equipment for control operations and the high cost

Table 10. Reported cases of malaria in the Americas, 1981-1984

Country or territory	Population in malarious areas, 1984 (in thousands)	Reported cases			
		1981	1982	1983	1984
Argentina	3,752	323	567	535	431
Belize	160	2,041	3,868	4,595	4,117
Bolivia	2,469	9,774	6,699	14,441	8,156[a]
Brazil	55,927	197,149	221,939	297,687	378,257
Chile	261	0	0	0	0
Colombia	18,600	60,972	78,601	105,360	55,268
Costa Rica	718	168	110	245	569
Cuba	3,350	573	335	298	401
Dominica	16	0	0	0	0
Dominican Republic	6,060	3,596	4,654	3,801	2,370
Ecuador	5,276	12,745	14,633	51,606	78,599
El Salvador	4,133	93,187	86,202	65,377	66,874
French Guiana	73	769	1,143	1,051	1,021
Grenada	44	0	0	0	0
Guadaloupe	283	0	1	1	0
Guatemala	3,104	67,994	77,375	64,024	74,132
Guyana	836	2,065	1,700	2,102	3,017
Haiti	4,818	46,703	65,354	53,954	54,896
Honduras	3,867	49,377	57,482	37,536	27,332
Jamaica	1,705	1	1	4	5
Martinique	194	1	7	1	0
Mexico	41,639	42,104	49,993	75,029	81,640[b]
Nicaragua	3,165	17,434	15,601	12,907	15,702
Panama	2,037	340	334	341	125
Paraguay	2,701	73	66	49	554
Peru	6,361	14,812	20,483	28,563	32,621[c]
Saint Lucia	108	0	0	0	0
Suriname	281	2,479	2,805	1,943	3,849
Trinidad and Tobago	1,159	3	4	3	6
United States of America	67,338	1,010	622	605	791
Puerto Rico	3,399	11	2	2	2
Virgin Islands	96	0	0	0	0
Venezuela	11,580	3,377	4,269	8,388	12,058[b]
Total	255,510	629,081	714,850	830,448	902,799

. . . Data not available.
[a]Up to June.
[b]Provisional information.
[c]Up to October.

of imported equipment and supplies used in control programs.

2.147 The social and political conflicts being waged over extensive areas also negatively affected malaria control. These conflicts resulted in the displacement of local residents, who took refuge along the borders with other countries or in temporary shelters in the major cities. Very little use was made of epidemiological methods to determine the extent to which certain social variables were influencing the transmission of malaria and other vector-borne diseases.

2.148 The revised strategy for a systematic attack on these problems—that is, developing the control programs within the health services and with community participation—was applied only very weakly. Malaria transmission increased sharply in certain countries of the Andean subregion as a result of natural disasters. Information systems in the national programs are inadequate because the epidemiological information is transmitted within a very limited circle. The process of epidemiological stratification to allow the use of local resources and the adoption of measures commensurate with the magnitude of problems has yet to be implemented completely. Moreover, professional training centers have not adjusted their curricula so as to update the information the students receive on the epidemiological conditions of specific countries and on surveillance, prevention, and control methodology.

2.149 With the cooperation of PAHO/WHO, the governments are implementing a variety of initiatives to overcome these problems. The governments of Central America and Panama conducted joint studies of problems created by the tropical diseases prevailing in Central America and developed plans under the primary health care approach to strengthen the programs for the control of malaria, *Aedes aegypti*, and other vector-borne diseases. In the context of the Plan for Priority Health Needs in Central America and Panama, basic regional priorities and intrasectoral and intersectoral links and operational mechanisms were established; programs and administrative procedures were developed; staff was trained; research and information collection activities were pursued; national centers of technical excellence were identified; and the potential levels of participation of the countries of the Central American Isthmus in each component were determined.

2.150 A similar process was undertaken in the Andean subregion with the cooperation of the Secretariat of the Hipólito Unanue Agreement. Epidemiological and operational stratification continued to be promoted in the areas affected by these diseases with the aim of making the most effective and rational use of existing local resources. The strategy promoted was the primary health care approach, with the participation of the relevant intra- and intersectoral levels and with community involvement.

2.151 To strengthen community participation, antimalaria activities were included in the popular mobilization in Bolivia. Brazil succeeded in keeping its maintenance areas free of malaria. Transmission of the disease occurs in areas of the Amazon Basin where colonization, mining, and natural resource activities are under way. Malaria control has been included in the development projects for these areas. In Colombia, where the epidemiological situation has deteriorated substantially, initial steps were taken to strengthen control operations through agreements with the sectional health units and promotion of stronger involvement of the university sector. In Mexico, the malaria program was decentralized outward to the States, which receive support from normative units at the central level. Nine States accounted for 90% of the total number of cases reported country-wide, and two of them (Chiapas and Oaxaca) accounted for 54% of that total. The new structure provides for coordinated participation by the State government, Municipal authorities, health sector institutions, and extrasectoral entities concerned with the problem. During 1984, the Governments of Ecuador, Haiti,

and Peru prepared preliminary proposals for obtaining external resources, while the Governments of Argentina, Belize, Bolivia, and Brazil developed plans for activities under the concept of TCDC.

2.152 Training staff in the basic principles of malaria epidemiology and control was identified as a pressing need for implementing the strategy of incorporating malaria control into the regular health services. Training of the basic nucleus of monitors was begun in order to ensure a multiplier effect of extending the training to the entire staff of the general health services. Action was also taken to modernize the information system and adapt it for effective use within the new control strategy.

2.153 Research is critically important for the future of malaria control in the Hemisphere. In Brazil, a study on drug susceptibility and genetic differences in *Plasmodium falciparum* strains was carried out. Antimalaria drugs were evaluated for their effectiveness under different treatment schemes, and the activity of macrophagocytes in experimental malaria infections was studied. In Brazil and Mexico, monoclonal antibodies were used experimentally to detect plasmodia in mosquitoes; in Mexico, studies also were conducted on the transmission capacity of anophelines and by density gradients of centrifuging techniques for detecting infection in the vector. Serology, a useful tool in epidemiological analysis, was promoted in Honduras, Nicaragua, and Venezuela, where research projects were under way. Brazil, Colombia, Dominican Republic, and Nicaragua continued their studies on the influence of selected social variables in the malaria epidemiological profile, including migrations, forms of production, and housing.

2.154 Technical problems associated with vector resistance to insecticides were addressed through studies aimed at finding other methods of control, involving either the use of new chemical products or the application of biological and physical controls to reduce the number of breeding places. A solution to the problem of *P. falciparum* resistance was sought through the use of new drugs (mefloquine) or new treatment regimens based on the use of already known drugs, alone or in combination.

2.155 ***Aedes aegypti* eradication.** The *Aedes aegypti* eradication and control programs have met with setbacks, and the vector has accordingly reinfested areas from which it had previously been eradicated and has invaded others where it had never been encountered. The information on yellow fever is rather fragmentary, since the disease generally occurs in isolated jungle areas. Information is received only on serious and fatal cases confirmed through laboratory diagnosis. In 1984, PAHO/WHO received reports of 5 cases in Bolivia, 45 in Brazil, 13 in Colombia, 1 in Ecuador, and 23 in Peru, indicating a persistence of its endemicity in five countries of the Region. As for dengue, which had been relatively active in 1981 and 1982, most of the countries reported only minimal or sporadic cases of transmission in 1983. While no epidemic outbreaks of the disease were observed in 1984, the circulation of dengue virus was documented in a number of countries by the isolation of serotypes 1, 2, and 4.

2.156 **Chagas' disease**. Studies of the prevalence of Chagas' disease undertaken in 1983 were continued in Bolivia, Colombia, Ecuador, Honduras, Panama, Paraguay, and Uruguay. These studies are already facilitating programming by priorities determined by the risk of transmission and the amount of resources available. Thus, Chagas' disease control projects based on the primary care strategy and on intra- and intersectoral cooperation (agriculture, education, and rural development) were developed in Bolivia, Paraguay, and Uruguay. A study group consisting of the directors of Chagas' disease study and control programs in Argentina, Brazil, Ecuador, Honduras, Paraguay, and Venezuela was convened in November 1984 in Washington, D.C., for the purpose of strengthening the multisectoral strategy for solving the problem and formulating guidelines for epidemiological surveillance. Argentina, Brazil, Colom-

bia, Honduras, and Venezuela experimented with simplified immunological procedures with a view toward applying them more generally in the diagnosis of Chagas' disease. Venezuela, with community participation, continued its surveys on the effect of housing construction modifications on triatomidae infestation and on the vectoral capacity of different species of triatomidae. The longitudinal studies on cardiopathies due to Chagas' disease also were continued.

2.157 **Leishmaniasis**. The number of cases of leishmaniasis continued to increase as colonization and projects were undertaken for opening up new areas to agricultural and mining development. With the exception of Brazil, Colombia, Costa Rica, and Panama, most of the countries have not initiated organized control of leishmaniasis, either because of a lack of epidemiological studies measuring the magnitude of the problem or a lack of human and financial resources for identifying the appropriate treatment of leishmaniasis in the endemic zone. A subregional seminar on leishmaniasis epidemiology and control in Belize, Central America, Mexico, and Panama was held in Mexico in October 1984 to define a strategy for the monitoring and epidemiological surveillance of this disease. The experiences of Costa Rica and Panama, which have a structured program for the identification and treatment of cases of leishmaniasis within the general health services, served as a basis for recommendations that should enable the other countries to undertake the study and control of leishmaniasis in 1985-1986. Paraguay formulated a project to study and control the disease in a priority area in 1985. In Peru, the Alexander von Humboldt Institute of Tropical Medicine continued its work on characterization of specimens of *Leishmania*.

2.158 **Schistosomiasis**. In the Dominican Republic, the endemic zone was defined more precisely, which is expected to make it possible to extend the area of the present control measures in 1985. In Suriname, the research and control project initiated in 1983 in collaboration with the UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR) was evaluated. In addition, the training of personnel in computerized analysis of epidemiological data was completed.

2.159 **Onchocerciasis**. In Ecuador, the National Institute of Hygiene continued its study on the taxonomy and biology of onchocerciasis vectors. This study, conducted with the cooperation of TDR and the London Museum of Natural History, will be helpful in the future in defining the area of onchocerciasis transmission in the Province of Esmeralda and in orienting control activities. The onchocerciasis epidemiological studies being conducted by the tropical disease research and control program in the Amazon Region of Venezuela continued to receive technical support from the Organization and from TDR.

Intestinal Parasitic Diseases

2.160 Training in diagnosis, surveillance, and control of intestinal parasitoses was intensified in Cuba, Dominican Republic, and Guatemala. In the Dominican Republic, a joint study of PAHO/WHO with the Laboratory and Blood Bank Division of the Ministry of Public Health and Social Welfare (SESPAS) determined the content and orientation that parasitology training programs directed to bioanalysts should have in order to reflect the country's most prevalent diseases. In Guatemala, a training program for health service laboratory workers was formulated for 1985-1986. This program will make it possible to improve the diagnosis of intestinal parasitoses, malaria, leishmaniasis, Chagas' disease, and filariasis at the level of the general health services.

Acute Respiratory Infections

2.161 The control of acute respiratory infections (ARI) in the Americas was increased in 1984. The strategy adopted by the Region

is based on the implementation, with maximum coverage, of standard activities for treating infant cases of ARI within primary health care. These activities, together with the treatment of dehydration resulting from diarrheal diseases and vaccination against immunopreventable diseases, complete the triad for reducing morbidity and mortality rates in children under age 5 in developing countries. In the State of Pará, Brazil, the simplified control activities initiated in 1982 were incorporated into the social security services, and their coverage continues to extend gradually to other States. In the first 2 years, 160,000 children were treated under the program, 40,000 of whom required antimicrobial treatment. Only 1% had to be hospitalized. A similar program was begun in the State of Rio Grande do Sul. At the national level, a handbook of standards for the treatment of ARI in children, prepared with the cooperation of societies of health professionals and the ministries of health and social welfare, was approved. Panama continued its efforts to implement the ARI program, which was receiving financial support from WHO/Arab Gulf Fund (AGFUND). The project, initiated in April 1984, advanced to 50% of completion, and the Government was planning to extend its activities to the rest of the country as part of the projects under the Plan for Priority Health Needs in Central America and Panama, together with activities for the control of diarrheal diseases. Guatemala prepared the operational program and materials for ARI training and community education. Incorporation of the activities into the health services was scheduled to begin in January 1985.

2.162 In the area of research, etiological studies on ARI in children continued in Argentina, Brazil, Costa Rica, Panama, Peru, and Uruguay. A subregional training workshop for laboratory staff engaged in bacteriological and virological research was conducted in Argentina, with participants from that country as well as from Brazil, Chile, and Uruguay. With the aim of promoting initiatives in the Member Countries, PAHO/WHO and UNICEF sponsored a second regional seminar on ARI and infant survival. The event, held in October in Brazil, was attended by 130 professionals from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, the United States of America, Uruguay, and Venezuela. The seminar examined the status of programs, the training of personnel, and research priorities. As a result, the Governments of Bolivia, Colombia, El Salvador, and Venezuela took steps to formulate or intensify their programs.

Tuberculosis

2.163 Tuberculosis mortality rates continued to decline gradually in most countries of the Region. The number of cases reported has increased in several countries, mainly because of better registration and the achievement of wider coverage in the program through the integration of tuberculosis control into the general health services. In other countries, the number of cases reported has declined because of a drop in incidence. In the latest year for which information was available, more than 240,000 new cases were reported. However, the last 2 years have seen advances under the programs in Brazil, Chile, and Colombia, along with a decline in the risk of infection in Chile, Cuba, and Venezuela.

2.164 As a result of shortages and irregularity in the free distribution of drugs, many programs have deteriorated and a high percentage of patients are abandoning treatment before they are authorized to do so. Some programs (e.g., the Peruvian program) have not secured the expected benefits after achieving noteworthy advances in the organization and supervision of activities. Generally speaking, official support for the programs decreased despite recommendations by the World Health Assembly (WHA33.26 of 1980 and WHA36.30 of 1983). At the same time, both the interest of nongovernmental and professional groups and international support are on the rise. In the Americas, PAHO/WHO

continued to extend support to the programs in Nicaragua and Peru in collaboration with the International Union Against Tuberculosis and in Colombia with funding provided by WHO/AGFUND. In Colombia, there was an increase in the number of new cases reported; this may be attributable to wider coverage and intensive control efforts.

2.165 The number of cases reported in Brazil in 1983 was the same as in 1982 despite a 10% increase in the number of case-finding facilities—an indication that diagnostic technology has reached its highest level of productivity. In Rio Grande do Sul, Brazil, the study on the prevalence of tuberculosis infection among unvaccinated first-year students was concluded, bringing to completion the first phase of the study on the risk of infection. A second study, to be carried out in 1988, will make it possible to measure any change in the risk of infection and thereby assess the real extent and trend of the problem and its correlation with the incidence of discovered cases. The inclusion of the State's preschool group in the system of regular vaccination with BCG, begun in 1984 with infants under age 1, will make it possible to estimate the extent to which tuberculosis morbidity and mortality rates are reduced as a result of vaccination, especially with reference to tuberculosis meningitis.

2.166 Chile prepared a brief and practical revised handbook of standards and adopted a low-cost scheme of short, highly effective supervised treatment for the entire country. Training courses for administrative staff of tuberculosis programs were offered in Argentina, Brazil, Chile, Cuba, Mexico, and Venezuela. In the production of BCG, Brazil adjusted its system to cover the requirements for shipment to other countries of the Region. The Pan American Zoonoses Center (CEPANZO) cooperated actively in BCG quality control and the distribution of tuberculin (PPD), and the training of personnel. Courses in bacteriology of tuberculosis were held in Jamaica and Mexico with the participation of CEPANZO.

Leprosy

2.167 The resistance of *Mycobacterium leprae* to dapsone is posing an increasingly serious problem to countries where this drug, used alone, has been the basis of chemotherapy for more than three decades. Multidrug therapy is one way of averting bacterial resistance; unfortunately, the countries have only limited resources with which to purchase the essential drugs employed in the new therapeutic regimens (rifampicine, clofazimine, protionomide-ethionamide). The new treatment schemes also require extensive utilization of the general health services and primary health care in extending the coverage and ensuring that the drugs are actually used. This requires a mobilization of technical and financial resources for the training and supervision of large numbers of personnel.

2.168 PAHO/WHO's collaboration with the governments in their efforts to solve these problems consisted primarily of seeking out sources of funding for multidrug therapy. The following initiative was considered with this in mind: mobilization of extrabudgetary resources under bilateral or multilateral arrangements with volunteer agencies of the International Federation of Associations Against Leprosy (ILEP) to finance drug purchases and other activities involved in the institution of multidrug therapy schemes. Colombia and Ecuador entered into agreements with the German Leprosy Relief Association. Other countries are negotiating with the same and other institutions and with PAHO/WHO on possible program financing.

2.169 The Japanese Shipbuilding Industry Foundation (JSIF) financed technical cooperation components (evaluation, reorganization, and staff training) of the leprosy control programs in the Region. In addition, its financial assistance made it possible to secure specific drugs for therapeutic experiments in Brazil and Mexico and to initiate multidrug therapy in Ecuador. In the Caribbean area, a 2-year extension was approved in the agreement between the Leprosy Relief

Work of Emmaüs, Switzerland, and the Governments of Anguilla, Antigua, Bahamas, Barbados, Dominica, Grenada, Montserrat, St. Christopher and Nevis, St. Vincent and the Grenadines, and the Turks and Caicos Islands on financing the programs in each of those countries. In the Dominican Republic, the Damien Foundation of Belgium continued to finance the leprosy control program. Brazil and Venezuela opened their yearly courses on public health dermatology to students from other countries of the Region, and in the Caribbean area workshops were conducted for staff of the general health services.

Diseases Subject to International Health Regulations

2.170 Three diseases are subject to international health regulations: cholera, plague, and yellow fever. No cases of *cholera* were reported in the Region of the Americas in 1984. Plague reports for the past 5 years are summarized in table 11. Two major plague foci were identified in 1984 in Bolivia and Peru and, in collaboration with national authorities,

Table 11. Reported cases of plague and yellow fever in the Americas, 1980-1984

	1980	1981	1982	1983	1984[a]
Plague	142	128	182	215	501
Yellow fever	119	231	137	50	90

[a] Provisional data up to 24 May 1985.

PAHO/WHO provided training for improving field investigation, laboratory diagnosis, and flea and rodent control. National guidelines for *plague* were reviewed and recommendations for revisions were made. With the exception of an outbreak of jungle yellow fever in the Amazon Region of Brazil, only sporadic reports of the disease were received during 1984. Reported cases during the past 5 years are also summarized in table 11. Reintroduction of yellow fever into urban areas remains a potential threat due to widespread reinfestation by *Aedes aegypti*. Consequently, PAHO/WHO organized a major workshop in Brazil to review the pathophysiology of *yellow fever* infection and advances in modern therapy for this disease. PAHO/WHO has renewed its efforts to secure funding to develop a tissue culture-based 17D yellow fever vac-

Table 12. Cases of acquired immune deficiency syndrome (AIDS) in the Americas by country, 1980-1984

Country	1980	1981	1982	1983	1984[a]	Total
Argentina	–	–	–	6	5	11
Brazil	–	–	5	43	134	182
Canada	2	5	18	48	92	165
Chile	–	–	–	–	3	3
Colombia	–	–	–	–	4	4
Grenada	–	–	–	–	2	2
Guadaloupe	–	–	2	1	5	8
Haiti	–	–	–	232	108	340
Mexico	–	–	–	8	4	12
Saint Lucia	–	–	–	–	1	1
Suriname	–	–	–	–	2	2
Trinidad and Tobago	–	–	–	9	7	16
United States of America	46	255	980	2,644	4,462	8,387
Uruguay	–	–	–	2	1	3
Venezuela	–	–	–	–	9	9
Total	48	260	1,005	2,993	4,839	9,145

– None.
[a] Provisional data up to 24 May 1985.

cine. Meanwhile in 1984, through mediation efforts by PAHO/WHO, the vaccine production laboratories in both Brazil and Colombia modernized their production facilities with grants from Canada's International Development Research Center.

2.171 PAHO/WHO requested its Member Countries to notify the occurrence of acquired immune deficiency syndrome (AIDS). Table 12 summarizes the available data.

Viral Diseases

2.172 Since viral disease epidemiology depends more on laboratory than on clinical diagnoses, major efforts were made to strengthen laboratory diagnostic capabilities. Viral hepatitis continues to be a major threat to public health despite the technologies available for its control. As part of a WHO Global Hepatitis Control Program, PAHO/WHO convened a small working group to collect and analyze information on the extent of hepatitis A, B and non-A-non-B in the Americas. With PAHO/WHO cooperation, Brazil strengthened local production of hepatitis laboratory reagents.

2.173 Although there were no major outbreaks of dengue, sporadic isolations of types 1, 2, and 4 were reported. In addition, possible cases of dengue hemorrhagic fever (DHF) syndrome were investigated in Mexico. To assist countries at risk for DHF in preparing for large-scale epidemics, PAHO/WHO conducted a national training seminar on the recognition and case management of DHF in Colombia. Efforts to strengthen diagnostic capabilities of local and reference laboratories continued.

2.174 With PAHO/WHO and U.S. Army cooperation, Brazil identified a virus belonging to the Hantaan virus complex (causative agent of hemorrhagic fever with renal syndrome). The virus was from an urban rat and was the first isolation of this agent in South America. Argentina and Brazil began setting up surveillance for the human disease. In Colombia, a special workshop on arthropod-borne viral encephalitis was held, and steps were taken to provide national laboratories with diagnostic reagents. A workshop on the vectors of arbovirus encephalitis also was organized to update national entomologists.

2.175 No major outbreaks of influenza occurred. However, the PAHO/WHO National Influenza Center in Chile isolated a new H1N1 influenza variant. This strain has been incorporated into WHO's recommended influenza vaccine. A set of monoclonal antibodies was evaluated as typing reagents for *Herpes simplex* isolates from Argentina, Brazil, Chile, and Trinidad and Tobago. The methods used and results obtained were in agreement with those of the reference center (Laboratory Center for Disease Control, Canada); therefore, monoclonal antibodies will be made available to selected laboratories.

Sexually Transmitted Diseases

2.176 The control of sexually transmitted diseases (STD) remains a relatively low priority for most Member Countries. The lack of information on the epidemiology of the major STD and their sequelae contributes to the lack of awareness of the public health importance of these diseases and fosters traditional disease control measures. To improve available STD information, PAHO/WHO and the Centers for Disease Control (USA) entered into a cooperative agreement to develop pilot projects in one to six collaborating countries in 1985. The project calls for improved surveillance for STD using a variety of epidemiological approaches. STD control program activities were evaluated and recommendations were made in Nicaragua, Panama and Suriname. PAHO/WHO maintained an updated inventory of training courses in STD clinical case management and laboratory diagnosis. In the Caribbean area, CAREC implemented a series of training seminars, financed by a grant from USAID, designed to upgrade and standardize clinical diagnosis and therapy of

STD, the first step in the development of STD control efforts.

Prevention and Control of Noncommunicable Diseases

2.177 The countries of the Region increasingly are recognizing noncommunicable diseases as a priority health problem. The increase in life expectancy has been very significant in countries which have achieved adequate coverages in maternal and child care and, consequently, a considerable reduction in infant mortality rates. This situation, together with the transformation in lifestyles and other psychosocial factors, has stepped up the pace of important changes in the patterns of morbidity and mortality, especially with respect to the incidence of chronic degenerative diseases. Cardiovascular disease and malignant tumors figure among the five leading causes of death in all of the Latin American and Caribbean countries.

2.178 Based on past experience in the control of noncommunicable diseases such as arterial hypertension, diabetes, rheumatic fever, and cervical cancer, the countries—with assistance from PAHO/WHO—are adopting an integrated approach to the promotion of health and to the control of risk factors and diseases within the general health services, giving emphasis to primary health care. This approach has been followed in the Project for the Regional Monitoring of Integrated Chronic Disease Programs (MORE). Brazil, Cuba, and Venezuela have undertaken integrated chronic disease programs on a limited scale for the purpose of acquiring experience that will make it possible to extend them in the future.

2.179 With the participation of Argentina, Chile, and Uruguay, a meeting on chronic diseases was held in Uruguay in April 1984 to define subregional strategies involving the use of the three countries' resources to deal with common problems related to chronic disease. The reports of this meeting and of the Regional Meeting on Control of Cervical Cancer held in Mexico in January 1984 were reviewed by PAHO's Executive Committee in June 1984 which decided that the Adult Health Program be a topic of discussion by PAHO's Directing Council in 1985.

2.180 Health promotion activities included a meeting of a group of experts on smoking and health convened in Washington, D.C., to discuss future action by governments, particularly strategies for the promotion of policies—a subject to be discussed more broadly at a subregional meeting for the Southern Cone in 1985. In addition, with PAHO/WHO assistance, national meetings were held in Brazil and Panama on the control and status of arterial hypertension, in Mexico on diabetes, and in Colombia on gynecological cancer. A cancer information seminar was held in Brazil; a national course on cancer registration in the Bahamas; and an international course on cancer epidemiology in Costa Rica. Initial action was taken to promote the three support elements of the MORE project (strategic planning, integrated programs, and health services) and to prepare the basic protocols to be proposed to the countries in 1985.

2.181 **Cardiovascular diseases** have priority within the group of noncommunicable chronic diseases. Table 13 shows the mortality rates for these diseases and the share of the total number of deaths they account for in selected countries.

2.182 Some Latin American and Caribbean countries have rates comparable to those of the United States of America and Canada. Also, cerebrovascular diseases are highly prevalent in a number of countries, including Trinidad and Tobago and Uruguay, where arterial hypertension is a priority health problem. For use in the ongoing promotion of hypertension control, PAHO/WHO made available to all the countries a manual entitled *Hypertension as a Community Health Problem*. Priority has been given to the detection and control of hypertension not only as a cardiovascular problem but also as a hazard to

Table 13. Mortality rates for heart and cerebrovascular diseases with per cent of all deaths[a]

Country or territory	Year	Heart diseases[b] Mortality rate (per 100,000 population)	Heart diseases[b] Per cent of all deaths	Cerebrovascular diseases[c] Mortality rate (per 100,000 population)	Cerebrovascular diseases[c] Per cent of all deaths
Antigua and Barbuda	1978	86.5	15.9	97.3	17.9
Argentina	1979	251.5	29.2	79.9	9.3
Bahamas	1981	108.1	18.8	60.0	10.4
Barbados	1982	156.2	24.4	96.7	15.1
Belize	1982	87.1	21.2	29.2	7.1
Bermuda	1978	194.8	31.2	79.3	12.7
Brazil	1980	97.7	15.5	52.4	8.3
Canada	1982	243.5	34.4	59.0	8.3
Chile	1982	94.0	15.5	58.2	9.6
Colombia	1977	94.8	16.3	34.4	5.9
Costa Rica	1980	73.4	17.8	26.0	6.3
Cuba	1978	169.2	29.8	53.6	9.5
Dominica	1978	121.8	23.7	39.4	7.7
Dominican Republic	1978	41.7	9.2	18.3	4.1
Ecuador	1978	61.8	8.6	23.6	3.2
El Salvador	1981	32.0	4.3	17.0	2.3
French Guiana	1978	60.0	7.7	96.7	12.4
Grenada	1978	163.6	23.5	63.6	9.2
Guadeloupe	1978	129.1	20.3	50.3	7.9
Guatemala	1980	33.2	3.4	10.6	1.1
Guyana	1977	125.2	17.2	83.5	11.5
Honduras	1979	43.3	8.3	3.1	0.6
Jamaica	1971	131.6	17.3	115.8	15.2
Martinique	1975	108.1	15.8	49.1	7.2
Mexico	1976	77.5	10.6	21.3	2.9
Montserrat	1979	172.7	17.3	181.8	18.2
Nicaragua	1977	60.7	11.2	19.1	3.5
Panama	1980	69.4	16.0	29.9	6.9
Paraguay	1980	108.6	14.6	60.7	8.2
Peru	1978	31.7	6.5	13.1	2.7
Puerto Rico	1982	169.9	31.3	32.8	6.1
St. Christopher and Nevis	1980	167.3	16.6	175.5	17.4
Saint Lucia	1980	125.0	17.4	90.0	12.5
St. Vincent and the Grenadines	1979	148.1	24.2	11.5	1.9
Suriname	1980	90.9	12.6	45.6	6.3
Trinidad and Tobago	1977	162.3	24.8	82.0	12.5
United States of America	1980	338.4	38.6	74.9	8.6
Uruguay	1978	237.5	24.3	119.8	12.2
Venezuela	1978	82.5	14.9	32.2	5.8

[a] Based on official reports received in PASB.
[b] *International Classification of Diseases* (ICD) 390-429 (8th and 9th Revisions).
[c] *International Classification of Diseases* (ICD) 430-438 (8th and 9th Revisions).

the health of adults and the elderly. Bolivia, El Salvador, and Jamaica are planning to develop intensive prevention programs on the cardiopathology of rheumatic fever, the results of which subsequently may be useful to other countries, under a project to be financed with resources from AGFUND. Rheumatic fever, still important in some countries, is being monitored under Country/PAHO/WHO programs based on the use of the rheumatic fever manual of the Organization.

2.183 Diabetes mellitus has been recognized as a priority problem in Argentina, Chile, Colombia, Costa Rica, Cuba, Mexico, Panama, Uruguay, Venezuela, and the English-speaking Caribbean countries, where life expectancy is longer and diabetes prevalence rates are high.

2.184 **Cancer**. Health authorities are paying increasing attention to cancer as an important public health problem through such activities as: establishment or improvement of cancer registries; cancer screening programs, particularly in cervical and gastric cancer; enhancement of equipment and laboratory facilities for adequate diagnosis; reinforcement of the four major components of treatment (surgery, radiotherapy, chemotherapy, and hormonotherapy); dissemination of technical information; public health education; and the training of personnel involved in the programs.

2.185 With respect to studies and research, as a result of a meeting on cancer epidemiology which PAHO/WHO organized in 1982, Bolivia and Mexico with PAHO/WHO support became involved in a study of gall bladder cancer, the third most common cancer in women in Bolivia. With support from the U.S. National Cancer Institute (NCI), this project for a biochemical epidemiological study of biliary tract cancer began in March 1984; the study is being carried out by the Autonomous University of Mexico and the Methodist Hospital in La Paz, Bolivia. In October 1984, a workshop was organized with the purpose of exploring a study on the etiology of gastric cancer. Chile, Costa Rica, and Venezuela—countries with very high incidence rates for gastric cancer—participated in the meeting, along with staff from the NCI and PAHO/WHO. Three specific studies were identified: a case control study focusing on dietary factors associated with gastric cancer; a food composition analysis; and an ecology study of food, water, and vegetable analysis.

2.186 The Collaborative Cancer Treatment Research Program (CCTRP), begun in 1977 with the purpose of designing and carrying out clinical therapeutic protocols, placed its major emphasis during 1984 on increasing the quality of the data reported by the participating institutions. An institutional review board has been established in all of the institutions to review and approve all the protocols for human subject concerns. A total of 13 papers were submitted to the American Association of Cancer Research and the American Society of Clinical Oncology, and articles on 12 protocols were published during 1984. The annual meeting was held in May in Santiago, Chile, and six disease-oriented committees (gastric, cervix, head and neck, pediatrics, hematology, and breast) were organized with the purpose of developing multinational protocols in these diseases.

2.187 Regarding technology, a survey of the dosimetry in the radiotherapy units of members of the CCTRP continued in 1984. A report of a site visit conducted to the radiotherapy departments of four institutions in Costa Rica, Mexico, Peru, and Venezuela has been completed and circulated; the report emphasizes that a trained physicist should regularly supervise the cobalt source. Emphasis has been placed on the need for a list of antineoplastic drugs which are effective against curable cancers (e.g., acute lymphoblastic leukemia, Hodgkins germ cell tumor of the testis, Wilms tumor, etc.), as well as for training medical personnel working in cancer on effective administration. Consequently, PAHO/WHO is preparing a plan for the acquisition and rational use of antineoplastic drugs by the countries and has worked with

WHO in developing a document on essential drugs for cancer chemotherapy.

2.188 With reference to program development, it should be mentioned that PAHO/WHO has reformulated its cooperation policy regarding uterine cervix cancer by strengthening national programs for early detection, diagnosis, and treatment. This type of cancer is the primary cause of death in the adult female population of the Region. A manual of norms and procedures for cervical cancer control was completed and distributed to the countries early in 1984. In a meeting held in Mexico City in January 1984, participants from 18 countries discussed all aspects of a cervical cancer control program and new strategies to coordinate the different components of a central program, with a focus on increasing early diagnosis and reducing mortality. Barbados, Brazil, and Colombia revised activities or programs for cervical cancer control. PAHO/WHO prepared guiding principles for the formulation of national cancer programs in developing countries. These guidelines describe the basic components of a cancer control program: assessing the cancer "burden" of a country; evaluating the current status of cancer control in a country; identifying potential new activities; setting priorities; and evaluating and monitoring control programs and cancer trends.

2.189 The lack of sufficiently trained personnel continues to be a main impediment for an effective cancer control program. For this reason, the Organization collaborated with the Government of the Bahamas in a course on hospital-based cancer registries conducted at the Princess Margaret Hospital in Nassau in April. Costa Rica organized a course on the application of epidemiology to cancer, which was held in May with 23 participants from countries of the Region and 17 from Costa Rica. The purpose of the course was to strengthen the abilities of those already working in cancer, as well as the countries' capabilities to carry out cancer epidemiology studies. Also in May, a workshop for clinicians and oncologists on statistics for cancer epidemiology and control was organized. This was a collaborative effort involving the NCI, the Schools of Public Health of Harvard University (USA) and of Chile, and PAHO/WHO. The Organization cooperated with the International Union Against Cancer (UICC) in advanced courses in clinical oncology in Panama and Buenos Aires. Furthermore, oncology training fellowships in the CCTRP supported 10 fellows from Argentina, Brazil, Chile, Costa Rica, Peru, Uruguay, and Venezuela during 1984.

2.190 **Blindness prevention**. PAHO/WHO's cooperation with the governments focused on the formulation and updating of standards to reflect the concept that eye care in general, and the prevention of blindness in particular, should be integrated into general health services and extended to the entire population, including marginal groups.

2.191 The Government of Bolivia initiated a blindness prevention program as an outcome of advisory services PAHO/WHO rendered in 1983. In Costa Rica, the Department of Public Health Ophthalmology continued to train and evaluate personnel. A roundtable on blindness was conducted at the National Medical Congress with the cooperation of the Costa Rican Ophthalmology Association, and in June 1984 the first national Eye Disease Education Week was organized. In addition, a national foundation against pigmentary retinosis, the leading cause of blindness in Costa Rica, was established. In Brazil, the São Paulo Public Health Ophthalmology Service, a WHO Collaborating Center for the prevention of blindness, completed a survey on intraocular pressure (IOP). Of a total of 10,319 people examined, 416 were found to have an IOP of more than 24, and 122 of this group (26.5%) were diagnosed as having glaucoma. The survey was completed with the examination of 293 people with IOP in the range of 20 to 23, 30 of whom (10.2%) were diagnosed as having glaucoma. The Health Department of São Paulo State approved an eye health program providing for the training of staff at four levels of complexity, the instal-

lation of 77 ambulatory referral centers, and the recruitment of 118 ophthalmologists to extend the coverage. The state of Paraíba was organizing a similar program. The Ministry of Public Health and Social Welfare of Guatemala, through the National Committee for the Blind and the Deaf and Dumb, designed a survey to determine the prevalence of diseases leading to blindness and conducted a course on primary eye care for auxiliary staff. PAHO/WHO's *Primary Eye Care Manual* (PALTEX Series, No. 4) was tested successfully in that course. Peru's Luciano Barrere Center (a WHO Collaborating Center for the Prevention of Blindness) intensified its efforts to broaden the coverage of eye care at all three levels of service. The manual on *Fundamentals of Ophthalmology for General Practitioners*, prepared by PAHO/WHO, was tested at that center with satisfactory results. With the support of the Helen Keller International Project, the eye care program in Peru was continued in four areas, including a marginal district of Lima. The WHO Collaborating Center and the Helen Keller International Project were both evaluated during the year to lay the groundwork for future programming.

2.192 Activities in a number of English-speaking Caribbean countries during the year were related to the recommendations of the PAHO/WHO-sponsored seminar held in Barbados late in 1983. In Barbados, the main activity centered around a program to improve the ophthalmological skills of a group of general practitioners in the fields of medical and surgical technology, utilizing the Queen Elizabeth Hospital in Bridgetown as a tertiary center. These courses are being conducted with the cooperation of the National Eye Institute in Bethesda, Maryland (USA—a WHO Collaborating Center for the prevention of blindness), the Helen Keller International Organization, the Royal Commonwealth Society for the Blind, the International Eye Foundation, and PAHO/WHO.

2.193 Venezuela organized an International Workshop on Prevention of Blindness sponsored by PAHO/WHO and gave necessary support to the III Meeting of the PAHO Advisory Committee on Prevention of Blindness.

Veterinary Public Health

2.194 In 1984, coordinated utilization of PAHO/WHO's resources in this field, including the Pan American Foot-and-Mouth Disease and Zoonoses Centers, made possible an effective response to the governments' requirements in the areas of zoonoses, food protection, foot-and-mouth disease, and training of personnel. Some highlights of PAHO/WHO's cooperation with governments during the year are described below.

2.195 **Zoonoses**. Efforts were made to encourage implementation of the recommendations of the III Inter-American Meeting on Animal Health at the Ministerial Level, RIMSA III, held in April 1983 in Washington, D.C., and the recommendations of the meeting of heads of national rabies control programs, held in Ecuador in December 1983, for which a document entitled *Strategy and Plan of Action for Eliminating Urban Rabies in Latin America by the End of the 1980's* was published and distributed. This document provides guidelines for the governments and the Organization in pooling efforts to eliminate urban rabies from the Hemisphere. With the active involvement of the governments, a detailed program was formulated with each country for PAHO/WHO cooperation in politico-administrative, planning, and programming activities; laboratory services; development of human resources; information and surveillance; community participation; intersectoral collaboration and coordination; and intercountry cooperation. The status of rabies in the Americas during 1984 may be summarized as follows. The rabies-free countries remained free of the disease. Argentina was at the phase of final consolidation of its program, as were the southern States of Brazil. Chile, Costa Rica, Cuba, and Panama were at the eradication stage of the disease. Colombia, Mexico, and Venezuela made significant ad-

vances in their respective programs. The remaining countries, while making some progress, did not achieve the anticipated levels.

2.196 A significant event was the inauguration of the new facilities of the Pan American Zoonoses Center (CEPANZO) in November 1984. The Center's new headquarters building is endowed with the latest technological advances and offers better facilities for the regional program of technical cooperation in veterinary public health, especially research and reference activities related to the principal zoonoses and food microbiology and the detection of residues in meat and other food of animal origin. Also, the regional reference laboratory for leptospirosis was reestablished at CEPANZO, which should make it possible to respond to growing demands in this field.

2.197 **Food protection**. Pursuant to resolution CD28.R39 of the XXVIII Meeting of PAHO's Directing Council, pertaining to food protection, PAHO/WHO focused its activities on the promotion of national policies in this area and the formulation and development of programs. Outstanding events were: the revision and reformulation of laws and regulations in Brazil, Colombia, Costa Rica, Ecuador, and Panama; the workshop on food standardization and health, conducted in Cuba in March 1984 during the II Meeting of the *Codex Alimentarius* Coordinating Committee for Latin America and the Caribbean, examining the major aspects of the work entrusted to this committee; the technical advances in the fields of chemical and biological food contaminants, administrative organization of services, and food quality assurance; the holding of a course in Medellín, Colombia, attended by 21 professionals and technicians, on methodology for instruction on food protection; the preparation of specific programs in Brazil (sanitary inspection of milk and its byproducts), Argentina (national food protection program), Colombia (epidemiological surveillance of food-related diseases), Costa Rica (national food protection program), and Panama (sanitary inspection of milk and its byproducts); and the strengthening of control laboratories in Brazil, Colombia, Mexico, and Panama to improve their efficiency and effectiveness, standardize procedures, train personnel, and establish reference laboratories.

2.198 A Commission on Veterinary Inspection of Meat from the River Plate Basin (CINVECC) was created pursuant to resolutions of the XI and XII Meetings of Foreign Ministers of the River Plate Basin countries. The aims of this Commission, for which CEPANZO serves as secretariat, are to strengthen and improve the veterinary inspection of meat, promote trade in meat products and byproducts, and provide assurances of a supply of wholesome food. The Commission's budget is funded by the River Plate Basin countries.

2.199 **Foot-and-mouth disease**. With the cooperation of PAHO/WHO, Argentina, Bolivia, Brazil, Colombia, Ecuador, and Venezuela formulated national foot-and-mouth disease control and eradication plans for submittal to international financial agencies. Handbooks for use in simulated outbreaks of foot-and-mouth disease and other exotic diseases were prepared under a joint project of FAO and PAHO/WHO. With the aim of avoiding duplication of efforts and assuring optimal use of available resources, two meetings were held to coordinate technical cooperation in the field of animal health with the following international organizations: Inter-American Institute for Cooperation on Agriculture (IICA), International Office of Epizootics (IOE), Board of the Cartagena Agreement (JUNAC), and International Regional Organization for Health in Agriculture and Livestock (OIRSA).

2.200 **Nonhuman primates**. The Organization continued to collaborate with the Governments of Brazil, Colombia, and Peru in the establishment of stations for the reproduction of nonhuman primates for use in biomedical research, and in the promotion and development of programs to determine the distribution, density, population dynamics, biology, and state of preservation of wild populations of these primates. At the Pri-

mate Reproduction and Preservation Station in Iquitos, Peru, research was done on the reproduction of these animals in semicaptivity. Similar research was done on two Amazon River islands with the community's cooperation. During 1984, more than 700 nonhuman primates were dispatched from the station to various research institutions in the People's Republic of China, France, Japan, the Soviet Union, the United States of America, and West Germany. This project has enjoyed financial support from the National Institutes of Health (NIH, USA). In 1984, PAHO/WHO entered into a new agreement with NIH and USAID to continue the program during the period 1985-1987 at a budgeted cost of US$1.2 million.

2.201 **Training of human resources.** The Regional Program for Training in Animal Health in Latin America (PROASA), undertaken in 1982 with financial support from IDB for the purpose of providing institutionalized training in basic aspects of foot-and-mouth disease, offered three courses on epidemiological surveillance in Argentina, Brazil, and Ecuador; three courses on social communication in Brazil, Chile, and Colombia; a regional seminar on evaluation of programs for the systematic administration of oil-adjuvant foot-and-mouth disease vaccines in Brazil; and a course on administration of animal health programs in Uruguay. A total of 208 professionals from Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Mexico, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela participated in the seven courses and the seminar, raising to 592 the total number of technicians trained under the program since its inception.

2.202 One of this project's most significant activities was the preparation of autotutorial material for use in these courses and to facilitate learning. This material has been helpful in increasing the multiplier effect of the project. The IDB has expressed satisfaction with the way in which the scheduled activities have been carried out. In view of the benefits obtained, the governments are planning to organize national courses using the content and teaching material prepared in the project.

2.203 The number of graduates of the Regional Program for the Training of Animal Health and Veterinary Public Health Assistants (REPAHA) increased in 1984 to 239, including its eighth graduating class, who completed their studies during the year. Students in the program have come from 17 English-speaking countries and territories. REPAHA was initiated with funds from UNDP and the Government of Guyana, with PAHO/WHO acting as executing agency. An evaluation of the impact and future of this project in 1984 identified future needs for training and continuing education in the relevant fields, as well as REPAHA's relationship with the School of Veterinary Medicine of Trinidad and Tobago. In view of the termination of UNDP funding in 1984, the Member Countries established a fund of their own for continuing the program and converted REPAHA into an autonomous institution within CARICOM. It is worthy of note that more than 82% of REPAHA's graduates currently are working in their home countries in fields related to their training.

2.204 **Environmental quality.** Efforts are being made to analyze problems arising from the use of pesticides and disseminate technical information in this regard in Latin America. Spanish translations of two publications designed to further these objectives—WHO's scientific data sheets on pesticides and the University of Miami's (USA) report on an agronomic approach to pesticide management—were completed during the year and were scheduled to be distributed in the first half of 1985 under the titles of *Pesticide Data Sheets* and *Agromedical Approach to Pesticide Management*, respectively. This project, initiated in 1983, received financial support from USAID.

2.205 **Primary health care.** A joint PAHO/WHO Expert Group meeting held in April 1983, in Washington, D.C., examined the role of veterinary medicine in primary health care. Based on this analysis, the I An-

dean Meeting of Veterinary Public Health Experts was held in Santa Cruz, Bolivia, in September 1984 with the cooperation of the Hipólito Unanue Agreement. The meeting prepared a proposed Andean subregional veterinary public health program to be submitted to the governing bodies of the Hipólito Unanue Agreement, which will consider its inclusion as part of the joint action plan being implemented in cooperation with PAHO/WHO.

Pan American Zoonoses Center (CEPANZO)

2.206 In 1984, CEPANZO inaugurated its new headquarters building and the state-of-the-art facilities made available through the efforts of the Government of Argentina and the other countries of the Americas. While every precaution was taken to avoid a slowdown of the Center's activities as a result of the move, the pace of the work inevitably declined.

2.207 **Research**. The Center conducted research projects of immediate benefit to the Member Countries. It completed a series of immunobiological, serological, and protective studies to determine the immunobiological value of the strains of rabies virus used in the production of unweaned-mouse-brain vaccine for the treatment of human cases. The study indicated that it was not advisable to eliminate any of the strains at the present time. Studies to detect the presence of rabies in various species of Argentine wild animals also continued.

2.208 A project to assess the degree of protection provided by BCG vaccine administered shortly after birth was initiated in cooperation with the public health authorities of Argentina. A cooperative study being conducted with the National Institute of Microbiology of Argentina seeks to determine the public health importance of the mycobacterioses and of bovine tuberculosis in humans. The health services of Argentina, Brazil, and Mexico received advisory services from CEPANZO in field tests of the administration of BCG to infants and schoolchildren. Studies were made to determine the stability of veterinary rabies vaccines under different environmental conditions; to evaluate the arc-5 electrosyneresis test in cellulose acetate for the diagnosis of human hydatidosis, which makes it possible to obtain presurgical confirmation in only a few hours; and to test systems for the improvement of brucellosis vaccine in veterinary use. Studies also were undertaken on the application of the contraimmunoelectrophoresis and ELISA techniques with a soluble antigen to standardize the serodiagnosis of leptospirosis in humans. In Argentina, further progress was made in the study of wild animals suspected of being carriers of microorganisms which are causative agents of human diseases, especially tuberculosis, brucellosis, and leptospirosis, as well as of gastroenteric infections.

2.209 CEPANZO, in collaboration with the Centers for Disease Control (CDC) of the United States of America, designed a study on the application of the "control of critical points" approach in the household preparation of infant formulas in rural and semirural areas, the first stage of which was scheduled to begin in Peru in January 1985. Studies continued to be carried out on the influence of psychotropic flora on the quality of dairy products. In Peru, a joint CEPANZO/CEPIS research project was designed to examine problems stemming from the use of wastewater for irrigation and its effects on the microbiological quality of food.

2.210 **Development of technology**. In cooperation with laboratories in Argentina, Canada, Chile, Costa Rica, and Ecuador, CEPANZO undertook a study to test a simpler, quicker, and more effective procedure for detecting resistance to pyrazinamide. In addition, working with laboratories in Argentina and Venezuela, the Center evaluated the contraimmunoelectrophoresis procedure to determine the presence of antibodies that neutralize rabies virus in the blood of people who have been immunized. The findings showed that this procedure can be routinely used in rabies diagnosis laboratories.

2.211 The advantages and shortcomings of immunological methods for the diagnosis of hydatidosis were determined, and standards were established for using them in the identification and characterization of this disease. In collaboration with the Veterinary Diagnosis and Research Center in Formosa, Argentina, the Center studied the immunodiagnosis of hydatidosis in naturally infected sheep and cattle.

2.212 **Dissemination of information.** The Center completed a review of its information system to strengthen and broaden the coverage of the countries' data on zoonoses. The system of information on Colombia's food protection programs was reviewed and adjusted, and an assessment of this situation in Argentina was completed. CEPANZO continued to publish its bulletin on epidemiological surveillance of rabies in the Americas. The first part of the PAHO/WHO tuberculosis bacteriology standards, aimed at achieving uniform application of the most appropriate techniques, was published in 1984.

2.213 **Training.** Stronger emphasis was placed on training in the countries and inservice training at the Center in order to strengthen national programs and institutions and better meet their requirements for trained personnel to perform highly specific functions, particularly in the laboratory. Training was provided to 106 professionals, including 37 from nine countries who received inservice training at the Center, 11 who attended courses at Headquarters, and 58 who participated in courses away from Headquarters (tables 14 and 15).

2.214 The Center collaborated in the presentation of a national course in Brazil on tuberculosis bacteriology and subregional courses on the same subject in Jamaica and Mexico, with the joint participation of public health and animal health laboratory workers from eight countries. The courses stressed reliable diagnostic methods, standardization of diagnosis, and the role of the laboratory in control programs. In Argentina, the Center cooperated in a course on bovine tuberculosis epidemiology and diagnosis and control methods.

2.215 **Technical cooperation.** A total of 19 countries in the American Region and one in Southeast Asia conducted programs with the cooperation of CEPANZO in rabies, brucellosis, bovine tuberculosis, leptospirosis, hydatidosis, and trichinosis, as well as in food protection. Argentina received assistance in bringing the rabies program up to projected strengths. The Paraguayan authorities were assisted in preparing a project for prospective IDB financing and in the continued analysis of methods for strengthening the rabies surveillance and information system. Similar support was extended to Peru. In addition, the Center cooperated with 10 institutions in five countries of the American Region and one in Southeast Asia (India) in rabies diagnosis, vaccine quality control, and rabies control programs.

2.216 Argentina and Brazil prepared cooperative programs in bovine tuberculosis. Paraguay was reviewing an extension of its program to cover the entire country. The Center continued to act as regional reference laboratory to control the quality of PPD tuberculins for both human and animal use and of BCG vaccines. Information and cooperation were provided to central laboratories and human and bovine tuberculosis programs of 18 countries of the Region and India.

2.217 Argentina prepared and began to implement a project for the control of brucellosis in goats in the provinces most severely affected by *Brucella melitensis*. Brazil developed a proposal to systematize efforts against brucellosis and evaluated strategies for possible application in Rio Grande do Sul. A serological survey of brucellosis in *Camelidae* was completed for the agriculture and livestock service of Chile. In Colombia, where the health and agricultural services are addressing the problem comprehensively, the Center participated in an assessment of the bovine brucellosis situation. CEPANZO supplied official laboratories of the countries of the Region

Table 14. Training of human resources, by country and type of training, in CEPANZO, 1984

Country	Courses at CEPANZO	Courses in countries	Inservice training	Total
Argentina	10	11	19	40
Barbados	—	2	—	2
Brazil	—	—	4	4
Chile	—	1	—	1
Colombia	—	1	4	5
Cuba	—	1	2	3
Dominican Republic	—	1	—	1
Guatemala	—	1	—	1
Guyana	—	2	—	2
Jamaica	—	6	—	6
Mexico	—	25	—	25
Nicaragua	—	—	3	3
Paraguay	—	3	—	3
Peru	—	—	1	1
Suriname	—	1	—	1
Trinidad and Tobago	—	2	—	2
Uruguay	—	1	—	1
Venezuela	1	—	2	3
Subtotal	11	58	35	104
Other WHO Regions				
India	—	—	1	1
People's Republic of China	—	—	1	1
Total	11	58	37	106

—None.

Table 15. Training of human resources, by program area and type of training, in CEPANZO, 1984

Program area	Courses at CEPANZO	Courses in countries	Inservice training	Total
Laboratory animals	—	—	3	3
Brucellosis	—	—	5	5
Hydatidosis	—	—	5	5
Immunodiagnosis of human hydatidosis	—	—	1	1
Immunodiagnosis of trichinosis	—	—	3	3
Food protection	11	15	9	35
Leptospirosis	—	—	1	1
Rabies	—	—	6	6
Tuberculosis	—	43	4	47
Total	11	58	37	106

—None.

with standards for the diagnosis of animal brucellosis. In addition, in its capacity as an international reference center, CEPANZO performed vaccine quality control tests and classified strains from seven countries.

2.218 Following reestablishment of the Center's leptospirosis program, assistance in laboratory diagnosis was furnished to Brazil and reference services were resumed. In regard to problems of parasitic zoonoses, the Center collaborated with the health authorities of Argentina in the development of a national technical standard for the control of hydatidosis, the conducting of control programs, the strengthening of national institutions producing and testing reagents for immunodiagnosis of the disease, the consolidation and extension of laboratory networks, and the conducting of immunodiagnostic studies of cases related to outbreaks of trichinosis in humans.

2.219 In food protection, the Center furnished technical cooperation to Argentina in carrying out a situational assessment and in preparing the basic document for the national food program. It also cooperated with Argentina, Brazil, Colombia, Mexico, and Peru in various matters pertaining to the improvement of food control laboratories and with the Cuban authorities in connection with the activities of the *Codex Alimentarius* Coordinating Committee for Latin America and the Caribbean.

2.220 The Center continued to encourage intercountry contacts and the work of intersectoral committees. A notable example was the meeting of Argentina, Brazil, and Paraguay, at which the three countries reached an agreement on conducting significant joint and cooperative activities for the control of brucellosis and tuberculosis. In Brazil, CEPANZO cooperated with the new health and agriculture authorities in reviewing various aspects of intersectoral coordination and action in the field of health. Finally, in its capacity as secretariat of CINVECC, CEPANZO played an active role in the organization and conducting of the Commission's first meeting, held in December 1984.

Pan American Foot-and-Mouth Disease Center (PANAFTOSA)

2.221 The fundamental objectives of PANAFTOSA are to promote action and provide technical cooperation for the eradication of foot-and-mouth disease in the countries of the Hemisphere.

2.222 **Research.** Work continued on the antigenic and immunological characterization of field viruses of foot-and-mouth disease and vesicular stomatitis and of viruses used in the production of foot-and-mouth vaccine. During 1984, the Center analyzed 234 field and 36 laboratory samples from eight affected countries and 21 samples from two countries free of this disease. Panama and the Central American countries (except Guatemala) use the Vesicular Disease Diagnostic Laboratory (LADIVES) of Panama for this purpose. The virus was characterized with the collaboration of the Animal Virology Center (CEVAN) in Argentina. In addition, the earlier studies on optimal conditions for inactivation by binary ethylenimine made it possible to transfer this methodology to official and private laboratories in several countries, including Argentina, Colombia, Ecuador, and Peru. Methods and results of research on evaluation of the integrity of the polypeptide components of vaccine antigens were applied routinely. Research on oil-adjuvant vaccine centered around the selection of optimal methods of production and concentration of antigens, inactivation, and emulsification, depending upon the inputs available in the various countries. Its use in the field included the successful vaccination of 1.3 million head of cattle in nine affected countries of the Region. Standardization of reagents for vaccine quality control was performed in Argentina, Brazil, Colombia, and Paraguay, as well as in Uruguay and other countries that follow a practice of controlling the quality of all batches of foot-and-mouth disease vaccine, including those produced in Ecuador. Studies and methods for the epidemiological characterization of foot-and-mouth disease, the find-

ings of which will serve as a basis for decision making for the control of this disease, also were continued.

2.223 **Technology**. Methodology for determining the risks of the introduction of foot-and-mouth disease from abroad and recognizing its predominant characteristics in zones of possible entry was tested successfully along Chile's border with Argentina. Similar action was being taken in Cuba and Mexico. An overall characterization was developed for use in diagnostic assessments and the formulation of programs in Argentina, Brazil, Colombia, Ecuador, Peru, and Uruguay. A manual for preserving and expanding the areas free of foot-and-mouth disease was prepared during the year; it is now being used in Colombia and is scheduled for application in Argentina, Brazil, and Uruguay in the near future. Finally, technology related to the production and use of oil-adjuvant foot-and-mouth vaccine was conveyed to all the governments through training and technical advisory services.

2.224 **Dissemination of information**. All of the South American countries continued to prepare weekly reports by quadrants and monthly reports specifying the number of herds affected and the type of virus. The Central American countries joined the hemispheric system in 1983 on the basis of a project implemented by PAHO/WHO with financial assistance from the United Nations in surveillance against vesicular stomatitis. The Center's role in the Hemisphere-wide system is to condense, analyze, and publish weekly and monthly bulletins for distribution to all the countries and interested organizations. The Center continued to publish the *Scientific Bulletin*, monographs, and technical manuals.

2.225 **Training**. The following activities were notable: an international seminar to evaluate the 14 courses on utilization and production of oil-adjuvant foot-and-mouth disease vaccine that were conducted during 1982 and 1983, within the framework of the PROASA project, in all of the South American countries affected by foot-and-mouth disease; a course on vaccine reference, diagnosis, and quality control for appropriate officials of Argentina, Bolivia, Ecuador, and Peru; a course on cellular cultures used in virology, with seven participants from Argentina, Brazil, Colombia, and Venezuela; inservice laboratory training for 44 participants from Latin American countries; a seminar on the prevention of foot-and-mouth disease, offered in Antigua for 16 veterinarians from the English-speaking Caribbean; the preparation of audiovisual materials on prevention of foot-and-mouth disease for the English-speaking Caribbean countries; a roundtable, cosponsored with FAO, on the development of standards for the organization of simulation exercises pertaining to the prevention and eradication of exotic diseases; the preparation of audiovisual aids on production and use of oil-adjuvant foot-and-mouth disease vaccine; and cooperation with FAO in the holding of the Regional Seminar on Epizootiology and Animal Health Economics in Lima, Peru.

2.226 **Technical cooperation**. Argentina formulated an animal health plan for 1985-1994, the goal of which is to eradicate foot-and-mouth disease throughout the country and establish a quarantine security station. Brazil revised its national foot-and-mouth disease control and eradication plan and strengthened the Federal network of animal health diagnosis and biological control laboratories. A technical report in this regard was prepared for the International Bank for Reconstruction and Development (IBRD). In Bolivia, stage II of the National Foot-and-Mouth Disease, Rabies, and Brucellosis Control Service (SENARB) project was reformulated for submittal to an international financial agency. The project is currently awaiting governmental approval. In Chile, a program to prevent the introduction of foot-and-mouth disease and other exotic diseases was established. In addition, Chile received assistance in eradicating an outbreak along the border area with Argentina. In Colombia, the II National Foot-and-Mouth Disease Control Plan, which includes goals for eradication in en-

demic areas, was prepared; the Plan will be submitted to external financing agencies for consideration. In Ecuador, the new authorities prepared and adopted stage II (1985-1990) of the National Foot-and-Mouth Disease, Rabies and Brucellosis Plan. Eradication initiatives in Peru focused on strengthening the preventive programs along the border and solving vaccine production problems.

2.227 In Paraguay, the foot-and-mouth disease control program was revised and priority areas for the use of oil-adjuvant vaccine were defined. Uruguay prepared an eradication plan to be implemented in the River Plate Basin concurrently with operations in the Brazilian State of Rio Grande do Sul and the Argentine Mesopotamia. With a view to redirecting its control program, Venezuela decided to begin producing inactivated foot-and-mouth disease vaccine instead of live attenuated virus vaccine. PANAFTOSA continued to furnish technical support for the production of oil-adjuvant foot-and-mouth disease vaccine in Argentina, Brazil, Colombia, Ecuador, Paraguay, Peru, and Venezuela. Varying degrees of progress have been made in these countries, with Brazil and Colombia reaching the stage of commercial production.

2.228 During 1984, all of the South American countries held meetings of joint committees established under the provisions of border animal health agreements. The Argentina-Chile, Ecuador-Peru, and Colombia-Venezuela agreements were reactivated during the year. The Center continued to act *ex officio* as Secretariat of the South American Foot-and-Mouth Disease Control Commission (COSALFA), which organizes annual meetings of directors of animal health to review and evaluate the countries' foot-and-mouth disease control activities. In 1984, an assessment was made of the countries' compliance with the commitments undertaken in the document entitled *Policy and Strategies for the Control of Foot-and-Mouth Disease in South America During the Decade 1981-1990*, approved by the IX meeting of COSALFA in 1982.

Special Programs

2.229 Outstanding emergent health problems which demand joint and specific actions have been recognized by the PAHO/WHO Governing Bodies. Special programs were designed and now are in full implementation on regional and subregional bases.

Priority Health Needs in Central America and Panama

2.230 The Plan for Priority Health Needs in Central America and Panama represents a joint undertaking by all the governments of the Central American Isthmus. Its goals are to intensify the mobilization of resources for satisfying basic needs and to contribute to the well-being of the most vulnerable population groups, especially children, the poor in urban and rural areas, and displaced persons.

2.231 In the past 5 years, several countries of the Central American Isthmus have experienced an unfortunate combination of political and social conflict within the critical economic conditions prevalent throughout the Region as a whole. The world recession has affected adversely the domestic economies of all of the countries. Per capita income has declined, and unemployment rates and poverty have increased. Upwards of 50,000 people have died and over half a million have been displaced as a result of internal conflicts and violence. These circumstances are conspiring against the people's access to health services, thereby exacerbating health problems among the groups at greatest risk.

2.232 To deal with this critical situation, the ministers of health of the countries of the subregion, in consultation with PAHO/WHO, decided to pool their resources and undertake joint efforts to identify common problems and propose solutions of collective interest, along with designing internal strategies and actions tailored to the requirements of each country. These efforts led to the development of the Plan, which in March 1984 the Ministries of

Health of the countries of the Central American Isthmus unanimously supported at a special meeting held in Costa Rica and later was supported by the "Contadora Group." In April of the same year, the Ministers of Foreign Affairs, gathered in Panama, gave the Plan their unqualified support and stated that one of its aims was to use the value system of health to build a "bridge" contributing to the establishment of peace. The Plan received similar support in May from the World Health Assembly, which recommended that the international community cooperate in this initiative. PAHO's Directing Council, in resolution CD30.R17 at its XXX Meeting, unanimously reiterated its support, decided to include Belize in the Plan, and recommended that PASB collaborate in the formulation of projects and coordinate the international efforts to obtain external financing.

2.233 The Plan includes seven priority areas: strengthening of health services through higher productivity and better use of available resources, development of health personnel, increased availability of essential drugs and critical inputs, improvement of the food and nutrition situation, control of malaria and other tropical diseases, prompt action for infant survival, and improvements to water and sanitation systems. The Plan identifies 40 subregional and 250 national projects. The preliminary estimate of external financial resources needed is US$1.4 billion over a 5-year period. The identification of priority areas and the formulation of project profiles were characterized by three highly significant features: active participation by more than 200 national personnel from the Ministries of Health, universities, and National Economic Planning Units of the countries involved, as a result of the establishment and operation of multidisciplinary teams; close coordination of the work of international cooperation institutions, particularly PAHO/WHO, UNICEF, UNFPA, IDB, and other agencies; and, finally, joint action by the governments, PAHO/WHO, and UNICEF in bringing initiatives and resource requirements to the attention of governments and donor agencies in the Americas and Europe.

2.234 The strategy adopted for resource mobilization was to channel the search concurrently toward potential domestic resources in each country of the subregion and potential funding from outside sources. Vital importance was attached to assuring optimal use of the resources assigned to the health sector by allocating them in accordance with a predetermined order of priorities, increasing productivity levels in the sector, and providing for appropriate linkage among sectoral components. With respect to external resources, every effort was being made to obtain them in the form of grants or on concessionary terms. By the end of the year the negotiations were showing promising results. A case in point was the agreement to finance the immunization program in El Salvador. This national program was designed to cover most of the country's regions, the expectation being that internal hostilities would temporarily cease during a vaccination drive. At year's end, USAID was giving favorable consideration to an infant survival project with a strong oral rehydration and nutrition component (estimated to cost US$8 million over 4 years), a subregional malaria project (US$3.5 million), and an essential drug project (US$3 million). The IDB was considering several projects relating to health services, water supply systems, and disease control.

2.235 This initiative offers promising prospects. The international community, however, is faced with the serious dilemma of deciding either to support and strengthen political understanding by providing constructive solutions to the socioeconomic problems of the subregion or to accept passively the continued deterioration of living conditions and the intensification of conflicts that may degenerate into a regional confrontation. The concept of health as a social objective is widely accepted by all nations and therefore it can and should be used to build a bridge of understanding, cooperation, solidarity, justice, and peace.

Emergency Preparedness and Disaster Relief Coordination

2.236 In 1984, PAHO/WHO pursued its objective of preparing the health sector of Member Countries to face natural and man-made disasters through the following major activities:

2.237 **Development of training/educational material**. Demand for the generic training package developed in previous years increased with the rise in the number of national courses and workshops on disaster preparedness and relief. In the area of visual aids, sets of slides on vector control and bacteriological analysis of water supplies after natural disasters were prepared. In order to serve increasing interest in case studies, PAHO/WHO also produced a slide show on the earthquake in Popayán, Colombia, in collaboration with the Ministry of Health and the University of Valle. Planning meetings were held to outline the contents of a new slide series on vulnerability analysis and planning for water supply and sewerage systems and hospital disaster preparedness which will be produced for field testing in 1985. A demand emerged for new simulation exercises. One was developed on water supply and sewage systems for hurricane situations in the Caribbean and another on intrahospital emergency and mass casualty management in Latin America.

2.238 Modules for self-instruction in emergency health management were developed as a result of the meeting of the schools of public health of Latin America and the Caribbean, held in Washington, D.C., at the end of 1983. These modules were field tested during 1984 and will be available to the schools of public health and to national course organizers. Regarding the role of public opinion in disaster situations, during 1984, PAHO/WHO reached an agreement with the British Broadcasting Corporation to coproduce a film on emergency health management after acute-onset natural disasters. It is hoped that the film will be helpful in educating the public, thereby making relief efforts more efficient.

2.239 **Training in environmental health**. In collaboration with CEPIS, comprehensive modules in Spanish on environmental health management following floods were developed and tested in an international workshop in Ecuador. Adaptation into English and simplification of all existing training modules for use in the small Caribbean islands is in progress. Emphasis placed in 1984 on water supply will shift progressively to general sanitation in 1985.

2.240 **Hospital disaster preparedness**. The explosion of gas holding tanks in Mexico City illustrated the magnitude of the problem the health services may face under emergency conditions. In 1984, nine workshops on mass casualty management were held in the Region, and seven hospitals were selected to take part in a pilot project to develop procedures and train hospital personnel in predisaster planning. Among the problems encountered is the relative scarcity of Spanish-speaking experts in formulation of disaster plans, as well as of drills in the absence of organized emergency medical services, radio networks, and centralized ambulance systems. In the Caribbean, a feasibility study was initiated for a mechanism to address mass casualties for the whole area rather than for each individual country; a hospital survey in the English-speaking countries has been already carried out to verify the potential response in case of disaster. The results of this feasibility study will be used in formal consultation with participating countries and funding agencies.

2.241 **Assessment of health needs**. Lack of timely and reliable information remains the major challenge in managing the response to natural disasters. Reasonable progress was achieved in 1984. In coordination with UNDRO and ECLAC, 25 regional experts from various sectors met in Mexico in May 1984 and developed an extensive list of indicators to estimate emerging needs in agriculture, feeding, health care, sanitation, transportation, and communication. PAHO/WHO staff members stationed throughout the Caribbean are on standby for the hurricane season to assist the countries in assess-

ing needs and coordinating relief in case of disaster.

2.242 **Technological disasters**. At its XXVII Meeting (resolution CD27.R40), the PAHO Directing Council requested PAHO/WHO's emergency preparedness program to cooperate with countries also in facing technological disasters such as chemical accidents, explosions, fires, and air crashes. The dramatic fuel explosion in Mexico and the air crashes in Quito, Ecuador, and La Paz, Bolivia, have illustrated the urgent need for decisive action in the Region. In 1984, PAHO/WHO initiated a regional analysis of vulnerability and promoted a series of regional and national technical workshops on chemical accidents.

2.243 **Technical cooperation to national programs**. The governments have dedicated substantial resources to establishing and strengthening national disaster preparedness programs in the health sector. In Central America, disaster preparedness units or offices are now operating in Costa Rica, Guatemala, and Honduras. Support was provided for 10 national or subregional meetings in Costa Rica, El Salvador, Guatemala, Honduras, and Mexico; in line with the philosophy of Technical Cooperation Among Developing Countries (TCDC), PAHO/WHO relied heavily on exchange of experience and collaboration among countries. A topic of special relevance to this subregion is health care for displaced persons. In conjunction with the United Nations High Commissioner for Refugees (UNHCR), the Red Cross, and UNICEF, PAHO/WHO held a high-level meeting of health officials in February 1984 in Mérida, Mexico, to discuss the health aspects of this problem. It was concluded that the ministries of health should play a more direct role in ensuring that these vulnerable groups receive primary health care of the same quality and level as that of the surrounding populations.

2.244 In South America, most of the technical cooperation was directed to the Andean countries most vulnerable to major earthquakes—in particular, Colombia, Ecuador, and Peru, which have established disaster preparedness programs in the health sector (ministries of health and social security agencies). Of particular interest is the successful follow-up of the 1983 meeting of public health school officials aiming to include disaster preparedness in the teaching curriculum; by and large, this objective is being met.

2.245 In the Caribbean, PAHO/WHO activities are integrated into the multiagency Pan Caribbean Disaster Preparedness and Prevention Project with headquarters in Antigua, West Indies. This multisectoral approach of UN agencies—UNDRO, PAHO/WHO, and secondarily the World Meteorological Organization (WMO), International Telecommunications Union (ITU), and others—is funded by a pool of donor agencies (USAID, CIDA, EEC, and recently, through PAHO/WHO, the Government of the Netherlands). Activities in 1984 took place in most countries of the subregion, although at a pace significantly slower than in 1983. Particularly significant were a series of environmental health training courses, vulnerability analyses of some hospital facilities to hurricanes, participation of the health sector in a meeting of all Caribbean national disaster coordinators, and the establishment of a radio emergency network.

2.246 Regional support in disaster relief was channeled to Ecuador (malaria control following 1983 floods); Colombia (technical cooperation and supplies following the floods, thanks to the donation of US$23,000 from CIDA); El Salvador (supplies for Rosales Hospital with the support of the Canadian Embassy); and Peru (follow-up of 1983 floods in Piura and Tumbes). Technical cooperation was offered to Ecuador and Mexico following the mass casualties caused by an air crash and a gas holding tank explosion, respectively, in these countries' capital cities.

Women, Health, and Development

2.247 The Five-Year Regional Plan of Action on Women, Health, and Development (WHD), 1981-1985, is being implemented. In

this vein, improved coordination of WHD efforts at the national level was a focus for many countries during the past year. The creation of 33 national Focal Points out of PAHO's 37 Member Countries to coordinate these efforts has proved to be a necessary and important step for mobilizing resources and promoting action.

2.248 As part of its collaboration with the countries in carrying out national WHD plans and activities, PAHO/WHO is conducting a series of seminar-workshops in Washington, D.C. The first was held in December 1983 and the second in April 1984. National Focal Points, other key nationals, and PAHO/WHO field staff from a total of 12 countries have participated. As an immediate product of each seminar, participants have outlined work plans for 1984-1985 for integrating activities addressing WHD into their national health plans and programs. The next seminar in the series is scheduled for early 1985.

2.249 Some countries already have integrated WHD activities into national health programs and have increased awareness and understanding of the issues involved. For example, Colombia held a Regional Meeting on Women and Health from 28 May to 2 June, with funding from PAHO/WHO and other international sources. Canada, Haiti, and Mexico held workshops in 1984 to introduce and promote national WHD activities to health personnel throughout these countries, to exchange information and experiences, and to develop specific activities at both Federal and State levels.

2.250 The XXIX Meeting of the PAHO Directing Council (September-October 1983, resolution CD29.R22), urged Member Governments to "increase the participation of nongovernmental organizations, as well as community groups that are concerned with women's issues, in the formulation of national health care priorities and programs." Starting in 1983, PAHO/WHO organized a series of activities to promote support for women's groups active in primary health care, including a survey of these types of organizations in the Region, an in-depth review of the activities carried out by some of these groups, and a technical work group to identify ways to involve these types of groups more effectively in primary health care. As a follow-up to these and other international activities, Colombia, Cuba, and Honduras national women's organizations are working with the ministries of health and education to provide community-level education for women including family planning, breastfeeding, legal rights, and health services. Several countries, including Barbados, Colombia, Ecuador, and Jamaica, have undertaken research in cooperation with PAHO/WHO on specific aspects of women's health, such as breastfeeding, maternal morbidity and mortality, women's impact on nutrition in the family and the community, and the health needs of single teenage mothers and their children. A number of countries have better incorporated women's health into their national health surveys and information systems or have produced special studies on the status of women's health.

2.251 Despite the obvious progress being made in governmental coordination with women's groups, lack of interagency coordination is still a major problem in many countries. Furthermore, ministry representatives have the problem of keeping abreast of the wide variety of programs being financed and administered by a myriad of private organizations.

2.252 In June 1984, PAHO published an annotated bibliography on *Women, Health and Development in the Americas* (Scientific Publication 464). The purpose of the bibliography is to provide planners, policy makers, health professionals, and other interested groups with an overview of currently available information that addresses the compelling issues of women's health needs and their roles in the provision of health care. As mentioned in this chapter, under Disease Prevention and Control, cancer of the cervix is the most common form of cancer among women in much

of Latin America and the Caribbean, and this public health problem could be dramatically reduced through integrated screening and control programs. In response to this problem, countries in the Region are working with PAHO/WHO to standardize norms and procedures for implementing and evaluating cervical cancer control programs. In 1983, in Mexico, the American Cancer Society and PAHO/WHO cosponsored an international meeting which brought together government officials, health professionals, and voluntary cancer societies from 18 countries to discuss implementation of collaborative cervical cancer control programs. Since then, Barbados, Brazil, and Colombia have begun evaluations of their cervical cancer control activities with PAHO/WHO support.

2.253 Some countries in the Region are taking more definitive steps towards providing better training for women in health care professions and promoting greater participation of women in health sector decision making. For example, Colombia and Jamaica held national workshops in 1984 focusing on various aspects of continuing education and other career opportunities for women in the health professions. Also, PAHO/WHO is currently working with countries to identify the needs of women working in these professions and how they can be better supported. PAHO/WHO is collaborating with national nurses' associations and groups in Brazil, Colombia, Ecuador, Honduras, and Peru to conduct studies of the nursing profession in terms of nurse's positions, salaries, work hours, and the like as they relate to other health professions.

2.254 The Special Subcommittee of PAHO's Executive Committee on Women, Health, and Development met in June to review progress made toward the Five-Year Plan's implementation. As a consequence, the PAHO Directing Council at its XXX Meeting (September-October 1984) urged the governments to provide more educational opportunities for women, to support their important contributions as providers and users of health care at all levels, and to enforce laws on the protection of women's rights and rescind all discriminatory legislation. The Council also emphasized the need to ensure that the goals and actions of the Five-Year Regional Plan of Action on WHD continue to be pursued beyond 1985 and fully integrated into the Plan of Action for the implementation of the Regional Stategies of HFA/2000.

Health Statistics

2.255 At the end of the year, the PAHO statistical data base was being implemented at Headquarters. The base includes data on mortality, population, social, and economic factors, and those health service components required for the programming of PAHO/WHO technical cooperation. During 1984, PAHO/WHO supplied statistical support for studies and programs, especially for the preparation of the Plan for Priority Health Needs in Central America and Panama. As the Focal Point for health information on the American Region, the Organization responded to information requests from countries and international agencies. In addition, it cooperated with Brazil and Colombia in studies on maternal mortality, accidental deaths, and the feasibility of analyzing social and economic factors reported in death certificates.

Chapter 3. Mobilization of Technical and Financial Resources

3.1 Technical and financial resource mobilization is a fundamental point to promote and develop government actions in overcoming the external sectoral health problems and ensuring the optimum use of available national resources. Based on the "Managerial Strategy for the Optimum Use of PAHO/WHO Resources in Direct Support to Member Governments," adopted in 1983, this chapter considers the generation and dissemination of knowledge, the mobilization of institutional capacity, technical cooperation among developing countries, and mobilization of international and external financial resources.

Generation of Knowledge

3.2 PASB continued to implement its managerial strategy adopted in 1983 for the generation of knowledge. The strategy rests on two basic supports: research and technology development.

Health Research

3.3 An overview of the Region reveals that the Member Countries are endeavoring, with the cooperation of PAHO/WHO, to develop the infrastructures necessary for performing multidisciplinary research in priority areas and applying the resultant knowledge effectively in the formulation of policies and plans and in the development of new approaches, solutions, techniques, and procedures. Following is a summary account of the countries' leading initiatives.

3.4 Bolivia, Honduras, and Nicaragua established research units in their ministries of health. A traveling seminar took place in which representatives of those ministries participated along with an official of Peru's Research Council. The seminar afforded an opportunity to examine the structure and operation of institutions performing health research in Brazil, Colombia, Cuba, and Mexico. As a further result of the seminar, the Research Council of Peru established a set of national priorities for studies in the field of health. With the cooperation of the Brazilian Research Council, a meeting was held to carry out a comparative analysis of the organization of health research in the countries of the Region, including analysis of the implementation of research policies. Representatives of the research councils and health ministries of Argentina, Bolivia, Brazil, Costa Rica, Cuba, Honduras, Mexico, Nicaragua, Peru, and Venezuela participated. Areas were identified for cooperation in the programming and conduct of research, training, exchange of technical and scientific information, and implementation of specific projects.

3.5 With PAHO/WHO cooperation, Brazil designed and applied a methodology for research management in health institutions. This experience will be extended to various countries in the Region. Cuba and Ecuador conducted workshops on health research methodology. Peru offered a course on research management, and Uruguay a course on operations research. A group of scientists from Argentina, Brazil, France, Mexico, the United Kingdom, and the United States of America met in Washington, D.C., to examine the trends and outlook for pharmacological research in Latin America and formulated recommendations for adjusting research and training activities to the requirements of the national essential drug programs.

3.6 PAHO/WHO's Advisory Committee on Health Research (ACHR) expanded its sphere of responsibility in 1984 to include other priority health aspects along with the purely medical. At the same time, the Committee assumed the function of fostering the mobilization of national resources, the exchange of information, and the development of networks for cooperation in research in priority health areas. In its new role, the Committee examined the broad range of priority PAHO/WHO activities and monitoring mechanisms to be developed under its responsibility. To overcome logistical problems and the shortage of research workers cognizant of the latest developments in their field, the Committee convened a study group to identify constraints and suggest solutions, including mechanisms for bringing researchers up to date in methods and technology. The Committee stressed the urgent need to strengthen studies on technology transfer and evaluation as well as the need to collect and disseminate information concerning studies on health services and the use of auxiliary personnel. Lastly, the Committee recommended that a multidisciplinary study on infant mortality be carried out. The Committee's recommendations were designed not only to promote activities but also to suggest guidelines to Member Governments and PAHO/WHO.

3.7 Within this context, the PAHO/WHO grant program identified two major priorities: analysis of conditions in the health sector (health profiles, policy formulation, technology, market for health personnel, environmental health services, and financing) and the study of health problems affecting specific groups (infant survival, chronic diseases of the adult, diseases of workers and the elderly). The objectives of this research are to disseminate knowledge in the areas of planning, development, and the rational use of available resources to strengthen the operating capacity of health systems; identify areas to be strengthened so as to cover the requirements of intersectoral coordination in solving health problems; reorient the technical and financial cooperation among countries, PAHO/WHO, and other international institutions; and identify critical areas of future research. The grant program serves as an instrument for coordinating scientific activities at the national, international, and PAHO/WHO levels. Promotion and development of research and studies is the basic function of PAHO/WHO's technical cooperation programs, especially those conducted at the Regional and Subregional Centers; their contribution to the solution of priority problems in the countries has become progressively more dynamic. For an analysis of the progress achieved in 1984, see the following chapters and sections: in chapter 1, Development of the Health Service Infrastructure (health service research); in chapter 2, Health Promotion and Care (research by CLAP, INCAP, CFNI, and CAREC); Environmental Health (CEPIS and ECO research); and Veterinary Public Health (CEPANZO and PANAFTOSA).

Technology Development

3.8 Continuing the process initiated in 1983 with the Inter-American Conference on the Evaluation of Health Technology, an international meeting on technological development in health was held in Brazil in 1984. This meeting, attended by representatives from Argentina, Brazil, Colombia, Costa Rica, and

Uruguay, defined criteria for a series of analyses of technological development to be carried out in collaboration with Member Countries. Following the meeting, a working group convened in Rio de Janeiro to design a Plan for Research on the Evaluation and Development of Technology and laid the groundwork for a program in support of the relevant institutions. This provided the framework for initiating the first analysis on the exportation and importation of health technology in the Region. Studies on technology inputs—magnitude, cost, selection, allocation, dissemination, and utilization—will be done initially in Argentina, Brazil, Colombia, Costa Rica, Cuba, Mexico, and Uruguay. The first study on the infrastructure of the medical equipment manufacturing industry was conducted in Brazil under the same context. In addition, a start was made on the identification and analysis of legislation relating to health technology, with emphasis on regulations pertaining to medical equipment, procedures, and drugs.

3.9 The promotion of actions at country level has led to the identification of a number of priorities, particularly in maternal and child health, for which a project was prepared and subsequently was approved by the W. K. Kellogg Foundation. On the basis of this project, four working groups were organized—on perinatal technology, obstetrical care, neonatal care, and growth and development—in addition to two special groups, one to examine policies and innovations in maternal and child health and the other to study the aspects of lifestyle and community behavior. Special mention should be made of the First International Meeting on Technology in Prenatal Care, attended by experts from the American Region and Europe, which will be followed up by a meeting on obstetrical care technology.

3.10 With regard to the dissemination of information on technology, two publications are to be issued for transferring knowledge and experience from other sectors to the health sector. In support of this work, a consultative group was formed to design projects for a health technology information network to facilitate contacts, collaboration, and information exchange among research groups and agencies in charge of formulating technological policy. One of the first projects of this network will seek to foster cooperation between maternal and child health and primary care projects and health administration training centers and programs. Another will endeavor to link centers devoted to biomedical engineering to those concerned with the preservation of technologies.

3.11 As part of PAHO/WHO programs of technical cooperation with governments, new forms of technology are being developed and utilized, including simplified x-ray services; simplified dental systems; effective and low-cost environmental health technology; simple tools for evaluating nutritional status; and vaccine production standards. The Regional and Subregional Centers are promoting the generation and utilization of knowledge in their respective areas of responsibility, each according to its workplans and priorities. Details on these activities are found in this *Report* in the summaries of the work of each Center.

Dissemination of Knowledge

3.12 One of the basic functions of PAHO/WHO cooperation with the governments is the dissemination of research-generated knowledge and the development of technology. Of special importance in this field are the activities of the Latin American Center on Health Sciences Information (BIREME), the Latin American Cancer Research Information Project (LACRIP), the Health Documentation and Information Center, and the Regional Center information networks.

Latin American Center on Health Sciences Information (BIREME)

3.13 As a regional information center, BIREME answered 47,720 requests from Bra-

zil and other Latin American countries for technical and scientific information. The MEDLINE and IMLA systems continued to perform bibliographic computer searches in Brazil through the subcenters in Belo Horizonte, Salvador, and Rio de Janeiro. Following an evaluation of the MEDLINE system in 1983, a larger-capacity processing center will be installed at BIREME to handle international data of immediate usefulness to the countries. BIREME continued its two programs for the selective dissemination of information on cancer (LACRIP, located at PAHO Headquarters) and on nutrition (National Institute of Food and Nutrition, INAN, in Brazil). The new agreement with Brazil's INAN facilitated the publication of two annual issues of *Nutrition Alert* and the publication and distribution of *Bibliographic Alert* and the *Index Medicus of Latin America*.

3.14 BIREME is responsible for promoting and coordinating the Latin American Health Information Network. Argentina, Chile, and Colombia agreed to establish national information systems as operating elements of the network, while the national centers of the network in Nicaragua and Uruguay consolidated and strengthened their programs. In Brazil, in an effort to strengthen the Brazilian Health Information Network, the directors of the two national subcenters reviewed the project prepared by BIREME for establishing a regional data base on health in the Region to commence operation in 1985. An advanced training course was conducted for 12 medical librarians from Brazil and other Latin American countries.

Latin American Cancer Research Information Project (LACRIP)

3.15 This network continued to distribute selective information on cancer through BIREME and the subcenters in Argentina, Chile, Costa Rica, Cuba, Mexico, Peru, and Venezuela. In 1984 its services covered 22 countries, including Argentina, Chile, Costa Rica, Mexico, Peru, and Venezuela, which acted on a decentralized basis. Argentina and Costa Rica initiated their activities within the network in 1984. Information on 15 subjects was provided quarterly to more than 3,000 users. The system was adjusted so that the subjects covered would better meet the needs of physicians and other health workers in oncology. For instance, the heading "symptoms" now includes leukemia and myeloma. In addition, new subject headings were introduced, including rehabilitation and oncological nursing.

Health Information and Documentation Center

3.16 The center, located at PAHO Headquarters, expanded its capacity by adding more than 27,000 new documents, all of which are now available to the Member Countries in microfiche form. In 1984 it supported the work of BIREME as a basic component of the system. The center played an active role in the organization of documentation centers at the PAHO/WHO Offices in Argentina, Bolivia, Brazil, Colombia, Cuba, Dominican Republic, Guatemala, Honduras, Jamaica, Panama, and Trinidad and Tobago to serve the needs of PAHO/WHO staff and the national authorities.

Other Information Networks

3.17 Dissemination of information was the basic function of the PAHO Regional Centers. The following networks and units were important for their contribution in this field: Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA), Network for Information on Zoonoses and Foot-and-Mouth Disease, and the epidemiological information and surveillance system at the Pan American Center for Human Ecology and Health (ECO). Chapter 2 provides details of the programs in operation in the descriptions of CEPIS, CEPANZO, PANAFTOSA, and ECO.

Mobilization of Institutional Capacity

3.18 The strategy of strengthening the institutional capacity of national centers with resources and support of PAHO/WHO Regional and Subregional Centers continued to be implemented. To achieve this purpose, the strategy attaches vital importance to establishing mechanisms for continuous communication and cooperation in the areas of research, technological development, dissemination of information, and training. One such mechanism is the organization and operation of networks of centers.

Networks of National Centers

3.19 The following networks were in operation or were established in 1984:

- **The Regional Network on Advanced Training in Health Services Administration** operates within the PROASA program. With a membership consisting of health administration training institutions and programs in Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, and Peru, the network served as the coordination and support unit for 58 courses in administration offered during the year at 35 institutions.
- The **Regional Network of Schools of Public Health and Postgraduate Programs in Preventive and Social Medicine (ALAESP)** comprises 10 schools of public health and 18 graduate programs in preventive and social medicine. The network has undertaken to regionalize education in these fields with the aim of contributing to the development of centers of technical excellence in public health education in the Latin American countries.
- The **Network of Programs of Continuing Education and Supervision** promotes the incorporation of supervision in the educational process. More than 200,000 health professionals, technicians, and auxiliaries received training through this network up to 1984. The network operates in 12 countries in the Region.
- The **Regional Network of Educational Technology in Health Centers** includes more than 20 educational technology centers in the Latin American countries. These centers were established with the direct cooperation of the former Latin American Center for Educational Technology in Health (CLATES). The network is currently receiving support from PAHO/WHO and from the Nucleus for Educational Technology in Health of the Federal University of Rio de Janeiro (NUTES), which is the national counterpart of CLATES.
- The **Network of National Community Health Training Nuclei for Central America and Panama**. The Community Health Training Program for Central America and Panama (PASSCAP) is consolidating this network in all six countries of the Central American Isthmus. Its basic aim is to facilitate technical cooperation among these countries in the development of human resources in the health sector.
- **Network of Perinatology Centers**. An informal perinatology network is developing by means of collaborative programs involving groups of national professionals, most of whom attended courses at the Latin American Center for Perinatology and Human Development (CLAP). The groups presently making up the network are distributed throughout 17 countries of the Region.
- The **Operational Network of Food and Nutrition Institutions** is being organized in all countries with highly reorganized scientific and teaching institutes who follow food and nutrition multidisciplinary

approaches. Its objective is to contribute to an adequate supply and consumption of food and the prompt solution of nutrition diseases and problems within the context of Technical Cooperation Among Developing Countries (TCDC).

- The **Network of National Centers for the Classification of Disease** consists of centers in Brazil, Peru, and Venezuela. In 1984, centers in Argentina and Mexico were added, a working strategy based on the TCDC approach was defined, and studies on coding methods were undertaken.

Activities of PAHO/WHO's Regional and Subregional Centers

3.20 Reference was made previously to the basic function of the Regional Centers as vehicles for the mobilization of technical resources in the countries, especially capabilities for generating information, developing technologies, disseminating information, and training personnel. Essential functions of these Centers are the identification of installed capacities for these purposes in the countries and the promotion of technical and operational linkages among groups in the countries and among the countries themselves, to culminate in the emergence of networks of mutually supporting and complementing centers. As those centers in the countries and their networks become more firmly established and grow stronger, they will gradually take over the present functions of the PAHO/WHO Centers.

3.21 Each Regional Center contributes to the development of priority program areas: CLAP, INCAP, CFNI, and CAREC in health promotion and disease control programs; CEPIS and ECO in environmental health programs; and CEPANZO and PANAFTOSA in animal health. The activities of the different Centers are reviewed in the corresponding program areas in chapter 2 of this *Report*.

Technical Cooperation Among Developing Countries (TCDC)

3.22 The year was marked by a growing trend toward a more systematic utilization of TCDC as an effective tool for mobilizing technical resources and putting them to use in the Region.

3.23 At its XXX Meeting, held in September, the Directing Council of PAHO supported the Secretariat's study on guidelines for the promotion of technical and economic cooperation among developing countries (TCDC/ECDC) in the health sector, which contained proposals for stimulating, facilitating, and systematizing TCDC. The Directing Council, in resolution CD30.R3 of that meeting, reiterated the urgent need for legal, administrative, and financial measures by individual countries to foster collective and bilateral actions in the field of health. This resolution was intended to support initiatives by the countries as well as by PAHO/WHO to further the process.

3.24 With the aim of developing systematic approaches for and detecting constraints on the use of TCDC, PAHO/WHO convened a working group consisting of representatives from Argentina, Brazil, Colombia, Cuba, Mexico, and Venezuela. The group examined each country's potential capacities for meeting domestic health needs and cooperating with other countries. It also identified major obstacles such as a lack of information on and familiarity with TCDC, as well as funding difficulties. To surmount these problems, Brazil, Colombia, and Cuba initiated studies to analyze existing capacities and systematize the information. PAHO/WHO is requesting the Member Countries to include in their national budgets the necessary funds to support such activities. In addition, together with the Latin American Institute for Economic and Social Planning (ILPES), the Organization is designing mechanisms for financing TCDC with national resources as a practical guide for both the governments and PAHO/WHO. Finally,

PAHO/WHO is including funds for intercountry activities in its technical cooperation program.

3.25 The growth of the Regional Networks of national centers for human resources, maternal and child health, and environmental health resulted in an intensified exchange of experience and technical information. Several advances also were made at the subregional level. In the Central American countries, joint action by some 200 health officials made it possible to identify priority areas and formulate national and intercountry projects within the Plan for Priority Health Needs in Central America and Panama. In human resources, the Community Health Training Program for Central America and Panama (PASCCAP) consolidated the network of national centers for joint study, programming, and training of health personnel of Central American Isthmus countries. In the context of TCDC, the countries of the Andean group (Bolivia, Colombia, Ecuador, Peru, and Venezuela) provided training to managers of drug supply systems by means of national and intercountry courses and established a subregional information system for drug registration. In the Caribbean Community (CARICOM), the countries continued to utilize TCDC in nutrition and disease control programs with the support of CFNI and CAREC, respectively. Subregional training programs for health and veterinary personnel also were conducted.

3.26 PAHO/WHO's Regional and Subregional Centers have been operating as instruments of TCDC for many years. INCAP serves as a vehicle for the exchange of information and experience on nutrition among the countries of Central America and Panama. BIREME disseminates medical and health information, while CEPIS and ECO collaborate in matters pertaining to environmental sanitation, and CEPANZO and PANAFTOSA in questions related to zoonoses and foot-and-mouth disease. The initiatives on essential drugs provide another significant example of joint action. In addition to the Andean group project, Argentina, Brazil, and Mexico agreed to conduct joint and supplemental activities, especially in the production of raw materials. Also, the countries of the Central American Isthmus formulated a subregional essential drugs program.

3.27 TCDC between two countries has been a common practice in the Region, often based on mutual understandings and formalized at times by agreements. Mexico's National Virology Institute and National Reference Laboratory cooperated with Bolivia, Chile, Colombia, Guatemala, Honduras, Nicaragua, Panama, and Peru in verifying the stability and potency of the poliomyelitis and measles vaccines used in those countries' programs. Those institutions extended consulting services to Cuba in the area of measles vaccine and DPT production and in the holding of a regional seminar on quality testing of viral vaccines. In quality control of reagents, intercountry activities involving Brazil, Chile, Cuba, and Mexico were carried out and reagents were provided to other countries of the Region (nearly 900 reagents supplied to 11 requesting countries). Similarly, Argentina offered to supply *Trypanosoma cruzi* antigen for the diagnosis of Chagas' disease. An instance of formalized cooperation is the agreement between Cuba and Nicaragua for development of human resources in Nicaragua's health sector. This agreement was in its last year of effectiveness in 1984.

Mobilization of International Resources

3.28 The Regional Strategies emphasize the need for increased efforts by the Organization to channel technical and financial resources from the international community to the countries for the purpose of supplementing and stimulating national efforts and resources devoted to critical and priority health areas. A summary of leading activities is presented below.

3.29 **United Nations Development Program (UNDP).** Within its 1982-1986 programming cycle, UNDP is contributing to health projects in the Region with an amount of US$11.2 million (US$8.9 million for country projects and US$2.3 million for regional projects). During 1984, UNDP allocated US$2.6 million, of which US$2.1 million was for health projects in 17 countries and US$0.5 million for regional projects. Most country projects, totaling US$9.6 million, were implemented in 17 countries; most projects were directed to the extension or consolidation of services based on the primary health care strategy. The regional projects were mainly concerned with the training of health personnel. Preparation of the fourth UNDP programming cycle was scheduled to begin in 1985, based on three items: service to low-income population of urban and rural areas, science and technology, and governmental policies.

3.30 **United Nations Fund for Population Activities (UNFPA).** The UNFPA provided support to 35 projects totaling US$7.5 million: 31 national projects in 27 countries with a total cost of US$7 million and 4 regional projects totaling US$501,000. UNFPA activity in the Region increased as a result of the greater number of countries involved, the size of projects, and the larger number of program components.

3.31 **United Nations Children's Fund (UNICEF).** UNICEF and PAHO/WHO conducted joint programming in a number of countries under the terms of an agreement between the two agencies. It was hoped to strengthen this coordination in 1985 in order to benefit the countries. Within this scheme, UNICEF provided support in courses on nutrition, food, and breastfeeding (Costa Rica) and on cold chain maintenance and diarrheal diseases (Guatemala). Seminars on diarrheal disease control were conducted in Honduras and Nicaragua, and breastfeeding standards were revised in Costa Rica. UNICEF has cooperated with PAHO/WHO in the formulation of a regional child survival program, to be implemented primarily in the Central American countries and Panama. An intensive vaccination program (diphtheria, pertussis, tetanus, poliomyelitis and measles) was developed by Colombia with UNICEF, PAHO/WHO, and UNDP cooperation. UNICEF was found to favor projects in less developed areas which involve the use of simple technologies and exert a major impact on the health of mothers and children.

3.32 **United Nations Fund for Drug Abuse Control (UNFDAC).** This fund sponsored four projects totaling US$1.5 million—in Colombia, Ecuador, Jamaica, and Peru—in the areas of epidemiology, information, and drug abuse treatment and education, including the replacement of *Cannabis indica* with other crops.

3.33 **World Food Program (WFP).** In 1984, the WFP was active in 20 countries of the Region by means of 42 projects which served as a vehicle for supplying communities with 397,000 metric tons of food at a cost of approximately US$270 million.

Mobilization of External Financial Resources

3.34 As a further step in implementing the strategy of increasing the Member Countries' capacity to identify priority areas of their health plans for which special resources are needed and to determine potential sources of financing for them, PAHO/WHO distributed to the Member Governments a document entitled *Guidelines for the Mobilization of External Financial Resources for Health*, containing information on prospective funding sources, procedures to follow, and mobilization strategy.

3.35 An analysis of available information on external financing sources shows that in the Americas the concessionary financing for all sectors increased from US$3.26 billion in 1982 to US$3.37 billion in 1983 in the Americas. Of this total, US$279 million (approximately 8.2%) went to the health sector; two-

thirds of this sum was channeled to environmental health programs.

International Lending Agencies

3.36 The **Inter-American Development Bank (IDB)** continued to be the leading source of financial support for health programs in the Americas. An IDB/PAHO meeting was held in June 1984 to determine joint actions to deal with the impact of the current economic crisis on the health sector. The meeting provided an opportunity to examine measures the Bank could adopt to stimulate investments in the social sectors, particularly in health, with emphasis on the less developed countries. The IDB defined its investment policy for water supply: it will give priority to projects for strengthening and improving the operation and maintenance of existing systems. Community involvement, including financial and administrative participation, is regarded as an essential factor.

3.37 According to information in its 1984 Annual Report, the IDB approved five water supply and sanitation loans totaling approximately US$282 million for projects in Chile (US$2.5 million), Colombia (US$200 million), Costa Rica (US$28 million), Ecuador (US$28 million), and Honduras (US$24 million). In addition, it provided grants totaling US$3.2 million for preinvestment studies and specific projects in Brazil, Ecuador, Guatemala, Haiti, and Honduras. The IDB also approved some US$397 million for projects in social sectors related to health programs, including projects in Chile (US$125 million), Colombia (US$115 million), Costa Rica (US$17.3 million), and Uruguay (US$40 million).

3.38 In 1984, PAHO acted as executing agency for 11 IDB-financed technical cooperation projects (9 national and 2 regional) totaling US$4.3 million. The national projects represented a total of US$1.9 million in funds provided on a nonreimbursable basis for the development of health services. The projects were under way in five countries, some of them having started in earlier years. Prominent among the regional projects was a technical cooperation agreement between the IDB and PAHO/WHO for the preparation of investment projects for health, water supply, and basic sanitation in IDB beneficiary countries. Approximately US$540,000 was expected to be invested in these projects over a 2-year period. In addition, technical cooperation projects were formulated to accompany loan applications presented by Barbados, Guyana, Honduras, Mexico, Peru, and Venezuela. Finally, the IDB was considering a number of national and subregional projects under the Plan for Priority Health Needs in Central America and Panama, in the following areas: health service development, nutrition, maternal and child health, malaria, essential drugs, and environmental health.

3.39 The **International Bank for Reconstruction and Development (IBRD or World Bank)** approved two loans totaling an estimated US$28 million for water supply and sanitation systems (Honduras, US$19 million; Jamaica, US$9 million). According to preliminary data, the IBRD disbursed approximately US$600 million in 1984 for projects approved in earlier years. The IBRD is considering two projects on foot-and-mouth disease and other diseases: one in Argentina with an estimated cost of US$133 million and the other in Brazil for US$120 million. PAHO/WHO cooperated in this project and, with funds provided by IBRD, assisted the Government of Brazil in a study on laboratory services for foot-and-mouth disease.

Bilateral Financial Cooperation

3.40 A total of 14 sources of bilateral cooperation operate in the Americas. Eight of them (Canada, Denmark, the Federal Republic of Germany, France, Japan, the Netherlands, Norway, and the United States of America) were active in 1984. According to available data, they channeled approximately US$97 million into the health sector, 29% of

which went for water supply and sanitation and 71% for health and service development programs.

3.41 **Canada**[a] supplied US$2.7 million to Belize, Brazil, Chile, Colombia, Cuba, Honduras, Mexico, Paraguay, Peru, and the English-speaking Caribbean countries for programs in urban planning, water supply, maternal and child health, insect control, and dengue.

3.42 **Denmark, Japan, and Norway**[a] contributed to the health sector in amounts of US$3 million, US$2 million, and US$1.5 million, respectively.

3.43 **Federal Republic of Germany**[a] contributed US$10 million for environmental health in Brazil, Colombia, and Paraguay.

3.44 **France**[a] provided US$9.9 million for construction and equipping of hospitals in Bolivia, Colombia, and Paraguay.

3.45 **Netherlands**[a] donated US$5.6 million to Brazil, Chile, Dominican Republic, Guyana, Haiti, Jamaica, Nicaragua, and Uruguay for programs in hospital development, water supply systems, disaster preparedness, and nutrition.

3.46 **United States of America**. During the fiscal year ending 30 September 1984, the Agency for International Development (USAID) provided US$27 million in grants and loans for activities in the health field, along with US$14 million for family planning. The cooperative programs covered the areas of health services, sanitation, immunization, information systems, malaria, epidemiology, and nutrition in Central America and Panama, the Caribbean, and South America. The USAID budget for the fiscal year 1 October 1984-30 September 1985 includes US$76 million for health projects and US$27 million for family planning. Salient among these projects are: a 4-year, US$8 million oral rehydration monitoring and management program in Central America and Panama; a 2-year, US$3.5 million malaria program; a US$3 million essential drugs program; and a US$9.5 million health service program in Guatemala.

[a]The latest information available for these countries is for the calendar year 1983.

Foundations and Government Agencies

3.47 A total of 174 private agencies have been identified as sources of aid in the field of health in the Western Hemisphere. The major foundations include W. K. Kellogg, Ford, Rockefeller, Edna McConnell, Clark Hewlett, Tinker, Public Welfare Foundation, and the Trasher Research Fund. These agencies donated some US$19 million to the health sector, US$18 million of which represented grants by the W. K. Kellogg Foundation.

Pan American Health and Education Foundation (PAHEF)

3.48 PAHEF is a nonprofit foundation dedicated to advancing the fundamental objectives of PAHO and WHO. PAHEF is cooperating with PAHO/WHO in the Program for Textbooks and Instructional Materials, most of which it finances with a capital revolving fund derived from loans from the Inter-American Development Bank (IDB) and from income from sales of textbooks, manuals, and other instructional materials. In 1984, net sales were US$2.46 million and unit sales were US$119,000. Technical supervision and administration of the program continued to be the responsibility of PAHO/WHO. PAHEF also receives grants and tax-deductible donations to support designated health programs. With funds from these sources, in 1984 PAHEF supported 47 projects costing US$472,000. PAHO/WHO provided technical and administrative supervision for these projects as required. Most projects were for the Americas, but PAHEF also received donations of antimalarial drugs valued at US$99,000 for the WHO world-wide program in tropical diseases.

Chapter 4. Relevant Problems

4.1 Outstanding problems affecting the health sector as a whole in almost all the Latin American and Caribbean countries have been identified in previous parts of this *Annual Report*. This chapter examines some of their relevant characteristics.

Economic Crisis

4.2 The serious economic crisis continued to be the major problem the health sector faced in 1984, both because of its adverse influence on development in the Latin American and Caribbean countries and because of its impact on living standards and well-being of the population. All socioeconomic indicators registered significant declines. Rising inflation, high interest rates, an overwhelming international debt, unemployment, a slowdown in private sector production, and stagnant public services characterized this truly regressive situation in most of the countries. A study by the Organization showed that in 1984 per capita income declined in 12 countries and that average Region-wide Gross Domestic Product (GDP) at the end of the year was roughly equal to that in 1976.

4.3 When spiraling inflation is added to a drop in per capita income, living standards are bound to suffer a sharp decline. Thus, in virtually all of the American countries, the ability of a family to pay for food, housing, clothing, and other basic needs regressed to the levels of a decade earlier.

4.4 One of the strongest obstacles to economic growth is the heavy burden of foreign debt carried by the governments of the Region. In 1984 alone, the net transfer of resources from the Region to other areas came to US$26.7 billion, 10% of which went for the payment of interest on the outstanding debt. Total external indebtedness increased in 1984 to US$360 billion.

4.5 In human terms these figures represent very low living standards, unemployment, and an increase in underdevelopment. ECLA estimates that, even if a variety of positive conditions were factored in, a per capita income similar to that of 1980 would not be achieved in the Region as a whole by 1990. This hypothesis assumes a situation not only of stagnation but essentially of regression in most of the Latin American and Caribbean countries. Moreover, a comparison of living standards and development levels with those of industrialized countries makes it apparent that the gap is growing wider daily between the two groups.

4.6 The repercussions of this situation on the social sectors have been dismal in many respects. In the health sector, the governments are faced with a growing demand for services by a population in constant growth, at a time when there is a heavy pressure for a

significant reduction in funds allocated to the daily operations of health services. This pressure also limits the possibility of extending the coverage of services to unprotected populations in rural and suburban areas and the countryside. Signs of stagnation in certain indicators of health and living conditions are no longer unusual.

4.7 The characteristics of this situation were examined in a study which the PAHO/WHO Secretariat submitted to the XXX Meeting of the Directing Council entitled "The Economic Crisis in Latin America and the Caribbean and its Repercussions in the Health Sector." In addition to discussing the overall socioeconomic situation in the Hemisphere, the report examined its implications for the health sector in most of the Region's developing countries. The decline in national and international financing for health programs also was described. In the discussions on this sensitive matter within the Directing Council, the opinion was emphasized that the social sectors ought to view the crisis as a challenge to set their own houses in order by examining the financing of activities in the public and private sectors and carefully reviewing the utilization of resources in terms of cost effectiveness and productivity. The countries' human resources capacity and utilization also should be taken into account, along with the selection of appropriate technology for carrying out activities. Emphasis was also placed on the urgent need for linkage among the sector's component entities in order to use resources more productively and expand the coverage of health services.

Operational Capacity of the Health Sector

4.8 The most serious obstacle to rational utilization of the health sector's resources and to intersectoral linkage continued to be the sector's limited operational capacity. This problem and possible ways of addressing it were examined at the XXX Meeting of PAHO's Directing Council during the technical discussion on "Increasing the Operational Capacity of the Health Services for the Attainment of the Goal of Health for All by the Year 2000." The Council reviewed the problems of health service administration and management at all levels, obstacles encountered in the training and utilization of human resources, the absence of controls to ensure that selection and application of technologies are based on social efficiency, and the absence of intersectoral linkage mechanisms to facilitate the expansion of coverage and the reduction of social inequities.

4.9 As a result of these discussions, the PAHO Directing Council, at its XXX Meeting, adopted resolution CD30.R28 calling upon the governments to give priority to developing the operational capacity of health services, with emphasis on high-risk groups, in the formulation of health policies; reviewing the structure of funding for health services and fostering productivity; reviewing and adjusting their policies on the training and utilization of personnel; introducing managerial and technological innovations designed to increase the productivity of the services; and seeking social participation in decisions affecting health.

4.10 The governments' recognition of the far-reaching importance of problems related to operational capacity of health services and of possible ways of addressing them lends urgency to the need for vigorous and consistent action to be defined in each country, in keeping with its particular situation and problems, for the purpose of surmounting these obstacles over time and enabling the sector to cope with economic and social crises.

Essential Drugs

4.11 The problem of drug supplies, especially for marginal groups, became increasingly more serious. The expenditure of more than US$5 billion on drugs in Latin America was unresponsive to the Region's real needs, and in fact reflected problems in the consump-

tion and use of drugs. A glaring disparity exists between the scant supply of drugs for the underprotected or unprotected residents of urban poverty belts and rural areas and the generous supply of drugs for those who can afford to pay for them and have access to medical care. This disparity is evidence of the need to strengthen the coverage of services and ensure the availability of essential drugs to the underserved.

4.12 In all countries but three, the pattern of domestic production of essential drugs is not responsive to domestic demand, creating a reliance on imports and accordingly on the vagaries of the world market. Furthermore, local production is dependent on imports of raw material. The absence of a comprehensive pharmaceutical policy in most of the countries limits the possibility for cooperation among the sectors involved, including health, industrial production, trade, and planning. The situation is compounded by quality control problems and the absence of supply systems. Although the governments have taken steps to deal with these problems, stronger action is needed to ensure that currently disadvantaged groups gain access to health care services and essential drugs.

Technological Problems

4.13 The wide disparity between the technological capabilities of developed countries and developing countries is a source of increasing concern from the standpoint of technological dependency. High-cost technology transfers, foreign investment, and international financing are priority questions in this regard. The minimal scientific and technological capabilities of developing countries makes them dependent on imported technology and limits the possibility of developing local technologies. It should be further noted that foreign technologies often are unresponsive to the prevailing needs of health services. They are also subject to problems of inappropriate use, which may favor the interests of particular professional, technical, industrial, and commercial groups at the cost of exacerbating existing inequalities and contributing to the wasteful use of social resources and to a lower standard of living.

4.14 These factors have led the Organization's Member Governments to formulate strategies for dealing with the problems in question, including intercountry cooperation and regional integration to achieve greater bargaining strength in the selection and importation of technology and greater endogenous capacity to produce appropriate technology. Implementation of this strategy will begin in 1985 with a regional collaborative survey which is expected to involve the active participation of six Governments in the Region: Argentina, Brazil, Colombia, Costa Rica, Mexico, and Uruguay.

Part III
Relevant Activities of the PAHO Governing Bodies

Chapter 5. PAHO Governing Bodies

5.1 The American countries' joint commitment to the strategies of health for all involves efforts by the Member Governments themselves and the Secretariat, as well as initiatives and guidelines originating in the Organization's Governing Bodies: the Pan American Sanitary Conference, the Directing Council, and the Executive Committee. In 1984, the Directing Council and the Executive Committee held their regular meetings to perform their statutory functions of reviewing the progress of the Organization and its programs and formulating recommendations to the governments and the PAHO Secretariat. The recommendations, included in resolutions of the Directing Council and the Executive Committee, were intended to serve as guidelines for national and regional action in specific fields. Accordingly, it is important to know the extent to which the decisions of the Governing Bodies are helping to orient resources and efforts toward priority areas in the Region, and the extent to which they are being translated into specific actions by the governments and the Secretariat.

5.2 The time that elapsed between the Directing Council Meeting in October and the end of the period covered by this *Report* was too short to warrant the expectation of substantial activities and results. Consequently, it was not considered practical to attempt to measure the progress achieved in implementing the resolutions adopted in 1984 at the XXX Meeting of the Directing Council. It was, however, possible to examine the actions taken in 1984 by the governments and the Secretariat with respect to the resolutions approved in 1983 by the Directing Council's XXIX Meeting.

Action in 1984 on Resolutions of the XXIX Meeting of the Directing Council (1983)

5.3 Table 16 shows the resolutions that the Directing Council discussed and adopted in its XXIX Meeting on matters pertaining to the priority areas of infrastructure development, health promotion and disease control programs, resource mobilization, and managerial strategy. It also indicates the measures which the governments and the Secretariat adopted as a result of the 13 resolutions included in this analysis. Many of the actions are long-term and will require continuous monitoring in the years ahead. To facilitate analysis, the resolutions were arranged by content under headings pertaining to the priority areas of the Plan of Action and the PAHO Program and Budget.

Table 16. Action by the Member Governments and PASB in 1984 on resolutions of the XXIX Meeting of the PAHO Directing Council, 1983

Resolutions	Action
Development of the Health Services Infrastructure	
Preliminary report on the regional situation in regard to the strategies of HFA/2000 (CD29.R13)	
To the Governments	*Governments*
Urges them to expedite the monitoring and evaluation processes.	No actions to adjust the monitoring and evaluation processes reported. The countries met with problems in completing the WHO common framework form for the global evaluation.
To PASB	*PASB*
Requests it to support the national planning processes as a basis for the development of monitoring and evaluation.	Using the information available from the countries, PASB will prepare the regional contribution on the strategies for the WHO Global Evaluation document. Intensified its cooperation with schools of public health in the teaching of planning. Strategic planning and management approaches were developed with the school in Medellín (Colombia), which are now being used in Honduras, Nicaragua, and Panama. Intersectoral planning program has begun with ILPES.
Nursing (CD29.R18)	
To the Governments	*Governments*
Recommends that they strengthen nursing services and the training of nurses.	Argentina, Bolivia, Brazil, Canada, Chile, Costa Rica, and Panama organized national and subregional meetings to examine the changes required in the information systems and the training of nursing personnel. The meetings were attended by representatives of ministries of health, social security agencies, nursing schools, and nursing associations.
To PASB	*PASB*
Requests it to support the governments' initiatives.	Gave technical and financial support to above meetings. Conducted the "Study of Nursing Practice" in Colombia, Ecuador, Honduras, Mexico, and Peru.
Blood transfusion services (CD29.R15)	
To the Governments	*Governments*
Recommends that they strengthen the national blood transfusion services by means of appropriate programming, funding, and regulation.	Brazil, Colombia, Costa Rica, Cuba, Ecuador, Jamaica, Nicaragua, and Uruguay evaluated their blood banks. The evaluations showed that all of them fulfilled the reference and training requirements.
To PASB	*PASB*
Asks it to promote and support the development of the program.	Cooperated in the consolidation of the Network of Collaborating Banks. Supported the programs about to begin or under way in Barbados, Belize, Brazil, Dominica, Grenada, Haiti, Jamaica, Peru, Trinidad and Tobago, and Venezuela.
Production and marketing of essential drugs (CD29.R30)	
To the Governments	*Governments*
Urges them to adopt intersectoral policies and to evaluate current practices in drug production, quality control, and supply.	Argentina, Brazil, and Mexico jointly adopted a strategy of self-sufficiency in the coordinated production of raw materials.

Table 16. Action by the Member Governments and PASB in 1984 on resolutions of the XXIX Meeting of the PAHO Directing Council, 1983 (Cont.)

Resolutions	Action
Development of the Health Services Infrastructure (Cont.)	
	Argentina, Colombia, and Nicaragua analyzed their national situations as a basis for the formulation of policies.
To PASB	*PASB*
Requests it to support the formulation of policies and implementation of programs and to collaborate in the mobilization of resources.	Supported the countries mentioned above, in the two preceding paragraphs, and also Cuba, Ecuador, Peru, and Venezuela, in the mobilization of resources. Conducted studies and negotiations on structuring a joint purchasing system for Central America and Panama.
Development of Health Promotion and Disease Control Programs	
Infant and young child nutrition (CD29.R21)	
To the Governments	*Governments*
Urges them to: implement the WHO/UNICEF recommendations on infant and young child feeding; adopt legislation on breast-milk substitutes; and promote intersectoral actions for the improvement of infant and young child nutrition, particularly in low-income groups.	The resolution reinforced the actions being taken by most of the countries since 1981. 1984 highlights: in Central America and Panama, the intercountry meetings held to examine the situation and problems, review the practices being followed, and draw up breastfeeding programs; in the Caribbean area, Dominica, Haiti, Saint Lucia, and St. Vincent and the Grenadines examined their situation in this field and prepared programs for 1985. At the end of 1985, three governments were applying the International Code on Marketing of Breast-Milk Substitutes and another 15 had legal instruments of one kind or another on breast-milk substitutes.
To PASB	*PASB*
Requests it to give full support to the governments—including studies, research, and legislation—and to mobilize technical and financial resources.	Provided support as requested in Central America and the Caribbean, especially through INCAP and CFNI, respectively.
Restructuring of INCAP (CD29.R27)	
To PASB	*PASB*
Requests it to continue to administer INCAP and restructure it.	Continued to administer the Institute. Evaluated INCAP's program and functions. As a result of the evaluation, adjustments were made to the Institute's administrative and operational structure and its program was reoriented toward more effective cooperation with the countries of the Isthmus on the basis of their national priorities.
Drug abuse prevention (CD29.R17)	
To the Governments	*Governments*
Urges them to conduct ongoing epidemiological assessments of the drug abuse problem and formulate and implement appropriate programs.	The countries designed a master plan for epidemiological assessments. Colombia and Peru, with UNFDAC support, formulated plans including epidemiological components.
To PASB	*PASB*
Requests it to give priority to this program and obtain additional financial resources.	Conducted negotiations with UNFDAC on drug dependency control and epidemiology in Barbados, Belize, and Jamaica. Supported programs being started or in progress in Barbados, Belize, Brazil, Dominica, Grenada, Haiti, Jamaica, Peru, Trinidad and Tobago, and Venezuela.

Table 16. Action by the Member Governments and PASB in 1984 on resolutions of the XXIX Meeting of the PAHO Directing Council, 1983 (Cont.)

Resolutions	Action
Development of Health Promotion and Disease Control Programs (Cont.)	
Expanded Program on Immunization (EPI) (CD29.R16)	
To the Governments	*Governments*
Urges them to set biennial targets; to use immunization coverage in children under 1 year of age and pregnant women as an indicator; and to use morbidity and mortality data for measles, poliomyelitis, and tetanus as evaluation indicators.	20 Latin American and 7 English-speaking Caribbean countries reviewed their programs and set biennial targets. The countries are gradually using the coverage and evaluation indicators recommended in the resolution. Six countries conducted follow-up evaluations after the first evaluation. Ten have scheduled specific oversight activities.
To PASB	*PASB*
Requests it to study vaccine production capacity and availability and strengthen the EPI Revolving Fund.	Continued to monitor vaccine efficacy and safety. Supported national laboratories of Brazil, Chile, and Mexico in the production of vaccines. Strengthened the EPI Revolving Fund, increasing its capital to US$4.5 million.
Pan American Center for Human Ecology and Health (CD29.R28)	
To the Governments	*Governments*
Requests them to identify and support national institutions to form, with ECO, a Network of Collaborating Centers.	In an initial stage, the countries have sought to identify national programs and units that, in the course of seeking solutions to environmental problems, engaged in activities in the areas of epidemiology and toxicology.
To PASB	*PASB*
Requests it to focus ECO's technical program on the epidemiological and toxicological aspects of the effects of health of chemical pollutants and to complement ECO's work with that of CEPIS.	ECO has given priority to epidemiological and toxicological aspects in special studies, dissemination of information, training, and technical cooperation with governments. ECO and CEPIS have worked together in Peru on a project involving research on water source pollution.
Report on the III Inter-American Meeting, at the Ministerial Level, on Animal Health (CD29.R26)	
To PASB	*PASB*
Requests it to negotiate an agreement between IICA and PAHO on the Pan American Foot-and-Mouth Disease Center.	Signed the IICA/PAHO agreement based on the study of the possibility of a transfer of the Center. Presented a report to the XXX Meeting of the Directing Council in October 1984.
Women in health and development (CD29.R22)	
To the Governments	*Governments and PASB*
Urges them to strengthen national policies for the protection of women; strengthen cancer prevention programs; and enact legislation to guarantee equal rights for women.	Took action on the points in resolution CD29.R22 and PASB prepared a report (Document CD30/8) that was considered by the Directing Council at its XXX Meeting in October 1984.
To PASB	
Requests it to support the Five-Year Plan for Women.	

Table 16. Action by the Member Governments and PASB in 1984 on resolutions of the XXIX Meeting of the PAHO Directing Council, 1983 (Cont.)

Resolutions	Action
Mobilization of Technical and Financial Resources	
PAHO Advisory Committee on Medical Research (ACMR) (CD29.R29)	
To PASB	*PASB*
Requests it to implement the recommendations of the Committee on expanding (ACMR Report, Doc. CD29.14) ACMR's areas of responsibility, research areas and information exchange, and enlarging the cooperative networks.	The Committee broadened its functions and changed its name to Advisory Committee on Health Research (ACHR). Will serve as an instrument for mobilization of national technical resources and development of networks of research centers. New areas of study pertaining to health services and auxiliary personnel will be taken on.
Secretariat Activities—PASB Managerial Strategy	
Functions of the Area Offices of PASB (CD29.R2)	
To PASB	*PASB*
Approves the Director's recommendation that the Area Offices be eliminated with effect from 1 January 1984.	Eliminated the Area Offices effective 1 January 1984. Concurrently initiated a process aimed at administrative strengthening of the PAHO/WHO Country Offices.
Is requested to evaluate the extent and effectiveness of the proposed measures and report to the Directing Council at its XXXI Meeting in 1985.	As of the end of 1984, PASB has entered into new basic agreements with Argentina, Brazil, Guatemala, and Peru; negotiations were nearing completion with Mexico and Venezuela.

Executive Committee and Directing Council (1984)

5.4 Analysis of the discussions and decisions in 1984 reveals that PAHO's Governing Bodies were instrumental in promoting actions directed to the development of specific components of the Region's priority program areas.

5.5 **92nd Meeting of the Executive Committee**. The Committee met in June 1984 to consider an agenda of 23 items—some purely administrative and statutory, others relating to health policies and programs, including technical cooperation. Special importance was given to the studies done by the Subcommittee on Long-Term Planning and Programming on PAHO's Managerial Strategy, the common framework for evaluating Regional Strategies, the economic crisis and its repercussions on the health sector, TCDC, and the Subcommittee's own functions. Other significant Executive Committee actions in 1984 were its recommendations to the XXX Meeting of the Directing Council concerning a provisional draft of the WHO American Region Program Budget for 1986-1987 (in the amount of US$58.6 million), the basis for a PAHO population policy, and the International Program on Chemical Safety.

5.6 The resolutions of the Executive Committee of PAHO calling for specific action by the governments and Secretariat are listed in table 17.

5.7 **XXX Meeting of the Directing Council**. At its XXX Meeting, held in October 1984, the Council considered 22 matters and adopted 18 resolutions. Table 17 lists 10 of the resolutions by priority program area, together with the recommendations to the governments and PAHO. An examination of this analysis reveals the Council's concern over the economic crisis which the countries of the Americas are going through and its repercus-

Table 17. Resolutions of the PAHO Governing Bodies, 1984

Resolutions of the 92nd Meeting of the Executive Committee, 1984	Recommendations to the Governments and to PASB
Common framework and format for evaluating the strategies for health for all by the year 2000 (CE92.R13)	*Governments* Cooperate with PASB in the field tests of the evaluation instrument and use it subsequently to adjust the national information and evaluation processes. *PASB* Adjust the evaluation instrument on the basis of the field tests. Provide support to the countries in improving their processes and in preparing the regional contribution to the Seventh Report on the World Health Situation.
Managerial Strategy for the Optimum Use of PAHO/WHO Resources in Direct Support of Member Countries (CE92.R15)	*Governments* Examine the possibility of redeploying resources in the national budgets to respond to the priorities adopted by them in PAHO's Governing Bodies. *PASB* Examine the "Managerial Strategy" continuously to adapt it to the various factors that influence development and health conditions in the Member Countries.

Resolutions of the XXX Meeting of the Directing Council, 1984	Recommendations to the Governments and to PASB
Development of the Health Services Infrastructure	
The economic crisis in Latin America and the Caribbean and its repercussions on the health sector (CD30.R2)	*Governments* Undertake studies on the impact of new approaches and technologies, including human resources, on health costs. Review the financing of the health sector with the objective of moving toward the fulfillment of the principles of efficacy, efficiency, and quality, and examine the impact of the crisis on health sector resources and on their distribution and use. *PASB* Continue to examine and report to the Governing Bodies on the international economic environment and assist the Member Countries in examining their own situation.
Coordination of social security and public health institutions (CD30.R15)	*Governments* Formulate strategies for the progressive development of linkages to ensure better use of resources for the extension of health care services to population groups lacking access to them. Define the sectoral framework and intersectoral relationships, and examine the possibilities of complementary roles for sectoral institutions in providing health care. Include social security in the planning and implementation of technical cooperation for the health sector. *PASB* Establish a program of technical cooperation with national and international social security agencies.
Operational capacity of the health services (CD30.R18)	*Governments* Introduce managerial and technological innovations designed to make the health services more equitable and effec-

Table 17. Resolutions of the PAHO Governing Bodies, 1984 (Cont.)

Resolutions of the XXX Meeting of the Directing Council, 1984	Recommendations to the Governments and to PASB
Development of the Health Services Infrastructure (Cont.)	
	tive, with emphasis on the groups at greatest risk. Review the financing structure of the services, establish the actual composition of health expenditure, and provide opportunities for community participation in decisions relating to health. *PASB* Foster and support an exchange of views and promote the development of arrangements for increasing the operational capacity of health services.
Health Promotion and Disease Control Programs	
Basis for the definition of the Organization's action policy with respect to population matters (CD30.R8)	*Governments* Strengthen maternal and child health programs taking into account the close relationship to population dynamics problems. Promote multisectoral participation in the formulation and implementation of population policies. Ensure the use of demographic data to identify high-risk and other priority groups. *PASB* Promote the participation of the health sector in formulating population and development policies, and strengthen the Organization's coordination with multilateral, bilateral, and nongovernmental bodies.
Final Report of the Seminar on Uses and Perspectives in Epidemiology (CD30.R16)	*Governments* On the basis of the recommendations of the Seminar (Buenos Aires, November 1983), reinforce the practice of epidemiology, expanding its application to all areas of the sector. Promote coordination of epidemiological services, research, and teaching. *PASB* Develop a program of support for the countries and seek extrabudgetary funds for implementing it.
Health of disabled persons (CD30.R7)	*Governments* Adopt policies and implement programs of comprehensive care, giving special emphasis to the development of family- and community-based rehabilitation technologies. *PASB* Cooperate with the governments in the adoption of such policies and strengthen PAHO's regional program in this field.
International Program on Chemical Safety (IPCS) (CD30.R14)	*Governments* Participate in the International Program on Chemical Safety (IPCS) at both the regional and the national levels, promote chemical safety studies, and foster intersectoral coordination. *PASB* Carry out an evaluation of the status of chemical safety in the Region and formulate proposals for medium-term (1984-1989) programs on the subject.

Table 17. Resolutions of the PAHO Governing Bodies, 1984 (Cont.)

Resolutions of the XXX Meeting of the Directing Council, 1984	Recommendations to the Governments and to PASB
Special Program Areas	
Priority Health Needs in Central America and Panama (CD30.R17)	*Governments* Jointly and severally support the efforts of the countries of Central America, including Belize, and Panama. *PASB* Support the initiative within the limits of available budgetary allotments and of extrabudgetary funds that may be obtained, and seek to establish closer coordination with UNICEF and other technical cooperation agencies.
Women, health, and development (WHD) (CD30.R6)	*Governments* Intensify their efforts to provide more educational opportunities for women, including opportunities for occupational development. Strengthen country WHD focal points and enforce their laws on the protection of women's rights. *PASB* Continue supporting regional WHD activities. Provide special training in key areas so as to enable women to compete on an equal footing for senior positions. Support the Executive Committee's Special Subcommittee on Women.
Mobilization of Technical and Financial Resources	
Guidelines for the promotion of Technical Cooperation Among Developing Countries (TCDC)/Economic Cooperation Among Developing Countries (ECDC) in the health sector with the collaboration of PAHO (CD30.R3)	*Governments* Take legal, financial, administrative, and institutional steps to promote, facilitate, and undertake actions using the mechanisms of TCDC/ECDC. *PASB* Collaborate with Member Countries in TCDC/ECDC actions.

sions on the health sector. In the discussion of the topic of intersectoral linkage and in the relevant resolution (CD30.R18), the Council underscored the urgent need for the governments to combine and make better use of the sector's resources by coordinating the work of ministries of health and social security institutions more effectively. The Council also called for strengthening the operational capacity of health services as a means of increasing their productivity. In reviewing the Organization's health promotion and disease control programs, the Council requested the governments to formulate population policies, utilize epidemiology as a basic tool in the analysis of health problems and services, and consider the growing problem of chemical pollutants.

5.8 The other eight resolutions involve administrative or statutory matters.

Preliminary Draft Program and Budget of the World Health Organization for the Region of the Americas for the Biennium 1986-1987

5.9 In fulfillment of its constitutional responsibilities, at its XXX Meeting, the Directing Council adopted resolution CD30.R13 recommending to the Director-General of WHO a proposed allocation of US$58,076,000 for the American Region Program and Budget for the Biennium 1986-1987 (table 18). The Director-General was further requested to approve a US$484,000 increase in the funds earmarked for the country activities development program under the Office of the Director of PASB.

Table 18. Draft Program and Budget of the World Health Organization for the Region of the Americas for 1986-1987 *(in USA dollars)*

Program	WHO Regular Budget		
	Amount	Total	Percent
Direction, Coordination, and Management		**2,703,500**	**4.7**
Governing Bodies		271,900	.5
Regional committees	271,900		.5
General Program Development and Management		2,431,600	4.2
Executive management	260,200		.4
Director-General's and Regional Director's development program*	207,000		.4
General program development	1,896,200		3.3
External coordination for health and social development	68,200		.1
Health Systems Infrastructure		**24,992,800**	**43.0**
Health Systems Development		7,581,900	13.1
Health situation and trend assessment	3,013,300		5.2
Managerial process for national health development	4,505,300		7.8
Health systems research	63,300		.1
Organization of Health Systems Based on Primary Health Care		11,206,800	19.3
Health Manpower		5,358,900	9.2
Public Information and Education for Health		845,200	1.4
Health Science and Technology—Health Promotion and Care		**11,200,700**	**19.3**
Research Promotion and Development		173,300	.3
General Health Protection and Promotion		2,301,200	4.0
Nutrition	1,856,700		3.2
Oral health	444,500		.8
Protection and Promotion of the Health of Specific Population Groups		1,603,000	2.7
Maternal and child health, including family planning	869,700		1.5
Workers' health	539,500		.9
Health of the elderly	193,800		.3
Protection and Promotion of Mental Health		771,200	1.3
Psychosocial factors in the promotion of health and human development	383,300		.6
Prevention and control of alcohol and drug abuse	231,100		.4
Prevention and treatment of mental and neurological disorders	156,800		.3
Promotion of Environmental Health		5,318,700	9.2
Community water supply and sanitation	4,818,800		8.3
Food safety	499,900		.9
Diagnostic, Therapeutic, and Rehabilitative Technology		1,033,300	1.8
Clinical, laboratory, and radiological technology for health systems based on primary health care	437,900		.8
Drug and vaccine quality, safety, and efficacy	595,400		1.0
Health Science and Technology—Disease Prevention and Control		**11,168,600**	**19.2**
Disease Prevention and Control		11,168,600	19.2
Immunization	1,096,000		1.9
Disease vector control	3,505,900		6.0
Malaria	1,082,300		1.8
Parasitic diseases	329,400		.6
Tropical disease research	112,800		.2
Diarrheal diseases	522,100		.9
Tuberculosis	351,600		.6
Leprosy	291,100		.5
Zoonoses	1,961,000		3.4
Sexually transmitted diseases	36,500		.1
Other communicable diseases			
Prevention and control activities	1,662,200		2.8
Blindness	45,900		.1
Cancer	94,600		.2
Other noncommunicable diseases			
Prevention and control activities	77,200		.1
Program Support		**8,010,400**	**13.8**
Health Information Support		2,801,800	4.8
Support Services		5,208,600	9.0
Personnel	731,600		1.3
General administration and services	2,631,400		4.5
Budget and finance	1,550,200		2.7
Equipment and supplies for Member States	295,400		.5
Total Program Budget		**58,076,000**	**100.0**

*Reserved for country activities.

Part IV
Activities of the PAHO Secretariat

Chapter 6. Managerial Strategy

6.1 In 1983, PAHO adopted the "Managerial Strategy for Optimum Use of PAHO/WHO Resources in Direct Support of Member Countries" for the purpose of ensuring that the limited resources available to PAHO/WHO for cooperation with Member Governments are used as efficiently and effectively as possible. The Executive Committee's Long-Term Planning Subcommittee examined and supported the overall Strategy. Based on the Subcommittee's report, the Executive Committee, at its 92nd meeting, adopted a resolution (CE92.R15) urging the Secretariat to expedite the implementation of the Strategy and adapt it to the countries' changing needs.

Implementation of the Managerial Strategy

6.2 The basic principles of the Strategy are that a country is both the subject and object of PAHO/WHO cooperation, that the Member Governments participate in the setting of priorities and the formulation of technical cooperation programs, and that the mobilization of national and international resources to meet requirements in priority areas is a continuing responsibility of the Organization and the Secretariat. Within this framework, adjustments and changes were made in 1984 to strengthen the managerial and operational capacity of the Country Offices. Thus, the former Area Offices were replaced by Country Offices, and a "Plan for Decentralized Administrative Development" was launched. This Plan includes, in the first stage, a review of administrative systems at the various levels of the Pan American Sanitary Bureau (PASB), an analysis of the operating capacity of PAHO/WHO's Country Offices and Centers, and feasibility studies on potential areas for decentralizing Headquarters functions to the field. These analyses served as a basis for the design of modules for managing and monitoring technical cooperation programs (AMPES) and the budgeting, financial, and accounting subsystems; decentralized administration of personnel, travel, fellowships, seminars, and courses; and information systems for monitoring programs and budget performance. A start was made on utilizing microcomputers to facilitate these functions. The process was under way at the PAHO/WHO Country Offices in Argentina, Bolivia, Guatemala, and Panama and at PANAFTOSA, CEPANZO, CAREC, CEPIS, and INCAP. In addition, work proceeded on the organization of documentation and information centers in Bolivia, Brazil, Chile, Cuba, Dominican Republic, Guatemala, Jamaica, Mexico, Nicaragua, Panama, and Paraguay.

6.3 The Organization intensified its pro-

gram to train field personnel, especially Country Representatives, for the delegated authority and new responsibilities assigned to them as a result of the review of their Offices' operating capacity.

6.4 With regard to the Strategy's basic principle of active participation by Member Countries in the conduct of the Organization, the record for 1984 shows that the governments played a far wider role than ever before in determining the type of cooperation to be provided by PAHO/WHO at national level. Joint Government/PAHO/WHO reviews of policies and programs continued to go forward in a number of countries, resulting in the definition of national priorities and requirements for PAHO/WHO cooperation which in addition served as a basis for developing PAHO's Program and Budget for 1986-1987.

6.5 Regarding the mobilization of national and international resources, the Strategy's third basic principle, the Secretariat's efforts were directed to strengthening national and institutional capacities and to the optimum use of resources. Examples of this process include utilization of the experience and technical skills of national officials in their own country and, by means of TCDC, in other countries as well, together with the development of networks of national collaborating centers; these efforts are examined in chapter 3 of the present *Report*. Moreover, PAHO's extensive contacts and joint undertakings with donor agencies, bilateral and multilateral, provide better prospects for the flow of resources to governments and an increase in extrabudgetary funds for PAHO/WHO. Perhaps the most significant development in this respect was the Secretariat's promotion and support of the joint action undertaken by Central America and Panama in 1984 to mobilize national capacities and wills and coordinate them so as to arrive at a joint analysis of priority health requirements. This led to the formulation of national and subregional project proposals requiring complementary financing from outside sources. By the end of 1984, some of this funding had been obtained. Details on this initiative are found in chapter 2 of this *Report*.

American Region Programming and Evaluation System (AMPES)

6.6 The system was adjusted for consistency with the new budgetary classification. In keeping with the basic principles of the Managerial Strategy, procedures were further simplified to make AMPES an efficient and effective managerial tool for PAHO/WHO technical programming and optimal resource mobilization. AMPES is now in the process of becoming the central management mechanism for short- and medium-term programming of technical cooperation. Once the System has been consolidated, the methodology for monitoring and evaluating PAHO/WHO technical cooperation will be gradually incorporated into it.

Chapter 7. Support Services

7.1 The Organization's support service units are grouped in two functional areas. The first, basically technical, includes the Publications Program, Translations, the PASB Information Systems, the Public Information Office, and the Office of the Legal Counsel. The second area is essentially administrative and includes the Offices of General and Conference Services, Personnel, and Procurement.

Technical Support

Publications

7.2 The publications program featured significant changes during the year. In addition to the program's traditional objectives, for the first time it targeted direct technical cooperation with the countries in editorial matters. A General Committee on PAHO Publications Policy was established and met regularly throughout the year. The program also was restructured and the Organization's main editorial units were centralized at Headquarters, resulting in the transfer of the Publications Service (SEPU) from Mexico City to Headquarters. The agreement with the American Public Health Association regarding PAHO's translation and publication into Spanish and Portuguese of *Control of Communicable Diseases in Man* continued to bear fruit. Steps were taken to assure closer collaboration between the PAHO publications program and the Publications Service of the Spanish Ministry of Health. Close coordination continued between PAHO and WHO in activities related to health and biomedical publications, information, and documentation. PAHO hosted the annual meeting of the PAHO/WHO Publications Policy Coordination Committee, which included representation of the EURO, SEARO, and EMRO publications programs.

7.3 **Scientific publications**. Despite a severe shortage of staff, the Editorial Service issued 35 Scientific Publications during 1984 (see table 19), an unprecedented number for the program. The Editorial Service provided direct support to 14 of PAHO's technical programs by means of these publications, which covered the subjects of health technology development, health services delivery, health systems personnel, health systems development, epidemiology, health of adults, environmental health, maternal and child health, food and nutrition, tropical diseases, veterinary public health, emergency preparedness and disaster relief, health statistics, and the women, health, and development program. Each of these 35 publications represented an important contribution to the promotion and exchange of health and biomedical informa-

Table 19. Publications issued by the PAHO Editorial Service in 1984

Serial No.	Title
	Scientific Publications
438	Suministros médicos con posterioridad a los desastres naturales
442	Controle das doencas transmissíveis no homem, 13a. ed.
445	Terapia de rehidratación oral. Una bibliografía anotada
447	Epilepsia—manual para trabalhadores de saúde
452	Diagnostic of Animal Health in the Americas
452	Diagnóstico de la salud animal en las Américas
456	Compêndio codificado da classificação de tumores
457	Pautas para adiestrar en nutrición a trabajadores de salud en la comunidad
458	Trastornos depresivos en diferentes culturas
459	Experiencia nacional en el empleo de trabajadores comunitarios en salud
460	Prevention and Control of Genetic Diseases and Congenital Defects
460	Prevención y control de las enfermedades genéticas y los defectos genéticos
460	Prevenção e controle de enfermidades genéticas e os defeitos congênitos
461	Salud materno-infantil en las Américas: hechos y tendencias
462	Policies for the Production and Marketing of Essential Drugs: Technical Discussions of the XXIX Meeting of the PAHO Directing Council, 1983
462	Políticas de producción y comercialización de medicamentos esenciales: Discusiones Técnicas de la XXIX Reunión del Consejo Directivo de la OPS, 1983
463	Certificados de vacunación requeridos para los viajes internacionales y advertencias a los viajeros, 1984
464	Women, Health and Development in the Americas. An Annotated Bibliography
464	La mujer, la salud y el desarrollo en las Américas. Una bibliografía anotada
465	Quimioterapia da lepra para programas de controle
466	Criterios de salud ambiental 14—Radiación ultravioleta
467	Criterios de salud ambiental 15—Estaño y compuestos orgánicos de estaño
468	Criterios de salud ambiental 16—Radiofrecuencias y microondas
469	Seguridad en la calidad en radiología de diagnóstico
470	Seguridad en la calidad en medicina nuclear
471	Epidemiology and Control of Falciparum Malaria in the Americas
471	Epidemiología y control de malaria causada por *Plasmodium falciparum* en las Américas
472	Inmunizaciones: Información para la acción
473	Community Participation in Health and Development in the Americas
473	La participación de la comunidad en la salud y el desarrollo en las Américas
474	Development and Implementation of Drug Formularies
474	Elaboración y utilización de formularios de medicamentos
475	Las drogas, el conductor y la seguridad en el tránsito
476	III Inter-American Meeting on Animal Health at the Ministerial Level
476	III Reunión Interamericana de Salud Animal al Nivel Ministerial
	Official Documents
192	Final Report of the PAHO Directing Council, XXIX Meeting/Informe Final del Consejo Directivo de la OPS, XXIX Reunión
193	Précis Minutes of the XXIX Meeting of the Directing Council of PAHO/Actas Resumidas de la XXIX Reunión del Consejo Directivo de la OPS
195	Précis Minutes and Final Report of the 91st and 92nd Executive Committee Meetings of PAHO/Actas Resumidas de la 91ª y 92ª Reuniones del Comité Ejecutivo de la OPS
	Periodicals
	Boletín de la Organización Panamericana de la Salud (12 numbers)
	Bulletin of the Pan American Health Organization (4 numbers)
	Educación médica y salud (4 numbers)
	Epidemiological Bulletin (6 numbers)
	Boletín Epidemiológico (6 numbers)

tion in the Americas. The Organization brought together special expert groups whose deliberations resulted in numerous original publications, included in table 19.

7.4 **Official documents**. In 1984 three official documents were issued: *Final Report of the XXIX Meeting of the PAHO Directing Council* (bilingual, English and Spanish editions), *Précis Minutes of the XXIX Meeting of the PAHO Directing Council*, and *Précis Minutes and Final Report of the 91st and 92nd Executive Committee Meetings of PAHO* (multilingual).

7.5 **Other publications** are listed in table 19.

7.6 **Periodicals**. Changes affecting the overall publications program likewise affected its various aspects. The production of the *Boletín de la Oficina Sanitaria Panamericana*,

which issued 12 monthly numbers as usual, was transferred towards year end from Mexico City to Washington, D.C. The *Bulletin of the Pan American Health Organization* was the subject of both a redesign and a major promotional campaign aimed at enhancing awareness of PAHO among English-speaking readers. *Educación médica y salud* issued its four regular numbers; and the *Epidemiological Bulletin/Boletín epidemiológico* published six issues in both English and Spanish.

7.7 **Distribution and sales**. During 1984, PAHO presented its publications in 11 national and international conferences. The following promotional projects were implemented: improvement of the complimentary distribution of the Scientific Publications by offering recipients a choice of subjects, expansion of booksellers, and preparation of lists for shipment of promotional copies of the Scientific Publications. A review was carried out of paid subscriptions to the *Boletín de la Oficina Sanitaria Panamericana* with the offer of renewal. Another review was done of complimentary lists of subscribers to the *Boletín* and *Educación médica y salud*. As a result of the promotional efforts, during 1984, the distribution and sales of PAHO publications exceeded 1983 figures by 68%. The Revolving Sales Fund for Publications collected US$136,302 and totaled US$337,496 at the end of 1984.

7.8 **Visual aids**. The visual aids program seeks to identify national technology centers and promote joint PAHO/WHO activities with them. The filmstrip on infant diarrheal diseases was completed and distributed to all maternal and child care centers. Three new sets of slides with descriptive narratives were issued on the following subjects: "Hand-Compression Sprayer," vector control in the wake of a natural disaster (English and Spanish), and "The Natural History, Epidemiology, and Control of Chagas' Disease." The Spanish version of the latter is being prepared under the title *La historia natural, epidemiología y control de Chagas*. The following materials were distributed in response to Member Country requests: 1,900 copies of filmstrips, 271 sets of slides with a printed narrative, 1,631 color graphs, and 4,450 half-frame mounts for converting filmstrips to slides.

Translations

7.9 Translation services were provided for technical units and programs. The material translated included operational and administrative reports, working papers for meetings of the Governing Bodies and other groups convened by the Organization, documents issued by the Office of the Director, technical articles, and regulations. In addition, translation services were provided at meetings of the Governing Bodies and PAHO/WHO-sponsored technical conferences and seminars. More than 30,000 pages were translated into English, Spanish, Portuguese, and French.

7.10 **Machine translation**. SPANAM completed 5 years of service translating Spanish into English for users at PAHO Headquarters, centers in the field, and WHO/Geneva. At the same time, ENGSPAN, a new system for translating from English into Spanish, began to produce large-scale output in two major pilot projects. Both systems are wholly developed and owned by PAHO.

7.11 At year's end, ENGSPAN had produced a total of 641 pages for publication. SPANAM, in the meantime, continued to prove its utility and cost-effectiveness, producing a total of 3,152 pages under 267 assignments during 1984.

7.12 The SPANAM and ENGSPAN dictionaries expanded in the course of interaction with the terminology function carried out by the same office. At year's end, SPANAM had a database of 61,240 terms and ENGSPAN had 43,825.

PASB Information Systems

7.13 The office in charge of these systems has been structured into four functional areas:

user support, computer systems, systems development, and special projects. Accomplishments in 1984 included the following: a smooth transition was made to the new structure; the several alternatives in hardware and systems software were studied for the future operating environments; development of a wide range of standards was started including documentation standards; a comprehensive training plan for technicians and end users was prepared and the initial course offerings were presented; the large number of requests for programming support was organized and steps were initiated which will lead to a reduction of the backlog in this area; and all basic software installed in PAHO's computational equipment was updated. In addition, a list of approved products was developed to be used as the basis for purchasing microcomputer equipment and a microcomputer laboratory was created for testing new products, developing applications, and training users.

Public Information

7.14 In 1984, a bimonthly newsletter, *PAHO in Action*, began publication with the objective of keeping employees in the field and at Headquarters informed of PAHO's activities. PAHO/WHO continued to respond to growing numbers of inquiries, from both the press and the public, about the Organization and its programs. To help increase public awareness of PAHO/WHO, the Office prepared slide shows and videotapes (in Spanish and English) describing the Organization and its activities and new pamphlets and brochures describing the Organization and its programs were designed and printed in both languages. The Office coordinated the design and publication of several special booklets using color photographs, including one on the Central American "Bridge for Peace" health plan and another on children's health in the Americas issued for World Health Day. Material on World Health Day, including articles, black-and-white photographs, and color slides, was distributed throughout Latin America and the Caribbean. A collaborative effort between PAHO and the American Association for World Health generated several hundred observances of World Health Day throughout the United States of America.

Legal Matters

7.15 The Organization continued to provide advisory services for the solution of specific problems at the request of Member Governments. Chile received assistance to solving a problem encountered in the purchase of fluoride for a dental caries prevention program, and Guatemala in defining the bases for the relationship among its Government, INCAP, and PAHO/WHO. Two studies were subsequently begun in this field—one on legislation governing production and marketing of drugs, and the other on medical equipment technology.

7.16 In the course of the year, the Organization signed seven Basic Agreements on Privileges and Immunities—with Argentina, Belize, Guyana, Haiti, Mexico, Paraguay, and Peru—along with an addendum to the Basic Agreement with Brazil, a Basic Technical Cooperation Agreement with Mexico, and nine General Agreements for Cooperation with other institutions. In addition, PAHO entered into five agreements for the conduct of environmental health programs with Bolivia, Colombia (2), Costa Rica, and the Dominican Republic; an agreement with Costa Rica on maintenance of health facilities; and an agreement with Peru on educational technology in health.

7.17 Finally, 12 interagency agreements were signed with UNDP (4), UNICEF (3), IDB (1), and GTZ (4) for joint technical cooperation programs in Colombia, Cuba, the Central American countries and Panama, Dominican Republic, Peru, Trinidad and Tobago, and two regional programs.

7.18 A reference center on health legislation and the legal aspects of health was established in PAHO's Legal Affairs Unit. The Unit

provided support services to the Director, technical units, PAHO/WHO Country Offices, and the Regional Centers in connection with internal legal matters.

Administrative Support

General and Conference Services

7.19 **General services**. To implement the decision to eliminate the Area Offices, the PAHO/WHO Country Representatives of Argentina, Guatemala, Mexico, Peru, and Venezuela developed proposals for discussion with the governments regarding operating costs and office space for the new Country Offices. At the same time, studies were begun to determine the future use of the physical facilities of the former Area buildings, all of which, except for the Mexico office, are owned by PAHO. As instructed by the PAHO Executive Committee, an agreement was signed with a Washington developer which will allow PAHO to proceed with the necessary arrangements for the construction of the addition to the Headquarters office building on the Governor Shepherd and adjacent sites. The next steps for PAHO will be to review the proposed architectural plan and to develop a comprehensive study of space and functional requirements for the Washington office.

7.20 **Conference services**. Conference personnel participated in the organization of 410 meetings held at Headquarters or throughout the Hemisphere which were convoked by the Organization or the Member Countries. Major efforts were focused on the XXX Meeting of the Directing Council, and the 92nd, 93rd, and 94th Meetings of the Executive Committee. The Word Processing Unit offered support for meetings as well as for the technical departments at Headquarters.

Personnel

7.21 During the period under review, several major activities were carried out in the areas of post classification, staffing, and staff development and training, in order to support the policy of administrative decentralization, the conversion from Area to PAHO/WHO Country Offices, and strengthening of overall managerial capabilities at Headquarters and in the field.

7.22 The Master Standard of the International Civil Service Commission was formally adopted for the grading of posts in the professional and higher categories. Implementation progressed with a series of briefings for professional staff at the executive and management-supervisory levels, as well as for all other professional staff.

7.23 Work was completed for the development of an orientation program for professional staff at senior levels, designed to facilitate the integration of newly recruited staff into the Organization and their subsequent reorientation to the changing needs of the Organization.

7.24 The use of special service agreements was expanded for hiring national experts on PAHO/WHO projects in order to maximize the scope of cooperation available from national resources. The term "temporary advisers" was extended to include those persons recruited under the concept of Technical Cooperation Among Developing Countries.

7.25 Equally important was the planned institution of an integrated approach to the classification, recruitment, training and development, and evaluation of general services staff at Headquarters. The structure, now in preparation, has as its ultimate aim staffing of the Secretariat that fully meets the basic criteria of efficency, competence, and integrity.

7.26 Likewise under study is the Organization's performance appraisal policy, the need for revising the existing arrangements, and development of a proposed design.

7.27 Staff strength at the end of 1984 was 1,165 (and 41 short-term employees). Of these, 57% were assigned to the field. In 1984, PAHO's permanent staff decreased by

4%, continuing the trend observed in the previous year. The number of consultants and temporary advisers contracted was 1,570 in 1984, as compared to 1,632 experts in 1983. The proportion of female staff in the professional and higher categories remained stable at 22% throughout the Organization.

Procurement

7.28 The Organization purchased supplies, equipment, and services to support PAHO Headquarters, PAHO/WHO projects, and Member Countries under the Reimbursable Procurement Program and the Expanded Program on Immunization. Total procurement by the Organization for Member Countries was US$3,796,000 for the Expanded Program on Immunization and US$6,433,500 for other programs. These other programs included US$1.7 million for drug purchases. In addition to responding to increasing numbers of requests for drug procurement, the Procurement Office provided drug price and source information to Member Countries. Purchases for goods and services for PAHO/WHO-funded projects totaled US$11,340,500.

Part V
Countries' Activities with PAHO/WHO Cooperation

Chapter 8. Summary of Each Country's Activities with PAHO/WHO Cooperation

8.1 Based on the information received from the countries on the activities carried out in 1984, within the joint programming Government/PAHO/WHO, individual country summaries have been elaborated which appear in this chapter. In these summaries, emphasis is placed on the efforts of each Member Government to solve its priority problems, in accordance with the national and regional objectives.

8.2 Furthermore, basic information is being provided regarding the state of health and the socioeconomic situation, with the aim of developing a simplified country profile.

8.3 Also, some substantive data regarding resource mobilization is presented in this chapter. This information is not exhaustive, it needs more in-depth verification and only tries to show the extent of the external financial resources that the Government has negotiated with donor or lending institutions.

Antigua and Barbuda

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	78,000
Percentage of urban population (as nationally defined)	1980	32.6
Birth rate/1,000 inhabitants	1977	20.4
Mortality rate/1,000 inhabitants	...	...
State of Health Indicators		
Life expectancy at birth	1983	70.0
Infant mortality/1,000 live births	1983	11.1
Maternal deaths/1,000 live births	1983	0.2
Death rate 1-4 years/1,000 children	...	0.1
Percentage of newborn with a weight of less than 2,500 grams	1982	8.2
Availability of calories per capita/day	1979-81	1,979
Availability of proteins (grams) per capita/day	1979-81	55.0
Percentage of deaths due to:		
infectious and parasitic diseases	1978	2.0
tumors	1978	16.0
heart diseases	1978	17.6
motor vehicle traffic accidents	1978	—

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	100.0
—poliomyelitis	1983	100.0
—measles	...	...
—tuberculosis	...	...
Percentage of population served with potable water	1983	95.0
Percentage of population served by sanitary waste disposal	1983	100.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1984	6.9
Human Resource Indicators		
Physicians per 10,000 inhabitants	1984	4.5
Nurses per 10,000 inhabitants	1984	16.0
Nursing auxiliaries per 10,000 inhabitants	1984	19.0
Health Expenditure		
Health Expenditure per capita (in US$)	1983	184
Total health expenditure as a percentage of the GDP	1983	6.2
Percentage of the National Budget dedicated to health	1983	11.8

... Data not available.
— None.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.4 A national health policy was approved that reflects Antigua and Barbuda's acceptance of the primary health care strategy as the principal means to achieve health for all by the year 2000. A health planner was appointed to the Ministry of Health's headquarters' staff. The Health Planning Committee, organized in 1983, began functioning in 1984 and is expected to present a health plan early in 1985.

8.5 In human resources, senior nurses were oriented on Caribbean standards of nursing care, permitting the development of guidelines for personnel performance appraisal. A community health nursing course for public health nurses and inservice education in management for ward sisters at Holberton Hospital were instituted and are continuing. The Organization supported and hosted two subregional workshops in Antigua, one on community participation and the other on health systems development.

8.6 For most of the year, the problems of drought dominated the environmental health program; accompanying concerns about water quality emerged during the months of wa-

ter importation, storage, and vehicular transportation. The Government considered a PAHO/WHO sewerage system proposal for St. John's.

Health promotion and disease control

8.7 In collaboration with the Caribbean Food and Nutrition Institute (CFNI), the National Nutrition Committee prepared a food and nutritional policy for the country. Antigua continues to promote breastfeeding and improving management of dietary procedures for diabetes, hypertension, and obesity.

8.8 A new pediatric ward at the Holberton Hospital is almost completed; it promises to enhance the quality and range of secondary care in Antigua. The Maternal and Child Health Committee remains active, and integration with family planning and primary health care is progressing satisfactorily. A new project proposal directed to family life education and family planning specifically for adolescents has been approved by UNFPA for funding over a 3-year period. PAHO/WHO has provided administrative and technical support to new UNFPA-funded projects.

8.9 The Government continues to stress surveillance and control of communicable diseases. The implementation of the Expanded Program on Immunization (EPI) has been very satisfactory. The Caribbean Epidemiology Center (CAREC) is assisting the Government in developing and strengthening the country's epidemiological surveillance and is providing opportunities for health personnel to participate in workshops and other training activities. A national workshop on primary health care and surveillance was developed. Antigua and Barbuda received assistance from the Pan Caribbean Disaster Preparedness Health Team, which is stationed in Antigua.

Mobilization of Technical and Financial Resources

8.10 **International cooperation**: *WHO/IPPF* gave US$53,000 for a population and development project (1983-1986); *WFP/FAO*, US$79,000 for supplemental feeding to vulnerable groups (October 1984-December 1986); and *UNFPA*, US$14,500 for family life education-family planning services for adolescents (1984).

8.11 **Bilateral cooperation**: *USAID* provided US$25,000 for the construction of a hospital pediatric unit, *USAID/Caribbean Development Bank* gave US$78,000 for a basic needs trust fund; the *Republic of Korea* and *Venezuela* gave US$87,000 and US$30,000 for garbage collectors, respectively.

8.12 **Foundations**: the *Mellon Foundation* provided US$40,000 for a laboratory and mortuary.

Cooperation Provided by PAHO/WHO

8.13 **Professional staff assigned to the country**: 2 full-time consultants, one in nursing and the other in statistics and information. A regional adviser and the Pan Caribbean Disaster Preparedness Health Team are based in the country. Most cooperation is provided by the Organization's staff in other parts of the Caribbean and from Headquarters, CAREC, CFNI, and other Centers of the Organization. Consultants were provided to collaborate with the Government in its efforts in health systems development, disaster preparedness, disease control, environmental health services, nutrition, vector control, maternal and child health, and veterinary public health.

8.14 **Fellowships**: 7, in: statistics, primary health care, food analysis, alcoholism, hepatitis, and laboratory technology. PAHO/WHO funding was US$40,982. The European Economic Community (EEC)-Caribbean Community (CARICOM) funds

supported additional training for three nationals in ward management (Barbados), community nutrition (Barbados), and laboratory management.

General Appraisal and Future Trends

8.15 In response to the hardships suffered because of the long drought, the Government has proposed increased development of the water supply (with external assistance). Attention also will be paid to environmental health operations at the field level, utilizing primary health care strategies when feasible.

8.16 Following up on the introduction of family life education within the Teacher's Training College and strengthening nursing midwifery and neonatal care are important program activities which have been given priority in 1984.

8.17 With the support of the Organization, a thorough analysis of the health situation will be conducted early in 1985 as the starting point for the managerial process. The presence of resident PAHO staff members and the establishment of a country PAHO/WHO office will ensure the continuity of PAHO/WHO's cooperation to the country, mainly in the areas of planning and information.

Argentina

Basic Data

Demographic Indicators	YEAR	NUMBER
Estimated population (in thousands)	1984	30,097,000
Percentage of urban population (as nationally defined)	1980	83.0
Birth rate/1,000 inhabitants	1982	23.4
Mortality rate/1,000 inhabitants	1981	8.4
State of Health Indicators		
Life expectancy at birth	1980-85	69.7[a]
Infant mortality/1,000 live births	1982	30.1
Maternal deaths/1,000 live births	1981	0.7
Death rate 1-4 years/1,000 children	1981	1.5
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	3,380
Availability of proteins (grams) per capita/day	1979-81	112.7
Percentage of deaths due to:		
infectious and parasitic diseases	1980	4.0
tumors	1980	16.7
heart diseases	1980	45.1
motor vehicle traffic accidents	1980	1.5

Coverage Indicators	YEAR	NUMBER
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	62.0
—poliomyelitis	1983	91.0
—measles	1983	60.0
—tuberculosis	1983	61.0
Percentage of population served with potable water	1980	69.0[b]
Percentage of population served by sanitary waste disposal	1980	79.2
Consultations per inhabitant per year	1980	6.2[c]
Number of discharges per 100 inhabitants	1980	6.6[c]
Number of beds per 1,000 inhabitants	1980	5.4
Human Resource Indicators		
Physicians per 10,000 inhabitants	1980	24.8[d]
Nurses per 10,000 inhabitants	1980	5.8[d]
Nursing auxiliaries per 10,000 inhabitants	1980	8.9[d]
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	1983	US$2,972
Percentage of the National Budget dedicated to health	1984	3.0

... Data not available.
[a] Age for men, 65.4; for women, 72.1. [b] Urban population; rural population, 17%. [c] Metropolitan area of Buenos Aires. [d] Does not include personnel working only in private practice.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.18 In 1984, the Government adopted a general health policy under which the overall responsibility for health sector activities—including the integration of health programs with other social priorities such as nutrition, housing, community development, and coping with emergency situations—was centralized in the Ministry of Health and Social Action. To implement this policy, the Ministry was restructured, priority work areas were defined, and closer coordination with the provinces and territories was sought through the Federal Health Council (CONFESA). In an effort to bring the public and private subsectors and social agencies into a unified system, legislation was drafted providing for the creation of a system of National Health Insurance based on linking the installed capacity of social agencies with that of private sector and prepayment systems with the aim of increasing the coverage of services. As part of this scheme, a survey of operating capacity, arranged by politico-administrative jurisdiction and by area of knowledge, is being made for the purpose of defining the needs for human

resources and for technical cooperation between the central and provincial governments and among provinces. In addition, efforts are being made to obtain better coordination among the information system of the Department of Health of the Province of Buenos Aires, the Municipal Government of Buenos Aires, and the National Institute of Social Work. In administrative reform and institutional development, a joint training program involving the participation of the Department of Health and the University of Buenos Aires (School of Public Health and Faculty of Economics) was formulated. A survey to obtain information on health sector financing and expenditures—an essential input for the implementation of the national health plan and the national health insurance proposal—was prepared and was being implemented.

8.19 In human resources, emphasis was placed on developing provincial courses and seminars for existing staff. The deans of medicine and dentistry of nine universities and directors of schools of nursing examined their institutions' curriculum structures, teaching-learning process, and instrumental resources for the purpose of adjusting them to the universities' new approach to academic mechanisms and administrative structures. Activities under the textbook program increased as a result of a wider dissemination of its purposes and improved accessibility by the program's intended beneficiaries.

8.20 The following activities stand out in environmental health: development of wastewater treatment technology (Central University, National Water Supply Service, and CEPIS); re-equipping for occupational hygiene and radiation health programs; and presentation of courses on basic rural sanitation, urban sanitation, solid waste management, and radiation health.

Health promotion and disease control

8.21 Following approved policies and priorities and directing emphasis to groups regarded as vulnerable, the national, provincial, and municipal health authorities intensified the services within programs for maternal and child health, control of diarrheal and acute respiratory diseases, the Expanded Program on Immunization (EPI), cardiovascular problems, and the health of workers and the elderly. A course on maternal and child health was conducted, and a survey on delivery of services to that group was initiated.

8.22 The National Congress enacted legislation establishing a National Food Plan (PAN) and a Drug Assistance Fund (FAM) based on proposals developed by the Ministry of Health and Social Action and approved by the Executive Branch. These instruments represent an attempt to ameliorate two pressing deficiency problems—food and drugs.

8.23 In epidemiology, a working group headed by the Ministry of Health and Social Action and the School of Public Health was established to conduct surveillance operations as well as service, teaching, and research programs. In the area of noncommunicable diseases, studies continued on arterial hypertension, with emphasis on the prevalence of cardiovascular risk factors.

8.24 Work in the laboratory utilization field included a survey of the institutes attached to the Under-Secretariat for Health Programs and the food control program, carried out with the cooperation of CEPANZO.

Mobilization of Technical and Financial Resources

8.25 **International cooperation:** *UNDP* provided US$22,000 for development of a vaccine against hemorrhagic fever, and *IDB* allocated US$7 million for control of leprosy, Chagas' disease, and malaria in rural zones.

8.26 **Bilateral cooperation**: The *Governments of Germany, Italy, Japan*, and the

Netherlands supplied fellowships for the health sector, with no specific amount of funds allocated. Approximately 208 private foundations invest nearly US$2 million in disease prevention and control and medical care activities.

8.27 **Foundations**: The *W. K. Kellogg Foundation* donated US$300,000 for the development of physical resources, and US$50,000 for a maternal and child health program.

Cooperation Provided by PAHO/WHO

8.28 **Professional staff assigned to the country**: 4, the PAHO/WHO Country Representative and advisers in health systems, laboratory services, and sanitary engineering.

8.29 **Regional and intercountry advisers**: 3, for a total of 510 days, in: epidemiology, nursing, and information systems; 54 regional, intercountry, and Center advisers, for 192 days, in: epidemiology, nursing, information systems, rehabilitation, maternal and child health, cancer, sanitary engineering, viral and bacterial respiratory infections, medical education, planning, and drugs.

8.30 **Short-term consultants (STC):** 134, for a total of 694 days, in: nursing services, mental health, medical care, health systems, nutrition, maternal and child health, drugs, epidemiology, chronic diseases, the Expanded Program on Immunization, pharmacology, laboratory services, health research, sanitary engineering, hospital architecture, occupational therapy, information systems, health legislation, neonatology, dentistry, administration of health services, and animal health.

8.31 **Fellowships**: 47, for a total of 33 months, for studies abroad in: maternal and child health, cancer, epidemiology, medical library science, laboratories, veterinary medicine, and physical medicine. Total cost was US$46,775. In addition, 88 fellows from other countries came to Argentina to pursue studies in various health-related fields.

8.32 **Courses, seminars, and workshops**: 34 workshops and seminars, with 476 participants, on information systems, planning, primary care, dentistry, epidemiology, occupational health, sanitary engineering, mental health, human communications, maternal and child health, and chronic diseases; and 10 courses on tuberculosis bacteriology, environmental sanitation, planning, administration of health services, and information systems. PAHO/WHO's financial participation in these activities came to US$183,747.

General Appraisal and Future Trends

8.33 In the course of the year, the Government gave special priority to health programs addressed to the neediest segments of the population. Regrettably, economic constraints prevented a more effective expression of this political decision.

8.34 The strengthening of the Ministry of Health and Social Action provides a favorable opportunity to improve coordination and integration within the health system in such a way as to ensure effective sector-wide leadership. While the Government has little leeway to reallocate funds in line with priorities, the social compact mechanism and the National Health Insurance proposal may be helpful in overcoming this constraint. The strengthening of the Ministry of Health and Social Action is expected to be completed fairly soon, enabling the Ministry to assume its function of guiding national health policy. The National Health Insurance proposal should help to produce new and positive changes. The formulation of national short- and medium-term policies (for the constitutional term of the Government), based on the electoral platform, as well as the

formulation and implementation of the relevant programs, will confer consistency and credibility onto the health sector.

8.35 The demand for technical cooperation will increase considerably, as already evidenced by developments in the latter months of 1984. Advisory services and cooperation in training, research, and the distribution and production of instructional materials will center around the formulation of projects and the conducting of studies.

Bahamas

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	226,000
Percentage of urban population (as nationally defined)	1980	75.3
Birth rate/1,000 inhabitants	1982	24.3
Mortality rate/1,000 inhabitants	1982	5.5
State of Health Indicators		
Life expectancy at birth	1980	69.3
Infant mortality/1,000 live births	1980	27.7
Maternal deaths/1,000 live births	1982	0.8
Death rate 1-4 years/1,000 children	1982	1.0
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,200
Availability of proteins (grams) per capita/day	1979-81	62.2
Percentage of deaths due to:		
infectious and parasitic diseases	1982	1.6
tumors	1982	20.1
heart diseases	1982	15.9
motor vehicle traffic accidents	1982	3.7

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	65.0
—poliomyelitis	1983	65.0
—measles	1983	67.0
—tuberculosis	...	...
Percentage of population served with potable water	...	...
Percentage of population served by sanitary waste disposal	...	...
Consultations per inhabitant per year	1983	2.5[a]
Number of discharges per 100 inhabitants	1983	11.6
Number of beds per 1,000 inhabitants	1983	4.3
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	9.8
Nurses per 10,000 inhabitants	1983	42.9
Nursing auxiliaries per 10,000 inhabitants	1983	7.9
Health Expenditure		
Health Expenditure per capita (in US$)	1982	207
Total health expenditure as a percentage of the GDP	1982	5.9
Percentage of the National Budget dedicated to health	1982	14.7

... Data not available.
[a] Includes primary health and general practice, accident and emergency, and specialized clinics.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.36 Priorities in 1984 included developing and strengthening the administrative structure in order to function effectively within a framework of evolving policy adjustments, including the decentralization of the health care delivery system. The health policy document is being revised as a prerequisite to the development of a written health plan. Concomitantly, the health information system is being strengthened. Intersectoral deliberations have commenced to determine alternative methods of health financing; one possibility being considered is some form of health insurance, perhaps a national insurance.

8.37 In human resources, training of health personnel—through fellowships, attendance at seminars, workshops abroad, and in-country training—continued apace with both national and PAHO/WHO funding. Significant areas of training included biostatistics, dental public health, nutrition, disaster management, oncology, environmental health, health systems development and management (including supply management), and control of communicable diseases.

8.38 In environmental health, the disposal and management of solid waste deteriorated to unsatisfactory levels during this reporting period. This has been attributed to staff turnover, problems with equipment and staff expertise, and the increased generation of solid waste resulting from an upturn in tourism. The Organization provided prompt short-term assistance. The Government has also moved rapidly to upgrade equipment and identify personnel for further training. With the return of a qualified government analyst, there was a significant renewal of activities in occupational health. It is expected this will contribute to the upgrading of the services of the government laboratory, as well as stimulate renewed input from the Pan American Center for Human Ecology and Health (ECO) in Mexico.

Health promotion and disease control

8.39 Increased emphasis is being given to the development of a nutrition policy, starting with the establishment of a nutrition surveillance system with technical input from CFNI. Training in communicable disease control continues to be an important and effective activity in PAHO/WHO's overall program of technical cooperation. Training is received through numerous courses and workshops at the Trinidad headquarters of CAREC, as well as incountry training.

8.40 A nation-wide problem of drug abuse surfaced in 1984, resulting in the creation of a national level task force on drug abuse.

Cooperation Provided by PAHO/WHO

8.41 **Professional staff assigned to the country**: 2, a PAHO/WHO Program Coordinator and a statistician.

8.42 **Regional and intercountry advisers**: In addition to the resident PAHO/WHO staff members, other advisers located in various parts of the Caribbean, as well as from Headquarters, CAREC, and CFNI, provided assistance in disease prevention and control, environmental health, nutrition, nursing education, veterinary public health, sexually transmitted diseases, drug abuse, health systems development, manpower, and oncology.

8.43 **Short-term consultants (STC)**: 6, for 127 days, in: sexually transmitted diseases, environmental health, oncology, and health legislation.

8.44 **Fellowships**: 7, in: health service administration, community nutrition, environmental health, disaster management, medical records, laboratory management, and communicable disease control, at an estimated cost of US$34,000.

General Appraisal and Future Trends

8.45 All levels of PAHO/WHO responded promptly whenever there was a need for their cooperation. This was exemplified in the case of the solid waste disposal and management problem; timely PAHO/WHO consultation contributed to solving this problem. With PAHO/WHO's full-time statistician, posted in late 1983, and the imminent addition of a trained national biostatistician to head the Health Information Unit, the international assistance should be even more effective. Development of a health plan will necessitate technical input from PAHO/WHO, and subregional and possibly regional resources likely will be required. The Organization's resources at various levels also may be tapped in assisting the Government in the area of drug abuse. The prerequisites are being defined for the establishment of a cancer registry; however, further technical input from PAHO/WHO will be required, including a workshop to be held in the second quarter of 1985.

Barbados

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	251,800
Percentage of urban population (as nationally defined)	1983	39.0
Birth rate/1,000 inhabitants	1983	17.9
Mortality rate/1,000 inhabitants	1983	7.9
State of Health Indicators		
Life expectancy at birth	1983	69.8
Infant mortality/1,000 live births	1983	24.5
Maternal deaths/1,000 live births	...	...
Death rate 1-4 years/1,000 children	1983	0.5
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	3,020
Availability of proteins (grams) per capita/day	1979-81	86.3
Percentage of deaths due to:		
infectious and parasitic diseases	1982	2.3
tumors	1982	17.1
heart diseases	1982	20.5
motor vehicle traffic accidents	1982	1.1

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	73.0
—poliomyelitis	1983	66.0
—measles	1983	66.0
—tuberculosis	...	...[a]
Percentage of population served with potable water	1983	100.0
Percentage of population served by sanitary waste disposal	1983	90.0
Consultations per inhabitant per year	1983	3.0
Number of discharges per 100 inhabitants	1983	8.3
Number of beds per 1,000 inhabitants	1983	8.0
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	8.5
Nurses per 10,000 inhabitants	1983	30.0
Nursing auxiliaries per 10,000 inhabitants	1983	12.0
Health Expenditure		
Health Expenditure per capita (in US$)	1983	310.7
Total health expenditure as a percentage of the GDP	1983	4.0
Percentage of the National Budget dedicated to health	1983	15.1

... Data not available.

[a] Not given routinely to children less than 1 year of age.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.46 As part of a national development plan, the country has developed a health sector plan whose primary goal is the establishment of a national health service, the first phase of which—the Barbados Drug Service—is already in existence. The next phase, the general practitioner service for the over 65 and under 5 age groups, is now being introduced. The Barbados Drug Service and the Mental Hospital are WHO Collaborating Centers. The Inter-American Development Bank (IDB) is funding projects for the improvement of the Queen Elizabeth Hospital and PAHO/WHO is providing technical cooperation in this endeavor. The Organization has continued to support specific nursing services management and organization of health care activities.

8.47 In human resources, PAHO/WHO supported a 6-week course for public health students and served as external examiner at the Barbados Community College; 16 students participated in the course.

8.48 In environmental health, the strengthening of water and sanitation agencies continued as part of the national environmen-

tal health program. In the management of the Water Authority, attention was directed toward the computerization of water and sewerage records, while staff of the Environmental Engineering Unit received professional training abroad. Preliminary investigations were carried out on the environmental health aspects of tourism, and building control procedures were reviewed. In an effort to develop the occupational health and safety program, special training and sensitization activities were carried out.

Health promotion and disease control

8.49 The national family planning program is in the process of development. A training program for nurses and teachers in family life education and family planning has been implemented.

8.50 With support from the Caribbean Food and Nutrition Institute (CFNI), the National Food and Nutrition Committee prepared a food and nutrition policy proposal for Barbados. Disease prevention and control actions continued to stress the Expanded Program on Immunization. Emphasis in noncommunicable diseases is on hypertension, diabetes, and cancer, as well as the prevention of traffic accidents and alcoholism.

8.51 Development of improved relationships and functions between the Ministries of Agriculture and Health for food protection was discussed during Government and PAHO/WHO officials' meetings in Bridgetown.

Mobilization of Technical and Financial Resources

8.52 **Technical Cooperation Among Developing Countries (TCDC)**: Barbados is in the forefront of TCDC arrangements with the East Caribbean territories.

8.53 **International cooperation**: *UNICEF* assisted in programs of research in child care; and *IDB* donated US$190,000 for construction of health care facilities (1984-1989), extension of the sewerage system, and for a small projects program.

8.54 **Bilateral cooperation**: Assistance was received for health development and management from *USAID*, from the *University of the West Indies*, and from the *American Public Health Association*. Also assistance was received from *USAID*, for maintenance of equipment; from the *International Planned Parenthood Foundation*, for family planning services; and from the *European Economic Community*, for construction of a child development center (1984-1985).

Cooperation Provided by PAHO/WHO

8.55 **Professional staff assigned to the country**: 10, including the Caribbean Program Coordinator (CPC), who is also the PAHO/WHO Country Representative for Barbados, medical officers, a scientist, a sanitary engineer, a nurse, health educators, a technical officer, and an administrative officer.

8.56 **Short-term consultants (STC)**: 5, in: environmental health aspects of tourism, building control, occupational health and safety, and computerization of water and sewerage records.

8.57 **Fellowships**: 26, in: laboratory management, vector control, meat processing, geriatric medicine, occupational safety and health, public health administration, pharmacy, primary health care, community nutrition, nursing education, alcoholism, industrial hygiene, management systems, dental auxiliary, tuberculosis, veterinary public health, nursing administration, and health sciences. The cost was US$104,750.

8.58 **Courses, seminars, and workshops**: 4, in: environmental health aspects of

tourism, occupational health and safety, and solid waste management planning in the Caribbean.

8.59 **Grants:** US$5,000 was provided for surveying the health needs of the elderly and US$15,000 for studying drug utilization in the country.

General Appraisal and Future Trends

8.60 Barbados subscribes fully to the Alma-Ata Declaration on primary health care, and PAHO will continue supporting Government efforts to expand national health services. A major and urgent need is the reorganization of the Ministry's central level. Although weekly meetings are held between Government health authorities and PAHO/WHO officials, more systematized dialogue is needed on infrastructure and program development.

8.61 The recent introduction of family planning and family life education within the Ministries of Health and Education calls for continued follow-up and support in these areas when requested by the Government.

8.62 In Barbados and throughout the Caribbean, there is a need to evolve the legislative and practical means to improve the organization and coordination of the Ministries of Health and Agriculture to ensure a safe and wholesome supply of food, especially meat. Developments in this regard are considered crucial in Barbados and Jamaica.

8.63 In environmental health, the authorities channeled PAHO/WHO cooperation to strengthen the institutional resources and management. Traditional program activities were reviewed and possible new program areas were explored with the aim of striking a balance between the two. This approach is likely to continue, especially because Barbados will be increasingly used as a "donor" country to achieve TCDC in the Eastern Caribbean.

Belize

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	157,600
Percentage of urban population (as nationally defined)	1980	50.0
Birth rate/1,000 inhabitants	1983	38.6
Mortality rate/1,000 inhabitants	1983	4.2
State of Health Indicators		
Life expectancy at birth	1983	70.0
Infant mortality/1,000 live births	1984	20.0
Maternal deaths/1,000 live births	1982	0.68
Death rate 1-4 years/1,000 children	1983	1.4
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,714
Availability of proteins (grams) per capita/day	1979-81	67.7
Percentage of deaths due to:		
infectious and parasitic diseases	1982	8.8
tumors	1982	7.6
heart diseases	1982	21.2
motor vehicle traffic accidents	1982	1.7

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1982	61.2
—poliomyelitis	1982	65.2
—measles	1982	50.7
—tuberculosis	1982	84.9
Percentage of population served with potable water	1983	70.0
Percentage of population served by sanitary waste disposal	1983	70.0
Consultations per inhabitant per year	1983	1.9
Number of discharges per 100 inhabitants	1983	10.3
Number of beds per 1,000 inhabitants	1983	2.5
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	5.1
Nurses per 10,000 inhabitants	1983	17.2
Nursing auxiliaries per 10,000 inhabitants	1983	7.0
Health Expenditure		
Health Expenditure per capita (in US$)	1983	30.0
Total health expenditure as a percentage of the GDP	1983	3.0
Percentage of the National Budget dedicated to health	1983	10.0

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.64 The Five-Year National Health Plan was completed and presented for circulation in final form. Specific projects were formulated for health infrastructure development, based on the general objectives and strategies identified in the Plan. Planning capabilities were strengthened at the central ministerial level, and the programming and supervisory skills of mid-level managers were developed through national training workshops. The Government is institutionalizing mechanisms for achieving integrated planning and development of the public sector—including health, education, agriculture, and economic development—at both the central and peripheral levels.

8.65 A long-term strategy was developed for strengthening and extending primary health care (PHC) services. For this purpose, the pilot Toledo District PHC project was evaluated, and specific project proposals for improving the health care delivery infrastructure

and support services were channeled through PAHO for external funding. The Government expects to extend the PHC program throughout the country over the next 5 years, utilizing village-level community health workers.

8.66 With reference to human resources, a 1-week workshop was held for senior officials of the Ministry of Health, Labour, and Sports and representatives from the Ministry of Education and the Belize College of Arts, Science, and Technology to formulate policies and strategies for health personnel planning and development. This workshop was presented jointly with the CARICOM Health Desk. The Belize School of Nursing revised its professional, practical, and nursing midwifery curricula.

8.67 In environmental health, the Ministry of Health, Labour, and Sports conducted a review of existing environmental health legislation. Cooperation also is taking place in the development of a local training program for environmental health officers. The food sanitation program is being strengthened through training and updated legislation. Recent agreements with USAID, UNICEF, CAREC and the Canadian Government will provide the funding necessary for implementing the rural water and sanitation projects prepared in 1983.

Health promotion and disease control

8.68 An updated report of the food and nutrition situation in Belize was prepared, as well as project proposals for external funding for the development of a nutrition unit and a nutrition surveillance program. The Ministry of Health, Labour, and Sports has introduced the use of the home growth chart in all health centers and is preparing a country-wide survey on hemoglobin levels in pregnant women, with CFNI and UNICEF support. A 3-year, UNFPA-funded project for maternal and child health (MCH) and family planning started in 1984 with an evaluation of the efficiency of MCH programs at health centers and hospitals. This evaluation served as the basis for adjusting programs and procedures and identifying priority needs in physical facilities and equipment. The Ministry of Health, Labour, and Sports is developing a program to provide community-based rehabilitation services. Oral health programs were evaluated, and local program staff received training.

8.69 In epidemiology, CAREC provided support for the development of the epidemiological surveillance program, including on-site technical assistance in the investigation of a hepatitis outbreak. An extensive evaluation of the Expanded Program on Immunization (EPI) was conducted, and a project proposal for strengthening EPI activities has been approved for funding by Rotary International. EPI coverage continued to improve in 1984. The Ministry of Health has improved the monitoring and supervision of EPI activities at the district and national levels. Both UNICEF and PAHO/WHO provided cold chain equipment for the program. All EPI vaccines were obtained through the regional Revolving Fund.

8.70 The intensive efforts of the 1983 malaria program have arrested the progressive deterioration noted in recent years. The percentage of increase in 1984 was smaller than in the previous period. For the first time in many years, spraying operations obtained 100% coverage of all dwellings in the attack area in both spray cycles. PAHO/WHO also provided support in carrying out a country-wide entomological assessment and in preparing a plan of operations on which a USAID-funded project for malaria eradication will be based. This US$500,000 program will provide supplies, equipment, training, technical assistance, and facilities to strengthen malaria control over the next 3 years.

8.71 The tuberculosis control program was evaluated and specific recommendations were made concerning its organization. Fewer cases were reported than in the previous year. However, case control and management at the district level continued to be deficient.

Mobilization of Technical and Financial Resources

8.72 In 1984, local investigators initiated or completed five national research activities with technical or material support from PAHO/WHO: infant morbimortality survey; KAP (knowledge, aptitude, and practice) survey on fertility and related issues; community participation in two health projects; malaria and migration; and ethnic attitudes and practices regarding diarrheal diseases.

8.73 **Technical Cooperation Among Developing Countries (TCDC)**: The Governments of Mexico and Belize signed an agreement of technical cooperation to improve health conditions in their common border area. PAHO/WHO was requested to provide support for the implementation of the agreement. Mexico will provide technical assistance in vector control, malaria, MCH, and health education, as well as training of health workers in different fields. Also, at the request of the Ministry of Health, PAHO/WHO is facilitating the cooperation of the Government of Brazil in providing technical and financial assistance to Belize for hospital construction.

8.74 **International cooperation**: *UNICEF* provided US$600,000 for the Toledo District rural water supply and sanitation project, US$200,000 for a health education school, and US$15,000 for the primary health care Cayo project; and *UNFPA* contributed with US$190,000 for maternal and child health and family planning services.

8.75 **Bilateral cooperation**: *USAID* allocated US$500,000 for a malaria and *Aedes aegypti* program and US$300,000 for the Belize/Cayo rural water and sanitation projects; and the *British Overseas Development Administration* donated US$150,000 for renovation of hospital and health center equipment and US$100,000 for a health center renovation.

8.76 **Nongovernmental organizations and foundations**: *Project Concern International* gave US$100,000 for the Toledo PHC project; and *Rotary International*, US$50,000 for strengthening EPI.

Cooperation Provided by PAHO/WHO

8.77 **Professional staff assigned to the country**: The PAHO/WHO Country Representative.

8.78 **Regional and intercountry advisers**: 22 for 372 days, in the following fields: primary health care and health service infrastructure, nutrition, maternal and child health, diarrheal diseases, epidemiology, immunization, entomology, and vector control.

8.79 **Short-term consultants (STC)**: 15, for 314 days, in the following fields: health planning, nursing education, environmental health, research methodology, mental health, oral health, immunization, maternal and child health, health legislation, tuberculosis, malaria, and sexually transmitted diseases.

8.80 **Fellowships**: 20, in the following fields of study: primary health care, nursing administration, health research, clinical medicine, nutrition, dental auxiliary, laboratory management, food sanitation, and vector control. PAHO/WHO's contribution was US$100,000.

8.81 **Courses, seminars, and workshops**: 8, with 280 participants and PAHO/WHO's contribution of US$126,000, in the following areas: supervisory course for the control of diarrheal diseases, health personnel planning, services for the handicapped, malaria voluntary collaborators, malaria microscopists, and international disease classification.

General Appraisal and Future Trends

8.82 PAHO/WHO's involvement in the development of the health sector in Belize has

been growing and has contributed significantly to improving the quality and accessibility of health services. Technical cooperation was provided in more areas; new fields of development such as mental health, oral health, health education, services for the handicapped, health research, allied health training, and others are demanding the Organization's support. Current efforts to introduce and develop rational planning and programming methodologies need to be strengthened within the framework of the Government's commitment to the PHC strategy. It remains important to support the development of qualified national leaders and managers in health, as well as the country's commitment to achieving a greater self-sufficiency in human resources.

8.83 Finally, as other agencies begin to provide more material and technical assistance in developing the health sector in Belize, there is a rising need to achieve interagency coordination to avoid unnecessary duplication of efforts and lighten the burden of overworked government officials.

Bolivia

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	6,253,000
Percentage of urban population (as nationally defined)	1984	46.8
Birth rate/1,000 inhabitants	1980-85	44.0
Mortality rate/1,000 inhabitants	1980-85	15.9
State of Health Indicators		
Life expectancy at birth	1980-85	50.7
Infant mortality/1,000 live births	1980-85	129.0
Maternal deaths/1,000 live births	1980-85	48.0
Death rate 1-4 years/1,000 children	...	...
Percentage of newborn with a weight of less than 2,500 grams	1981	10.0
Availability of calories per capita/day	1979-81	2,082
Availability of proteins (grams) per capita/day	1979-81	54.6
Percentage of deaths due to:		
infectious and parasitic diseases	1980	16.6
tumors	...	...
heart diseases	...	...
motor vehicle traffic accidents	...	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	16.6
—poliomyelitis	1984	80.0
—measles	1984	62.0
—tuberculosis	1983	46.4
Percentage of population served with potable water	1980	36.0
Percentage of population served by sanitary waste disposal	1980	18.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1981	1.8
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	5.1
Nurses per 10,000 inhabitants	1980	1.7
Nursing auxiliaries per 10,000 inhabitants	1980	4.5
Health Expenditure		
Health Expenditure per capita (in US$)	1982	2.0
Total health expenditure as a percentage of the GDP	1981	6.0
Percentage of the National Budget dedicated to health	1980	18.3

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.84 The Ministry of Social Welfare and Public Health undertook a functional reorganization in which the central structures and health units were grouped together into nuclei forming a chain of command reporting eventually to the Office of the Minister. It was hoped that this arrangement would strengthen the Ministry's role in the governance of the health sector. In addition, an effort was made to strengthen relations between the institutional sector and the organized community by placing the operation of the People's Health Council and Committees on a formal basis and instituting a strategy of people's mobilizations.

8.85 Within the context of the national health policy, the grouping of the functional units and the definition of eight lines of strategic strength made it possible to develop an effective type of planning by means of which management was improved substantially in the face of resource constraints, traditional red tape, and a complex national situation. A beginning was made on integrating and develop-

ing a system of services at the local level (health areas) by implementing the Comprehensive Health Area Activities Plan (PIAAS). The Plan was applied initially in 50 areas, and funding was provided for extending it to 150 of the country's 800 urban and rural areas by the end of the year. This institutional coverage process is supplemented by the coverage provided by the people's mobilizations.

8.86 Various programs of disease control, sanitation, and social communication are being integrated into the operational structure as their vertical organization is gradually phased out. The major participants in the Plan are the Ministry of Social Welfare and Public Health and the organized social sector, consisting of the People's Health Council and the People's Departmental and Local Committees—these consisting, in turn, of representatives of the Bolivian Labor Federation, the Peasants Confederation, the Neighborhood Boards, universities, students, the Medical College, an so on. These organizations, together with the Ministry and its regional structures, have held five congresses of People's Health Committees in each department for the purpose of reviewing health policy, public needs, possibilities, and community participation.

8.87 A number of developments in 1984 were conducive to progress in the linkage of social security with the Ministry of Health and other sectoral components. These included the arrangement for centralized procurement of drugs through the National Institute of Medical Supplies (INASME), the determination of a salary policy for the health professions, and the impetus given to priority areas such as human resource development, control of diarrheal diseases, and the implementation of PIAAS.

8.88 In the field of human resources, the authority of the Ministry of Social Welfare and Public Health was strengthened in matters pertaining to the regulation, planning, and utilization of health personnel on a national scale. This led to the creation of a National Commission on Teaching-Service Integration, which, acting in conjunction with the universities, delineated national intersectoral policies and promoted changes in the institutions involved. In addition, a national human resource system involving the participation of the Schools of Public Health in La Paz and Cochabamba, the Multiprofessional Training Institute, and the medical care agencies of the national service network was launched. A Master of Public Health course was established for the first time in Bolivia. A continuing education program is already in operation, and a National Center for Educational Technology in Health has been established.

8.89 In the implementation of programs, particular emphasis was placed on adequate utilization of existing human resources. An example of this was the decision to organize all 800 health areas of the PIAAS coverage-extension program using available physicians and professional nurses.

8.90 Participation by the organized community is a priority of Bolivia's health policy. This involvement was encouraged by conducting orientation courses; the first result was the development of the People's Health Mobilizations, which contributed substantially to the progress made in certain programs. Thus, in the Expanded Program on Immunization, the coverage of the poliomyelitis and measles vaccination drives was increased from 20% to 80% and oral rehydration salts were used on a massive scale.

8.91 Outstanding developments in environmental health were the construction of water and sanitation infrastructure in the Departments of Cochabamba and Tarija and the development of works based on appropriate technologies in rural areas and marginal urban communities, as well as the training of personnel. A number of projects for investments in urban and rural water and sanitation facilities were formulated. A solid waste management program was undertaken with the support of the People's Mobilizations, and a pilot program was initiated at El Alto de La Paz.

Health promotion and disease control

8.92 In view of the seriousness of Bolivia's food and nutrition situation, various rapid-response plans were prepared in addition to supplemental food programs. A project for increasing the supply of milk under socially affordable conditions was formulated. Also, a national plan was instituted for establishing people's child care centers to provide food and comprehensive care to preschoolers at nutritional risk. The production and mass consumption of iodized salt was encouraged as a means of combating endemic goiter. The initiatives on behalf of preschoolers are linked with the PIAAS, which is the focus of all maternal and child and worker's health care efforts. A new drug policy, aimed at supplying the needs of the population in a socially affordable manner, is a fundamental step in extending the coverage of services.

8.93 Organized community participation made it possible to take measures of far-reaching importance for the prevention of poliomyelitis and measles (80%) and of diphtheria and tetanus, yellow fever, and tuberculosis. New malaria control strategies were being applied in the northern part of the country, and the campaign against Chagas' disease was initiated with a People's Mobilization against the *vinchuca* and introduction of housing improvements. In addition, integrated vector control programs were considered and the tuberculosis control program was being revised. A diarrheal disease control program was launched with the mass distribution of oral rehydration salts.

Mobilization of Technical and Financial Resources

8.94 In the area of generation and dissemination of knowledge, a Department of Research was established within the Ministry of Social Welfare and Public Health with the aim of defining a joint research policy with the San Andrés University, the Academy of Sciences, and the Ministry of Planning.

8.95 **Technical Cooperation Among Developing Countries (TCDC)**: Bolivia and Brazil entered into a technical cooperation agreement including a section on development of human resources in the public health sector by the Ministry of Social Welfare and Public Health of Bolivia and the School of Public Health of Rio de Janeiro, an agency of the Oswaldo Cruz Foundation. The agreement covers the areas of research, services, administration, planning, epidemiology, social sciences, occupational health, and human resource research. Negotiations were undertaken with Argentina, Cuba, and Brazil in an effort to encourage TCDC programs.

8.96 **International cooperation**: *International Concern* donated US$675,000 for implementation and development of an extension coverage plan, and *UNICEF*, US$1.8 million for the rural integrated development of the Departments of Oruro, Chuquisaca, Potosí, and Tarija.

8.97 **Bilateral cooperation**: *JICA* (Japan) donated US$16.8 million (2 years) for the Santa Cruz General Hospital; *GTZ* and *KfW* (Germany), US$1,612,903 for a basic health program in Oruro; *Dan Church Aid* (Denmark), US$290,000 (3rd phase) for the provision of integrated primary health care in Los Andes Province, La Paz; *Andean Rural Health Corporation*, US$300,000 for rural Andean development; *Government of Great Britain*, US$1 million for administration and delivery of health services and development of human resources; *Technical Cooperation of Switzerland*, US$400,000 (1980-1986) for the health project of Chuquisaca, and US$1 million for the health project of Izozog, Santa Cruz; and *USAID*, US$310,000 for rural health, US$1 million for the control of contagious diseases, and US$1.2 million for recuperation in case of emergencies.

Cooperation Provided by PAHO/WHO

8.98 **Professional staff assigned to the country:** 8, including the PAHO/WHO Country Representative; advisers in planning of health programs, nutrition, nursing and administrative methods, health administration, human resources and research; and two sanitary engineers.

8.99 **Regional and intercountry advisers:** 27, for a total of 206 days, in: nutrition, systems engineering, textbook program, accounting, development of health services, nursing, animal health, medical records, maternal and child health, sanitary engineering, supplies, epidemiology, and malariology.

8.100 **Short-term consultants (STC):** 16, for a total of 463 days, in: epidemiology (Chagas' disease), human resources, diarrheal diseases, sanitary engineering, environmental pollution, information systems, plague control, malaria, mental health, and statistics.

8.101 **Fellowships:** 12, for a total of 56.5 months, at a cost of US$79,100, in: leprodermatology, malariology, occupational health, immunology, hemorrhagic fever, tuberculosis, parasitology, planning, and vaccine control.

8.102 **Courses, seminars, and workshops:** 57, for approximately 1,500 to 2,000 participants. These events received a total PAHO/WHO contribution of US$118,631.

General Appraisal and Future Trends

8.103 The health sector stepped up its action and, while advances were evident, progress—especially in institutional development—was impeded by a number of problems. The requirements of a dynamic plan of action, together with the seriousness of the crisis, constitute an incentive to improve the means for achieving better internal coordination and a better combination of domestic efforts with the cooperation provided by international, bilateral, and nongovernmental agencies. The mechanisms for programming, implementing, and monitoring PAHO's cooperation with the Government are characterized by frequent workshops, analysis, continuous reprogramming and adjustment, and standardization of requests for assistance. Efforts also are being made to increase the country's capacity for programming and utilizing external resources and for negotiation. The Government improved its procedures for the formulation and management of projects, thereby speeding up their development and increasing the levels of implementation, including budget execution. Other items worthy of note were the compilation of an inventory of nongovernmental cooperative agencies and the holding of a national meeting of international and nongovernmental organizations attended by delegations from 70 agencies active in the country.

8.104 The manner in which the Organization is providing its cooperation, as well as the manner in which the Government and the social sector are utilizing it, warrant the expectation that the cooperation will continue even if adjustments are made to the new Government's plans.

Brazil

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1985	135,488,000
Percentage of urban population (as nationally defined)	1980	67.6
Birth rate/1,000 inhabitants	1980	29.6
Mortality rate/1,000 inhabitants	1980	8.8
State of Health Indicators		
Life expectancy at birth	1980-85	63.5
Infant mortality/1,000 live births	1980	87.3
Maternal deaths/1,000 live births	1980	1.3
Death rate 1-4 years/1,000 children	1980	3.8
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,578
Availability of proteins (grams) per capita/day	1979-81	59.4
Percentage of deaths due to:		
infectious and parasitic diseases	1980	14.8
tumors	1980	9.5
heart diseases	1980	29.4
motor vehicle traffic accidents	1980	3.4

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1984	65.0
—poliomyelitis	1984	95.0
—measles	1984	87.5
—tuberculosis	1980	59.4
Percentage of population served with potable water	1983	93.7[a]
Percentage of population served by sanitary waste disposal	1983	60.4[b]
Consultations per inhabitant per year	1980	1.5[c]
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1980	4.3
Human Resource Indicators		
Physicians per 10,000 inhabitants	1980	8.6
Nurses per 10,000 inhabitants	1980	1.0
Nursing auxiliaries per 10,000 inhabitants	1980	25.2
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	...	...

... Data not available.
[a] Urban population; the rate for the rural population was 67.2% in 1983. [b] Urban population; the rate for the rural population was only 6.5% in 1983. [c] Ambulatory consultations through the National Institute of Medical Care of the Social Security (INAMPS).

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.105 Better coordination at the State and Municipal levels, achieved with the help of the Interministerial Planning Commission, contributed to implementing the strategy of integrated health actions. As part of this strategy, and to bring together the service efforts at all three levels, a methodology was designed to facilitate linkage and harmonious development. This linkage fell short of the goal because of a sharp reduction in Federal funds, especially for Social Security. These constraints and other factors of a political nature also affected the negotiations with the World Bank (IBRD) on the São Paulo and Northwest health programs.

8.106 In human resources, the essential activities were harmonized and integrated within the framework of the health actions strategy. Steps were taken to continue inservice training for middle-level staff in five States, and instructor-supervisors in maternal and child health and communicable diseases were retrained. In medical education, the survey of the country's schools of medicine was completed, its results were analyzed, and strategies for the adjustment and updating of

curricula were redefined. A review of practice, education, and research in the nursing field, conducted with the participation of the Ministries of Education, Social Security, and Health, provided the basis for the formulation of a joint plan of action to be initiated in 1985. The Brazilian Institute of Geography and Statistics, the National School of Public Health, and PAHO/WHO conducted a survey of available health sector personnel with a view to improving their utilization.

8.107 In environmental health, the magnitude and complexity of existing problems and the large number of Federal agencies and organizations involved made it necessary to develop linkage mechanisms, such as the unit established to coordinate the formulation and implementation of the basic sanitation programs being conducted in the Northwest and in Rio Grande do Sul with the assistance of IBRD. In addition, greater impetus was given to the National Sanitation Plan (PLANASA); in addition to providing the means for making better use of resources, PLANASA has made it possible to harmonize national goals with those of State governments and to ensure an effective contribution by the National Housing Bank (BNH). The Secretariat for the Environment carried out an intensive program of technology development and staff training, especially in the area of water quality and control laboratories.

8.108 The Brazilian portion of the Pan American Network of Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA) was expanded to include 28 national technical information centers.

Health promotion and disease control

8.109 Salient activities in food and nutrition included the supplementary feeding for undernourished pregnant women and preschoolers, the formulation of a policy for including nutrition in maternal and child health programs, the evaluation of the basic food training program in low-income areas, and the iodized salt distribution program for the control of goiter.

8.110 The integrated health care program for women and children was instituted in 10 States and the Federal District. Its initial activities included the strengthening of managerial capacity, review of techniques and procedures, and training of personnel. A substantial reduction in the number of cases of poliomyelitis (from 2,400 in 1980 to 33 in 1984) was observed. Poliomyelitis vaccination coverage of newborn infants increased to 87%. Measles and DPT vaccination remained at the 1983 levels of protection. Cold chain improvements were made as a result of revised procedures and the training of personnel.

8.111 The program for control of major endemic diseases—a priority activity being conducted through the Superintendency of Public Health Campaigns (SUCAM)—intensified its linkage with health sector institutions and other sectors, especially in the interest of strengthening programs against malaria and other tropical diseases. Malaria continued to be a serious problem, although restricted to the Amazon Region. Transmission was reduced, however, in Mato Grosso, Amazonas, Acre, and Goias. A number of research activities were stepped up to find solutions to this problem, notably the inventory of research projects, which was completed during the year; the setting of priorities; and tests to determine the efficacy and feasibility of using mefloquine. As for Chagas' disease, attack phase operations involving the use of pyrethroids in the control of triatomides were extended to new areas (Ceará, Piauí, and Rio Grande do Norte). The program of *Aedes aegypti* surveillance was continued in 3,960 strategic localities throughout the country. This vector was eradicated in the State of Rio Grande do Norte and in Roraima. Schistosomiasis control, based on early case detection and treatment and the destruction of foci of infected mollusks, continued to be carried out in 16 Federal entities. The studies on the im-

munoprophylactic elements produced by the University of Minas Gerais for the control of leishmaniasis were expanded, and reporting systems were improved.

8.112 The National Institute for Quality Control in Health consolidated its food and drug control operations. The National Commission on Revision of the Brazilian Pharmacopeia completed and published the first volume of the revision. The program for the production of reference chemicals advanced and was being coordinated with similar programs of other Latin American countries (such as Argentina and Mexico).

Mobilization of Technical and Financial Resources

8.113 **Technical Cooperation Among Developing Countries (TCDC):** Intranational horizontal cooperation in environmental health was strengthened and expanded with the inclusion of organizations that have attained an exceptional capacity in terms of technical, scientific, and administrative-institutional infrastructure. These agencies have collaborated with other national, state, and local entities in the planning and execution of projects. In intercountry cooperation, the Superintendency of Campaigns (SUCAM) extended technical cooperation to Bolivia, Paraguay, and Uruguay in the structuring of Chagas' disease control programs. It also collaborated with Bolivia in a review of the problems presented by other tropical diseases.

8.114 **International cooperation:** *UNFPA* provided US$15 million for integrated maternal and child health care and *IDB* gave US$450,000 for studies to improve primary care for low-income groups.

Cooperation Provided by PAHO/WHO

8.115 **Professional staff assigned to the country:** 19, including the PAHO/WHO Country Representative and advisers in sanitary engineering, epidemiology, institutional development, development of health services, drug control, malaria eradication, maternal and child health, and human resources.

8.116 **Short-term consultants (STC):** 48, for a total of 1,253 days, in: sanitary engineering, dentistry, health services, serology, leprosy, disease research, biomedical engineering, occupational health, pneumology, maternal and child health, laboratories, tuberculosis, pharmacology, health facilities architecture, thoracic surgery, alcoholism, rehabilitation, cancer, radiology, hospital administration, vaccines (BCG), veterinary medicine, food quality control, perinatology, and hemotherapy.

8.117 **Fellowships:** 129, for a total of 148 months, in: mental health, veterinary public health, sanitary engineering, immunology, maternal and child health, food and drug control, epidemiology, leprosy, chronic diseases, human resources, nursing, nutrition, cancer, vector control, health services, laboratories, medical library science, dentistry, sex education, toxicology, pneumology, and other areas. PAHO/WHO contributed US$380,668.

8.118 **Courses, seminars, and workshops:** 32, with 2,419 participants, in: environmental health, water quality control, birth control, breastfeeding, instructor training, health technology, social communication, epidemiology, toxic product surveillance, toxicological analysis, international health actions, interdisciplinary research, hospital administration, pneumology, cold chain, rodent control, hospital medical care, international classification of diseases, essential drugs, basic sanitation, floods, water supply, health systems development, communicable diseases, human resource development, nursing, auxiliary health services, and hospital costs. The cost of these events for PAHO/WHO was US$243,777.

8.119 **Grants**: PAHO/WHO provided grants at a cost of US$229,108 in: malaria and yellow fever control and eradication, hospital infections, health information, international health systems, diarrheal disease infections, acute respiratory infections, mental health, primary care, environmental health, nursing, a traveling seminar on scientific cooperation in health, and supply of drugs at the meeting of the National Research Commission.

General Appraisal and Future Trends

8.120 Health conditions in Brazil generally reflect those in the Region, and the Government's priorities are consistent with PAHO/WHO Regional Strategies. Action by the national authorities was subject to constraints deriving from the political transition in 1984. Such constraints have also negative repercussions on PAHO/WHO technical cooperation. Consequently, it is necessary to review with the new authorities the strategies and priorities of PAHO/WHO cooperation and adjust them within the framework of the Government's overall and health policies. Given the limited availability of resources, efforts should focus on the areas of strongest impact, particularly new approaches, more effective technology, and the development of human resources. An evaluation of the national health system also is advisable.

British West Indies

Basic Data (*for British Virgin Islands only*)

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1982	12,400
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1982	18.0
Mortality rate/1,000 inhabitants	1982	5.4
State of Health Indicators		
Life expectancy at birth	...	...
Infant mortality/1,000 live births	1982	41.0
Maternal deaths/1,000 live births	1983	—
Death rate 1-4 years/1,000 children	1983	2.0
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	....	...
Availability of proteins (grams) per capita/day	...	...
Percentage of deaths due to:		
infectious and parasitic diseases	1983	—
tumors	1983	1.2
heart diseases	1983	0.3
motor vehicle traffic accidents	1983	0.2

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	89.0
—poliomyelitis	1983	74.0
—measles	1983	89.0
—tuberculosis	...	...
Percentage of population served with potable water	1984	90.0
Percentage of population served by sanitary waste disposal	1983	85.0
Consultations per inhabitant per year	1983	50.0
Number of discharges per 100 inhabitants	1983	7.4
Number of beds per 1,000 inhabitants	1983	4.7
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	8.0
Nurses per 10,000 inhabitants	1983	31.7
Nursing auxiliaries per 10,000 inhabitants	1983	22.5
Health Expenditure		
Health Expenditure per capita (in US$)	1981	135
Total health expenditure as a percentage of the GDP	1981	5.5
Percentage of the National Budget dedicated to health	1980	11.2

... Data not available.
— None.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.121 This report includes the following countries: Anguilla, British Virgin Islands, and Montserrat. These Governments are continuing to strengthen their human resources by means of training through workshops or fellowships. PAHO/WHO has supported the orientation of senior nursing personnel to Caribbean standards of nursing care.

8.122 National environmental health programs proceeded satisfactorily in these countries without major events or developments. Due to limited resources, assistance was minimal, but water (Anguilla) and health (Montserrat) agencies were represented at a subregional workshop on water quality control.

Health promotion and disease control

8.123 Regarding Anguilla, family planning (FP) and family life education (FLE) were incorporated into the maternal and child health program. FLE activities within the school system and out of school declined somewhat because the three family life educa-

tors trained under the UNFPA-funded and FLE project entered the Ministry of Education as full-time teachers. This was compounded by a delay in selecting and appointing a health educator to commence in the third quarter of the year. The new Government expressed the need to reactivate health/FLE, and funding is being sought from UNFPA for a project directed to FLE. The basic child health services, including immunization, maintained good levels of coverage.

8.124 In the British Virgin Islands, FP and FLE were incorporated into the maternal and child health services. The main objectives of the FLE and FP program are to introduce FLE within the school system, make FP available in health clinics, and provide FP services for adolescents. The FLE curriculum was completed and placed within the health sciences course of the high school. FP services are now available in six clinics scattered throughout the islands. The parent effectiveness training program in FLE, including sex education for members of the Parent/Teachers' Association, was carried out successfully in four schools.

8.125 The British Virgin Islands joined the Caribbean Family Planning Association, which provides educational material to strengthen FLE and FP activities. To keep abreast of changes, the FP nurse received training in FP and the family life educator attended an international conference on FLE in Mexico. Policies and procedures for the maternity ward are being developed in order to improve services by maintaining standards.

8.126 In Montserrat, the FLE program comes under the Ministry of Education. FP activities continued to be the main responsibility of the Montserrat FP Association. A health and FLE manual to be used by teachers was developed, and it will serve as one way of promoting and strengthening FLE within the school system.

8.127 Surveillance and control of communicable diseases continued to have a high national priority in all of the territories. They participated in the immunization program and, with CAREC's assistance, are developing and strengthening their surveillance and laboratory capabilities. Collaboration from CFNI continued in 1984.

Mobilization of Technical and Financial Resources

8.128 **International cooperation**: *UNFPA* donated US$30,120 for family planning/FLE distributed as follows: Anguilla US$2,600, British Virgin Islands US$15,820, and Montserrat US$11,700.

8.129 **Bilateral cooperation**: *USAID/IPPF* gave technical cooperation for Family Planning Services in Montserrat.

Cooperation Provided by PAHO/WHO

8.130 **Professional staff assigned to the islands**: Although no full-time professional staff were assigned to any of these islands, considerable cooperation was provided by the Organization's staff located in other parts of the Caribbean, Headquarters, CAREC, and CFNI. Consultants from the CPC's Office were provided to collaborate with governmental efforts in health systems development, personnel, disaster preparedness, disease control, environmental health, zoonoses and vector control.

8.131 **Fellowships**: 11, in: health education techniques, midwifery, hepatitis, meat and other foods, middle management, alcoholism, public health administration, and laboratory services. PAHO/WHO funding was US$27,040. In addition, training was provided for three nationals of Montserrat in laboratory management (Saint Lucia), ward management (Barbados), and community nutrition (Barbados), utilizing European Eco-

nomic Community-Caribbean Community (EEC-CARICOM) Secretariat funding.

General Appraisal and Future Trends

8.132 PAHO/WHO collaboration with the Governments is expected to continue along the same lines in the years to come. PAHO/WHO will support a thorough health situation analysis in 1985 as the first step to promote the managerial process.

8.133 In Anguilla, a new project proposal to UNFPA for funding of FLE/FP activities should restore momentum to the maternal and child health aspect of the health services. In the British Virgin Islands, FLE in secondary schools progressed; however, there is a need to introduce this subject in primary schools. The parent effectiveness training program should be further developed in the four main islands. Continued support should be given to the development of the maternal and child health manual and the policy and procedure manual. In Montserrat, PAHO/WHO will provide continued support in FLE, perinatal care, and updating knowledge and skills in maternal and child health care with reference to postnatal care.

Canada

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	25,128,000
Percentage of urban population (as nationally defined)	1984	75.5
Birth rate/1,000 inhabitants	...	...
Mortality rate/1,000 inhabitants	...	...
State of Health Indicators		
Life expectancy at birth	1981	90.0[a]
Infant mortality/1,000 live births	1982	9.1
Maternal deaths/1,000 live births	1982	0.2
Death rate 1-4 years/1,000 children	1982	0.5
Percentage of newborn with a weight of less than 2,500 grams	1982	5.8[b]
Availability of calories per capita/day	1979-81	3,340
Availability of proteins (grams) per capita/day	1979-81	98.2
Percentage of deaths due to:		
infectious and parasitic diseases	1982	0.5
tumors	1982	24.3
heart diseases	1982	34.4
motor vehicle traffic accidents	1982	0.9

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	80.0
—poliomyelitis	1983	80.0
—measles	...	...
—tuberculosis	...	...
Percentage of population served with potable water	1982	97.0
Percentage of population served by sanitary waste disposal	1982	60.0
Consultations per inhabitant per year	1982	550.0
Number of discharges per 100 inhabitants	1980	16.1
Number of beds per 1,000 inhabitants	1983	16.2
Human Resource Indicators		
Physicians per 10,000 inhabitants	1984	19.5
Nurses per 10,000 inhabitants	1984	86.9
Nursing auxiliaries per 10,000 inhabitants	1984	32.8
Health Expenditure		
Health Expenditure per capita (in C$)	1982	1,220
Total health expenditure as a percentage of the GDP	1982	8.4
Percentage of the National Budget dedicated to health	1982	13.5

... Data not available.

[a] Age for women; for men, 72.0. [b] Excluding Newfoundland.

Analysis of the Steps Taken in 1984 to Implement Regional Strategies

Development of the health service infrastructure

8.134 The major Canadian initiative in 1984 with respect to the health service infrastructure was the adoption of new Federal legislation in support of the national health insurance program (The Canada Health Act, 1984), and the consequent repeal and amendment of existing legislation. The new act does not change the nature of the existing health insurance program in Canada; rather, it consolidates the provisions of earlier legislation into a single act and, by clarifying and strengthening the program conditions and criteria, it reaffirms Canada's commitment to a universal, prepaid national health insurance program.

Health promotion and disease control

8.135 The new Government, elected in 1984, confirmed that health promotion and illness prevention activities would be a particular priority and that the current health system,

designed primarily to deal with sickness, would be supplemented by a policy framework designed to promote health, with emphasis on such areas as new models of health care for the elderly and changes in personal lifestyles to reduce use of tobacco, abuse of alcohol, neglect of exercise, carelessness with diet, and other lifestyle characteristics destructive to health.

Technical and Financial Resources Provided to Other PAHO Member Governments

Program	Area or country	Total (*Canadian dollars*)	Disbursement 1983/1984
Regional drug testing lab.	Caribbean	231,500	2.1
Occupational health	Colombia	134,900	—
Nursing education	Colombia	159,500	—
Continuing education in health	Latin America	960,000	—
Rural water and health education	Nicaragua	2,310,900	—
Radiotherapy	Brazil	140,000	—
Bone marrow transplants	Brazil	50,000	—

8.136 The figures above should be read with the following factors in mind:

(a) Most of the projects noted came on stream in Fiscal Year 1984-1985 or were completed in 1982-1983, hence no disbursement figures for 1983-1984.

(b) The list covers only projects funded from the bilateral allocation. Significant disbursements in the health sector through nongovernmental organizations and institutions and through Mission Administered Funds (MAF) are not noted.

(c) Only projects specifically under health delivery and health education have been listed. Not included are major disbursements in health-related fields such as potable water, sewage, and nutrition.

8.137 With reference to (b), for example, the MAF inventory for 1983-1984 shows over US$2,500,000 in small (between US$1,000 and US$50,000) health and nutrition activities with local nongovernmental organizations and communities in the Caribbean and Latin America.

Future Trends in Providing Technical and Financial Resources to PAHO Member Governments

8.138 The various governments establish the orientations of future programs within the bilateral agreements to which Canada is a party. The specialized sectors themselves are defined by the governments according to their individual priorities. The governments, members to these agreements with Canada, tend to favor the planning, development, and economic sectors rather than the health sector. It is, therefore, difficult to predict or define Canada's future trends in health; they depend on the priorities of the other Member Governments.

Chile

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	11,682,000
Percentage of urban population (as nationally defined)	1983	82.6
Birth rate/1,000 inhabitants	1983	22.7
Mortality rate/1,000 inhabitants	1983	6.4
State of Health Indicators		
Life expectancy at birth	1983	67.1
Infant mortality/1,000 live births	1983	21.8
Maternal deaths/1,000 live births	1983	0.4
Death rate 1-4 years/1,000 children	1983	1.1
Percentage of newborn with a weight of less than 2,500 grams	1983	6.8
Availability of calories per capita/day	1979-81	2,759
Availability of proteins (grams) per capita/day	1979-81	75.7
Percentage of deaths due to:		
infectious and parasitic diseases	1983	3.6
tumors	1983	16.1
heart diseases	1983	27.6
motor vehicle traffic accidents	1983	12.4

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1984	92.3
—poliomyelitis	1984	97.8
—measles	1984	90.8
—tuberculosis	1984	96.2
Percentage of population served with potable water	1985	99.0
Percentage of population served by sanitary waste disposal	1985	80.0
Consultations per inhabitant per year	1983	125.0
Number of discharges per 100 inhabitants	1983	8.9
Number of beds per 1,000 inhabitants	1983	2.9
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	10.0
Nurses per 10,000 inhabitants	1983	4.0
Nursing auxiliaries per 10,000 inhabitants	1980	20.7
Health Expenditure		
Health Expenditure per capita (in US$)	1981	95
Total health expenditure as a percentage of the GDP	1983	6.0
Percentage of the National Budget dedicated to health	1982	12.4

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.139 Pursuant to its medium-term strategies, the Ministry of Health designed a programming module for the national health service system to enable each service to define its goals and formulate its own programs. Various studies were undertaken to evaluate the operational and implementing the capacity of facilities in the health care delivery system. The results should make it possible to identify critical areas and adjust the system as needed. Community participation in the effort to achieve better levels of health facilitated the transfer of primary level health establishments to Municipal authorities with a view to extending the coverage of services and making them more accessible. The Ministry of Health retains responsibility for regulating, supervising, and evaluating the work of facilities transferred.

8.140 In the human resource area, a total of 16 training courses, seminars, and workshops on priority health areas, primary care, hospital administration, and the decision-making process were conducted for national

personnel. The Ministry also instituted a continuing education scheme.

8.141 In environmental health, a symposium on water supply and excreta disposal in underserved urban areas and a seminar on environmental health planning were held. Equipment was provided for a water quality control laboratory operated by the Ministry. The Chilean portion of the Pan American Network of Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA) was consolidated.

Health promotion and disease control

8.142 The program of primary health care for mothers and children in rural areas was evaluated and reformulated. Significant progress was made in the immunization program: vaccination coverage rates increased to 84% for DPT, 86% for poliomyelitis, 77% for measles, and 87% for tuberculosis. The programs for control of typhoid fever, hepatitis, and hospital infections were continued.

8.143 A seminar on mental health care at the primary level was held, as was a course on basic psychiatry for general practitioners. With regard to cancer, a course was conducted on statistical methods in cancer studies, research on cancer chemotherapy was carried forward, and a subcenter was established at the National University as part of the Latin American Cancer Research Information Program (LACRIP). A survey on the needs of the elderly was conducted to obtain basic information for the design of a policy for the care of this group. The national tuberculosis and acute respiratory infections control program was evaluated with a view to restructuring and strengthening it. Further field tests of the oral typhoid fever vaccine were conducted, and virological techniques were improved. Additional training courses were conducted and educational materials were prepared and scheduled under the patient rehabilitation program.

Mobilization of Technical and Financial Resources

8.144 In the area of generation and dissemination of knowledge, the national priority order for research topics in the health sector was revised. High on the list are studies on health trends in health services, profile studies on physicians in the primary care field, and birthweight trends.

8.145 **International cooperation:** *UNICEF* donated US$60,000 for a health education program (3 years); *UNDP*, US$43,906 for the expansion and improvement of the Institute of Public Health (project ended in 1984); *UNFPA*, US$16,150 for family planning (project to end in 1985); and *IDB*, US$2.5 million for water and air pollution control.

Cooperation Provided by PAHO/WHO

8.146 **Professional staff assigned to the country**: The PAHO/WHO Country Representative.

8.147 **Regional and intercountry advisers**: 53, for a total of 377 days, in: nursing, auditing, health of the elderly, Chagas' disease, nutrition, essential drugs, human resources, occupational health, cancer control, Expanded Program on Immunization (EPI), radiology, and human reproduction.

8.148 **Short-term consultants (STC)**: 32, for a total of 625 days, in: hemotherapy, EPI, dentistry, health of the elderly, sexually transmitted diseases, disaster preparedness, solid waste management, health programs, water fluoridation, food control, leprosy, drug control, teaching-service integration, and diarrheal diseases.

8.149 **Fellowships**: 48, in: cancer epidemiology, WHO Special Program for Research and Training in Tropical Diseases (WHO/

TDR), animal health, Chagas' disease, parasitic diseases, epidemiological surveillance, pediatric dentistry, human anatomy, nursing, public health, adult education, rural health, vector control, urban sanitation, intrahospital infections, psychiatry in chronic and acute diseases, respiratory diseases, and congenital malformations. PAHO/WHO contributed US$113,080.

8.150 **Courses, seminars, and workshops**: 13 courses in social communication, rehabilitation, public health, mental health, family planning, information, environmental health, pediatric oncology, primary care and child health, epidemiology, and women's general care; 9 seminars in environmental health, social anthropology and research, tuberculosis, diarrheal diseases, maternal and child health, primary care, and epidemiology; and a workshop on information and documentation (REPIDISCA). In addition, special meetings were carried out in human resources, disease control, and environmental health. PAHO/WHO contribution to these areas was US$58,200.

8.151 **Grants**: PAHO/WHO awarded US$8,000 for public health workshops; US$12,680 for preparing the professional profile of physicians in the primary care field in Chile; US$44,174 for a bronchial asthma study; US$1,200 for a study of birthweight trends; US$1,000 for the first primary care workshop at the Bío-Bío health service; US$2,000 for a study of decision-making authority at the various levels of care; and US$2,500 for a survey on needs of the elderly.

General Appraisal and Future Trends

8.152 Chile has attained a high level of maturity in the definition and implementation of health policies, especially those pertaining to expansion of health service coverage, infrastructure development, rural services, maternal and child care, and diseases preventable by vaccination. Nonetheless, the health authorities have reaffirmed the Government's commitment to the goal of health for all by the year 2000. With this in view, the Ministry of Health periodically reviews priorities and accomplishments to ensure that actions are responsive to the real needs of the population.

8.153 The Ministry of Health believes that the improvement of a country's levels of health is essentially a politicosocial process which must be triggered by a broad acceptance of the role of the health sector and which, accordingly, requires close relations with other development sectors. Its principal relationship is with the Ministry of Education, which advises on food and nutrition matters pertaining to the lunch programs at schools and child care centers. It has also established committees for the study and control of alcoholism and drug addiction. The Ministry of Health conducts joint programs for children and adolescents in conjunction with the General Directorate for Sports (Ministry of Defense) and collaborates with the Ministry of Agriculture on problems of pollution in farming areas and on residual insecticide control. It also collaborates with the commission for the study of milk problems.

Colombia

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	28,065,000
Percentage of urban population (as nationally defined)	1983	65.0
Birth rate/1,000 inhabitants	1983	31.0
Mortality rate/1,000 inhabitants	1983	7.0
State of Health Indicators		
Life expectancy at birth	1981	62.1
Infant mortality/1,000 live births	1983	52.0
Maternal deaths/1,000 live births	1979	1.8
Death rate 1-4 years/1,000 children	1977	4.5
Percentage of newborn with a weight of less than 2,500 grams	1977-81	3.4
Availability of calories per capita/day	1979-81	2,494
Availability of proteins (grams) per capita/day	1979-81	55.3
Percentage of deaths due to:		
infectious and parasitic diseases	1977	16.3
tumors	1977	10.2
heart diseases	1977	17.9
motor vehicle traffic accidents	1977	2.8

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
– diphtheria-whooping cough-tetanus (triple vaccine)	1984	60.0
– poliomyelitis	1984	60.0
– measles	1984	52.0
– tuberculosis	1983	79.4
Percentage of population served with potable water	1983	64.6
Percentage of population served by sanitary waste disposal	1983	47.7
Consultations per inhabitant per year	1983	50.0
Number of discharges per 100 inhabitants	1983	6.1
Number of beds per 1,000 inhabitants	1982	1.7
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	7.9
Nurses per 10,000 inhabitants	1983	1.8
Nursing auxiliaries per 10,000 inhabitants	1982	8.2
Health Expenditure		
Health Expenditure per capita (in US$)	1982	50.0
Total health expenditure as a percentage of the GDP	1980	5.4
Percentage of the National Budget dedicated to health	1980	7.7

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.154 Five major objectives were established within the framework of the 1983-1986 national health plan: reduction of morbidity and mortality rates, health education and community participation, expansion of the coverage of primary health care, administrative development and modernization, and technical and scientific modernization of the health sector. In order to continue strengthening the national health system, the Ministry of Health undertook an analysis of regional and local approaches to the programming of services in order to integrate them within a set of unified technical and administrative standards.

8.155 To implement on the sectoral reorganization, the Government completed a survey of health conditions and health sector resources in all 106 regional units in order to obtain information for the subsequent stage of linkage among the various subsectors composing the national health system. With a view to establishing linkage between Social Security and the Ministry of Health, a joint determination was made of potential areas for the coordination of activities. Action was also taken to extend the Ministry's agreement with the National Institutes of Health (USA) and PAHO/WHO for technical and administrative development. The Government's priority of

integrated development in underserved urban and rural areas facilitated health sector coordination with the economic and social sectors. Relationships among the Integrated Rural Development Program, the Integrated Development Plan for the Pacific Coast, and the Ministry of Health were thereby strengthened. In keeping with this approach, integrated programs were being promoted in marginal districts of Bogotá and Cúcuta and in zones in which armed conflicts were taking place.

8.156 The health information system is regarded as a useful tool for promoting development in other components of the sector. Special emphasis was placed on strengthening epidemiological surveillance as an effective instrument for the control of infectious diseases and on evaluation of the activities of health services.

8.157 The Ministry of Health's Human Resource Directorate, together with the National Institutes of Health, designed a comprehensive human resource development program for the training of high-level personnel in areas of present and future priority interest for the country. The Colombian Association of Schools of Medicine collaborated with other countries' schools of medicine in the establishment of subregional organizations, leading to the establishment of the Central American Association of Schools of Medicine. In nursing education, PAHO/WHO cooperated with the Colombian Association of Schools of Nursing (ACOFAEN) on a study concerning the practice of nursing in the health services.

8.158 The National School of Public Health of the University of Antioquia continued to conduct training programs in planning and in strategic management of health programs.

8.159 In environmental health, activities related to the International Drinking Water Supply and Sanitation Decade were promoted, specifically the following national priority programs: a program for improvement, surveillance, and monitoring of water quality and solid waste management based on the adoption of health code regulations and the conducting of two workshops on treatment plant operation and maintenance to enable Colombia's six largest cities (with a combined population of approximately 10 million) to improve water quality without enlarging treatment plans; and a leak detection and elimination program (PRONCOPE), under which workshops on pitometry, macrometering, and water losses were held in Cali, Bucaramanga, and Barranquilla. The Government's environmental sanitation strategy is to promote horizontal technical cooperation so that firms with a higher level of technical and administrative development may extend support to less developed enterprises.

8.160 In the area of environmental hazards and pollution, four workshops on environmental impact studies, evaluation of chemical environmental hazards, and environmental health and the use of pesticides were held.

8.161 The National Institute of Health organized a national committee of experts to advise the Ministry of Health and the Presidency of the Republic on the consequences to human health of the use of herbicides to destroy coca and marijuana fields.

Health promotion and disease control

8.162 The National Planning Office and the Ministry of Health, with cooperation from UNDP and PAHO/WHO, organized an interinstitutional workshop to coordinate the policies of the various food and nutrition institutions and determine lines of action for the years ahead, notably the establishment of an adequate nutrition surveillance system. The survey on nutrition in primary care, carried out at the School of Interdisciplinary Studies of Javeriana University, was completed.

8.163 The Ministry of Health has adopted an intensive scheme of specific actions for in-

fant survival. To this end, activities aimed at controlling acute diarrheal diseases through oral rehydration were intensified. The National Institute of Health increased the production of salts and conducted an intensive educational drive through the media. The Government defined its family planning policy and decided to concentrate on those geographic areas with the highest rates of infant morbidity and mortality. In conjunction with the Latin American Center for Perinatology and Human Development (CLAP), a study was carried out on the care of the premature infant.

8.164 In the oral health field, training was provided to technicians in charge of a salt fluoridation program, and a dental caries survey was continued in Antioquia. Upon completion of the first stage of the drug addiction control program, it was found that its objectives in the areas of prevention, epidemiology, and training were achieved, leading to the formulation of a second stage. A program and a financing proposal were prepared with a view to improving the central laboratory at the National Institute of Health to convert it into a reference center for quality control, staff training, and development of regional and local centers. The four sets of simplified radiology equipment installed in the Department of Antioquia continued in service; auxiliary personnel were trained in the operation of this equipment; and a protocol on evaluation of the quality and efficiency of this equipment was defined. In the area of essential drugs, the University of Antioquia, with PAHO/WHO cooperation, updated and modernized a basic list of such drugs and initiated operational research.

8.165 The Expanded Program on Immunization (EPI) was strengthened with the support of the Executive Branch. In 1984, vaccination coverage (poliomyelitis and measles) of infants less than 1 year of age increased in Colombia from 43% to nearly 80%. Antimalaria operations were redirected toward specific areas, including training and research. In Antioquia, malaria control was integrated into the local health service. In food protection, personnel were trained, information systems were organized, and procedures and techniques of the laboratory network were standardized.

8.166 With respect to foot-and-mouth disease, priority aspects and reporting systems were worked out. The first Latin American meeting on women and health, which was held during the year, formulated basic lines of action for governments and private organizations. In the emergency relief and disaster preparedness program, the experience of Popayán was examined and a program to prepare hospitals for disaster situations was initiated.

Mobilization of Technical and Financial Resources

8.167 **Technical Cooperation Among Developing Countries (TCDC):** Cooperation and the exchange of knowledge and experience with other countries were accomplished mainly through international resources. Special mention should be made of the meeting of ministers of health and social security authorities held in Medellín in July, in which 14 countries participated; the meeting of faculties of schools of medicine for Central America and the Andean Pact countries, organized by the Pan American Federation of Associations of Faculties (Schools) of Medicine (FEPAFEM) and the Colombian Association of Faculties of Medicine (ASCOFAME); the international group on health prospects; and the Pan American Conference on Medical Education (FEPAFEM-ASCOFAME). Work went forward on an assessment of the country's potential for providing technical cooperation, and an expanded development program was designed for 1985.

8.168 **International cooperation**: *FAO* provided US$900,000 for an African fever program; *UNFDAC*, US$360,000 for a drug

addiction control program; *IDB*, US$200 million for water supply and basic sanitation for Medellín and rural communities (5 years—Rio Grande project); *IICA*, US$100,000 for animal health; and *TDR/WHO*, US$7,500 for vector control (2 years) and US$70,000 for malaria control (2 years).

8.169 **Bilateral cooperation**: *USAID* provided US$900,000 for a foot-and-mouth disease program; the *Government of the Netherlands*, US$350,000 for tropical diseases; and the *National Academy of Sciences (USA)*, US$117,000 for *Anopheles albimanus* research (3 years).

Cooperation Provided by PAHO/WHO

8.170 **Professional staff assigned to the country:** 9, including the PAHO/WHO Country Representative and advisers in: development of health services and planning, sanitary engineering, veterinary public health, malaria (3), immunizations, and maternal and child health. In addition, a veterinary medical officer assigned to the food control program and a technician assigned to the diarrheal disease control program are stationed in Colombia.

8.171 **Regional and intercountry advisers:** 83, for a total of 333 days, in: maternal and child health, nutrition, mental health, tropical diseases, intrahospital infections, tuberculosis, noncommunicable diseases, venereal diseases, veterinary public health, adult health, workers' health, drugs, textbooks, drug dependency, disaster emergencies, environmental health, urban sanitation, epidemiology, planning, health services, and technology.

8.172 **Short-term consultants (STC):** 63, for a total of 793 days, in: planning, health services, hospital administration and accidents, drugs, sanitary engineering, tuberculosis, pesticides, veterinary public health, textbook program, basic radiology, EPI, aging, virology, and hemorrhagic fever.

8.173 **Fellowships:** 46, for 107 months and at a cost of US$188,706. The areas of study were: environmental health, veterinary public health, Master of Public Health, research, epidemiology, cancer, malaria, genetics, preparation of vaccines, library science, drugs, dentistry, and accidents.

8.174 **Courses, seminars and workshops**: 65, with 1,485 participants, for a total of 372 days and at a cost to PAHO/WHO of US$38,526. The subjects were: emergency preparedness; health, women, and development; human resources; environmental health; veterinary public health; food and nutrition; maternal and child health; chronic diseases; occupational health; epidemiology and preventable diseases; malaria; dengue; mental health; and drug dependency.

8.175 **Grants**: 3, for a total of US$74,000. The entities receiving the grants were the National School of Public Health of Medellín (Meeting of Ministers of Health) ASCOFAME (*Carta médica*), and Pan American Conference on Medical Education.

General Appraisal and Future Trends

8.176 The Government gave high priority to action in the health sector. The President of the Republic personally stressed the importance of the sector within the policy of peace, solidarity, and social justice. The Ministry of Health is committed to revitalizing and reorganizing the sector on the basis of the primary care strategy. National policies and strategies emphasize the need to direct resources toward initiatives exerting an impact on priority health problems. Within this overall framework, technical cooperation is aimed at providing support to priority activities within the sector. Interagency coordination was encouraged and supported.

Costa Rica

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	2,510,500
Percentage of urban population (as nationally defined)	1983	45.0
Birth rate/1,000 inhabitants	1983	30.1
Mortality rate/1,000 inhabitants	1983	3.9
State of Health Indicators		
Life expectancy at birth	1980-85	73.7
Infant mortality/1,000 live births	1983	18.5
Maternal deaths/1,000 live births	1983	0.3
Death rate 1-4 years/1,000 children	1983	1.0
Percentage of newborn with a weight of less than 2,500 grams	1983	9.6
Availability of calories per capita/day	1983	3,056
Availability of proteins (grams) per capita/day	1985	64.0
Percentage of deaths due to:		
infectious and parasitic diseases	1983	4.4
tumors	1983	19.8
heart diseases	1983	28.0
motor vehicle traffic accidents	1981	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1984	77.9[a]
—poliomyelitis	1984	74.2[a]
—measles	1984	79.2[a]
—tuberculosis	1983	81.4
Percentage of population served with potable water	1983	92.8
Percentage of population served by sanitary waste disposal	1983	94.8
Consultations per inhabitant per year	1982	2.6
Number of discharges per 100 inhabitants	1982	11.6
Number of beds per 1,000 inhabitants	1982	3.3
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	10.0
Nurses per 10,000 inhabitants	1983	9.6
Nursing auxiliaries per 10,000 inhabitants	1983	22.8
Health Expenditure		
Health Expenditure per capita (in US$)	1983	71.3
Total health expenditure as a percentage of the GDP	1983	5.7
Percentage of the National Budget dedicated to health	1983	28.0

... Data not available.
[a] First semester 1984.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.177 The Government has undertaken a new effort aimed at sectoral development and integration of the health services. A situational analysis was carried out and alternative arrangements for a functional integration of the national health system were examined. As a result, the Ministry of Health and the Costa Rican Social Security Agency entered into an integration agreement establishing complementary functions, responsibilities, and mechanisms for the joint administration of available infrastructure and resources. As a first step toward integration of health services in the regions, the Ministry and the Social Security Agency jointly conducted a survey of health conditions in the Huetar Atlántica region. Progress was also achieved in integrating the operation of health services of the Costa Rican Social Security Agency and the Ministry of Health in 34 of the country's cities and towns. Highlights of these joint operations were an evaluation of programs and the training of staff on new national and international strategies, and the development of mechanisms for regional participation in the process

of sectoral linkage. The risk approach has gradually been incorporated into local programming.

8.178 As a result of the critical economic condition, the Ministry and the Social Security Agency focused their attention on the supply, management, and financial and accounting areas, achieving significant gains in the effective use of institutional funds.

8.179 Given the need to renew and adjust the infrastructure for the programs to extend the coverage of primary health care services and to develop sector-wide planning, management, and evaluation systems, projects in each of these areas were developed as part of the Plan for Priority Health Needs in Central America and Panama (including infant survival and environmental sanitation).

8.180 National activities in human resource development were directed to linking training institutions with users of human resources to align occupational and educational profiles more closely with national policies and population needs. The following activities were conducted for this purpose: a workshop reviewing the curriculum of the School of Medicine; a seminar-workshop on teaching-service integration in nursing, medicine, dentistry, and nutrition; design of a family nursing care curriculum; courses on the risk approach for faculty of the School of Nursing and for nursing auxiliaries; a preliminary draft of a human resource development project for the country; and training of multidisciplinary staff at the regulatory and regional office levels and of instructors in educational technology.

8.181 The Ministry of Health, through its Environmental Sanitation Division, continued its programs in food control, environmental pollution control, industrial safety, and solid waste management. Working through the health regions, it promoted the preparation and implementation of urban sanitation programs for 11 communities with populations of more than 15,000, including portions of the metropolitan area of San José. A US$2,068,000, 4-year program of rural sanitation was prepared for scattered populations of three health regions.

8.182 The Costa Rican Water and Sewage Institute continued its programs to expand the water supply coverage and strengthen existing networks. The Institute currently has well-advanced projects amounting to a total of US$59 million, of which US$40 million is virtually financed. Technical strengthening and staff training aimed at improving the Institute's operating capacity continued during the year.

Health promotion and disease control

8.183 The analysis of data from the national nutrition survey, including the review of standards for the assessment of growth and nutritional status, was completed in 1984. The new procedures were scheduled to be implemented in 1985. Pursuant to the decision to implement uniform maternal and child health care standards in all facilities of the Ministry of Health and the Costa Rican Social Security Agency, a unified maternal and child clinical history form was adopted for use in all health centers, posts, and clinics in the service area of one of the country's principal hospital centers (Hospital Mexico). In addition, considerable effort was given to the preliminary work on developing a nation-wide prenatal program, and the risk approach was widely disseminated as the new basis for new planning and programming services. Lastly, approval was given to a PAHO/Kellogg project to be carried out by the Ministry of Health, the University of Costa Rica, and the Social Security Agency to foster nation-wide progress in maternal and child care.

8.184 In the preventive oral health program, coverage was further increased and staff training continued. Studies were being made to determine the feasibility of distributing fluoridated table salt. In mental health, a National Mental Health Commission was es-

tablished and was developing a modular national program in this field. Drug addiction surveys and workshops were conducted. Training in the detection and referral of people with psychiatric problems was provided to community personnel in one region of the country. Staff training in disaster preparedness continued.

8.185 The country's current health policy emphasizes disease prevention. Accordingly, the Ministry of Health and the Social Security Agency continued their efforts to strengthen programs extending the coverage of preventive services—especially immunization and control of diarrheal diseases and acute respiratory infections—and developing preventive schemes for priority chronic diseases prevalent in the country, such as diabetes, hypertension, chronic rheumatic diseases, and diseases of the elderly. In the course of the year, a number of training workshops and seminars were conducted for health personnel at every level and from both institutions for the purpose of fostering the inclusion of these new schemes in the health services. It was planned to assign new graduates in public health to the health regions in order to give more impetus to the development of these programs.

8.186 The Epidemiology Division of the Ministry of Health is responsible for programs for the control of tuberculosis, sexually transmitted diseases, public health dermatology (leprosy), epidemiological surveillance of other communicable diseases, malaria, and cancer. Successful outcomes of these programs have influenced a shift in the patterns of morbidity and mortality, leading to the opening of new action fronts (such as perinatal care and congenital diseases).

Mobilization of Technical and Financial Resources

8.187 **Technical Cooperation Among Developing Countries (TCDC)**: Costa Rica entered into agreements with Panama (border health) and Belize. An agreement with Nicaragua was being prepared.

8.188 **International cooperation**: *IDB* gave US$741,000 for health service maintenance, US$28.3 million for expansion of the water supply systems of middle-sized towns, including Puntarenas, and rural areas, and US$414,000 for a study on housing and health problems; *WFP* gave US$1 million for community development.

8.189 **Bilateral cooperation**: *USAID* gave US$760,000 for administrative reorganization of the Costa Rican Social Security Agency.

8.190 **Foundations**: The *W. K. Kellogg Foundation* donated US$650,500 for maternal and child health and teaching-service linkage.

Cooperation Provided by PAHO/WHO

8.191 **Professional staff assigned to the country**: 5, including the PAHO/WHO Country Representative and advisers in: health services, engineering, administration, nursing, and maternal and child health.

8.192 In addition, several locally recruited contractors provided technical cooperation in areas such as supplies, mental health, financial management, computers, and research.

8.193 **Regional and intercountry advisers**: A number of advisers rendered services in: nursing, epidemiology, maternal and child health, administration, sanitary engineering, radiology, information systems, and blood banks.

8.194 **Short-term consultants (STC)**: 10, for a total of approximately 600 days, in: supplies, diarrheal diseases, administration, financial management, nutrition, mental health, and radiodiagnosis.

8.195 **Fellowships**: 35, for a total of

US$119,325, in the following study areas: public health, ophthalmology, vascular surgery, administration, maternal and child health, environmental sanitation, and alcoholism and drug addiction. Recipients of the fellowships were employees of institutions such as the Ministry of Health, the Social Security Agency, the University of Costa Rica, the National University, the Costa Rican Institute for Research and Training in Nutrition and Health (INCIENSA), and the National Institute of Alcoholism (INSA).

8.196 The country hosted 55 fellowships from other Latin American countries, in the following areas: nursing, maternal and child health, primary care, dentistry, medical records, demography, cancer, equipment maintenance, and oral rehydration.

8.197 **Courses, seminars, and workshops**: 60, with the participation of 3,312 employees of the Ministry of Health, the Social Security Agency, the University of Costa Rica, and the National Autonomous University. PAHO/WHO's financial contribution amounted to US$3,525,184. These events were concerned primarily with primary care, administration, the risk approach, the maternal and child clinical history form, nursing, oral health, mental health, and environmental sanitation. In addition, 70 Costa Rican employees participated in international meetings at a cost of US$34,112.

8.198 **Grants**: 7, totaling US$155,415, were awarded to the Ministry of Health, the Social Security Agency, and the University of Costa Rica for: activities under the Plan for Priority Health Needs in Central America and Panama, development of the Health Sector Secretariat, development of epidemiological surveillance (needs of the elderly), a study on the feasibility of salt fluoridation, malaria surveillance and control, a study of angiostrongylosis, and preparation of audiovisual materials for the School of Nursing of the University of Costa Rica.

General Appraisal and Future Trends

8.199 The year was marked by significant progress in restructuring of the health sector, integration of Ministry of Health and Costa Rican Social Security Agency services in various parts of the country, the continuing education program, and the evaluation and reformulation of primary care programs of major national importance. Progress also was made in shaping the national health system. These activities imply a structuring of Costa Rica's health services along more modern, dynamic, and administratively rational lines better attuned to the country's health conditions and available health resources.

8.200 PAHO/WHO provided technical cooperation to both the Ministry of Health and the Costa Rican Social Security Agency in various priority areas. It also collaborated with the Costa Rican Water and Sewage Institute, the universities, and other health-related institutions.

8.201 The process of transformation as well as the technical cooperation made available for that purpose were hampered by a number of constraints, notably the persistence of critical conditions in the domestic economy and budgetary constraints on the program. Considerable importance therefore is attached to the formulation and negotiation of projects prepared within the Plan for Priority Health Needs in Central America and Panama and to the implementation of resource-mobilization mechanisms.

8.202 Costa Rica's health authorities have reaffirmed the political commitment to speeding up the integration and broadening the provision of health services, strengthening the mechanisms for an expanded primary health strategy, increasing the operating capacity of the sector (organized and managed as a national health system), and developing a new model of integrated health care.

Cuba

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	10,000,000
Percentage of urban population (as nationally defined)	1983	70.3
Birth rate/1,000 inhabitants	1983	16.7
Mortality rate/1,000 inhabitants	1983	5.9
State of Health Indicators		
Life expectancy at birth	1980-85	73.6
Infant mortality/1,000 live births	1983	16.8
Maternal deaths/1,000 live births	1983	0.3
Death rate 1-4 years/1,000 children	1983	0.8
Percentage of newborn with a weight of less than 2,500 grams	1983	8.5
Availability of calories per capita/day	1983	2,929
Availability of proteins (grams) per capita/day	1983	77.0
Percentage of deaths due to:		
infectious and parasitic diseases	1983	2.0
tumors	1983	19.1
heart diseases	1983	29.1
motor vehicle traffic accidents	1981	2.9

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	86.1
—poliomyelitis	1983	93.6
—measles	1983	72.1
—tuberculosis	1983	95.9
Percentage of population served with potable water	1982	61.2
Percentage of population served by sanitary waste disposal	1982	31.0
Consultations per inhabitant per year	1983	5.2
Number of discharges per 100 inhabitants	1983	14.6[a]
Number of beds per 1,000 inhabitants	1983	6.1[b]
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	19.1
Nurses per 10,000 inhabitants	1983	26.5
Nursing auxiliaries per 10,000 inhabitants	1983	9.0
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	1984	21.0[c]

... Data not available.
[a] Admissions. [b] Includes private service beds. [c] Education and health budget.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.203 Activities focused on upgrading the effectiveness of primary services provided through polyclinics, hospitals, and rural health posts on the basis of the community medicine model. With the same objective, improvements were made to physical plants and priority was given to the integration of teaching-service facilities for training health personnel in the application of the primary care strategy. An analytical study of the network of primary care services, prepared during the year, should make it possible to develop quantitative information on investments, operating costs, productivity, and the impact of the services on the health and well-being of the population.

8.204 In human resources, highlights included the analysis and improvement of information systems for use in personnel planning and the performance of a study on the utilization of middle-level technicians in health, particularly those in the nursing profession. The use of appropriate teaching methods and pro-

cedures was encouraged, training in modern technology was provided, and improvements were instituted in the teaching-learning process for the benefit of medical, dental, and veterinary students and of middle-level technical staff of the health services.

8.205 Within the context of the International Drinking Water Supply and Sanitation Decade, the Government, together with ECLA, CEPIS, and PAHO/WHO, prepared a proposal on the provision of technical and financial cooperation for improvements to the water and sewage facilities of the city of Havana; the proposal was submitted to UNDP and other financing agencies. A study on the pollution of Havana Bay and alternative solutions to this problem also was made. Cuba's affiliation with the Pan American Network of Information and Documentation in Engineering and Environmental Sciences (REPIDISCA) provided an effective means of strengthening the national system of information on sanitary engineering through the training of librarians responsible for the management of such data.

Health promotion and disease control

8.206 Studies were conducted on problems related to eating habits—obesity, diabetes, arteriosclerosis, and arterial hypertension. In addition, the Government and the World Food Program (WFP) signed an agreement for a new project entitled "Development of the Dairy Sector" that will support the country's programs in health, rural development, community participation, and food production.

8.207 To strengthen the maternal and child health services and activities related to population dynamics, further work was done on operations research and the development of statistical research methods, and those activities were intensified and expanded in the areas of sex education and information on fertility regulation. An adolescent health program was being organized for the purpose of providing comprehensive attention to the growing problems of this group. A program for epidemiological monitoring of the health of workers was formulated, as was a study on designation of the Institute of Labor Medicine as a PAHO/WHO Collaborating Center. In gerontology and geriatics, a refresher course was conducted and a study on the health of the elderly was carried out. In oral health, the dental care services for children were strengthened, as was the fluoride utilization program.

8.208 Disease prevention and control actions within the Expanded Program on Immunization (EPI) included improvements to the cold chain and to the quality of vaccines produced and used in the country. Cuba continued to produce measles and antimeningococcal vaccines and initiated the production of viral vaccines against mumps and rubella. The use of oral rehydration was further expanded as a means of controlling diarrheal diseases.

8.209 In epidemiological surveillance, the educational program in epidemiology was strengthened with the aim of providing students with a greater ability to analyze health problems, prescribe solutions, formulate and evaluate schemes for the prevention and control of diseases of national importance, and diagnose the health situation and its trends as a prerequisite to planning.

8.210 In regard to noncommunicable diseases, an integrated program was developed that will make possible the design of innovative strategies in this field. The Project for Regional Monitoring of Integrated Chronic Disease Control Programs (MORE) was being implemented in two of the country's municipalities.

8.211 Activities in priority areas included a Latin American and Caribbean meeting on preparations for the World Conference to be held in 1985 to review and assess the achievements of the United Nations Women's Decade. The Federation of Cuban Women participated actively in these preparations.

Mobilization of Technical and Financial Resources

8.212 A total of 2,030 researchers in 219 units were engaged in health research. Initial steps were taken to integrate these activities within a system; with this in view, a science and technology area was established within the Ministry of Health to assist in concentrating projects according to subject and focusing available resources on priority problems. In technology, new prenatal and postnatal health care procedures were developed, a study on factors posing a risk to the central nervous system in the first year of life was carried out, and biotechnology activities were pursued. Policy definition and the evaluation, development, adaptation, transfer, and utilization of technologies were identified as basic priorities.

8.213 **Technical Cooperation Among Developing Countries (TCDC)**: The Government designated 3,044 health workers to provide service in 27 African, Asian, and Latin American countries: 1,675 physicians, 58 oral health specialists, 742 nurses, 516 technicians, and 53 support workers. Also within the TCDC concept, the Government maintains a fellowship program at the disposal of the 71 Third World countries; by the end of the year, more than 700 physicians and oral specialists from other countries had graduated in Cuba. Cuba reformulated its strategy of scientific and technical cooperation to collaborate more effectively with other countries in the Region. As a result, the program of bilateral cooperation with Nicaragua was strengthened, and significant gains were made in the coordination of joint efforts with Bolivia and Mexico.

8.214 **International cooperation**: *UNDP* gave US$188,000 for the production of biologicals and neurophysiological development of infants; *UNFPA* provided US$800,500 for programs on maternal and child health and population dynamics, demographic studies, and training; and *UNICEF* gave US$82,000 for a project on water supply and sanitation services and nutritional surveillance.

Cooperation Provided by PAHO/WHO

8.215 **Professional staff assigned to the country**: A medical officer in charge of coordinating programs (the PAHO/WHO Country Representative) and a medical officer who acts as technical coordinator and is responsible for TCDC.

8.216 **Regional and intercountry advisers**: 158, for a total of 1,495 days, in the following areas: development of health systems, coverage extension and planning of health programs, human resources, infectious and parasitic diseases, oral health, essential drugs and vaccines, veterinary medicine, food hygiene, new technologies, environmental health, information and documentation systems, gerontology and geriatrics, occupational health, and sex education.

8.217 **Short-term consultants (STC)**: 31, for a total of 510 consultant days, in: maternal and child health and population dynamics, human resources, infectious and parasitic diseases, hospital administration, science and technology organization, environmental health, chronic diseases, oral health, sex education, health education, educational technology, and gerontology.

8.218 **Fellowships**: 138, for a total of US$224,553, in: human resources, health education, environmental health, maternal and child health, primary care, production of biologicals, disease prevention and control, essential drugs, gerontology, chronic diseases, scientific and technical information, oral health, and veterinary medicine.

8.219 **Courses, seminars, and workshops**: 15, dealing with pesticides, immunization, adolescence and youth, breastfeeding, childhood accidents, oral rehydration, growth and development, health research, the *Codex*

Alimentarius, chronic diseases, REPIDISCA, rapid diagnosis of tuberculosis, parasitic infections, medical education, and natural disasters. PAHO/WHO's contributions for courses and seminars came to US$9,600 for local expenses. The assistance of 30 regional and 36 temporary consultants was also available for these events at an estimated cost of US$93,852.

General Appraisal and Future Trends

8.220 The national health system continued to place high priority on developing and strengthening the community medicine approach at the level of all polyclinics, hospitals, and rural medical posts, which together constitute the regionalized network of primary health services for the entire population. Especially noteworthy were the institution of new technologies for the diagnosis and treatment of disease, the theoretical and practical training provided to health personnel at various levels and in various program areas, the development and strengthening of the system of epidemiological surveillance, and the improved utilization of the scientific and technical information system.

8.221 The country's undeniable advances in health led to increased technical cooperation requests from other developing countries. To meet this commitment, the national health system sends medical and technical contingents overseas and receives fellows and visitors from other countries to exchange experience as to the models best suited for achieving universal primary health care coverage.

8.222 In regard to PAHO/WHO technical cooperation, the Government implemented 17 projects resulting from the identification of priority areas. This analysis, carried out in 1983 by multidisciplinary teams consisting of national officials and PAHO/WHO staff, was aimed at strengthening the capacity of the Ministry of Public Health and providing for optimal use of international technical cooperation. Similar joint analyses have since been made in order to improve the programming of cooperation between the country and PAHO/WHO and to maximize the utilization of resources.

Dominica

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	76,500
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1983	24.3
Mortality rate/1,000 inhabitants	1983	5.1
State of Health Indicators		
Life expectancy at birth	...	74.0[a]
Infant mortality/1,000 live births	1983	13.9
Maternal deaths/1,000 live births	1983	0.0
Death rate 1-4 years/1,000 children	1983	0.4
Percentage of newborn with a weight of less than 2,500 grams	1983	10.5
Availability of calories per capita/day	1979-81	2,018
Availability of proteins (grams) per capita/day	1979-81	55.4
Percentage of deaths due to:		
infectious and parasitic diseases	1983	...
tumors	1983	21.0
heart diseases	1983	23.0
motor vehicle traffic accidents	...	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	86.0
—poliomyelitis	1983	85.0
—measles	1983	62.0
—tuberculosis	1983	77.0
Percentage of population served with potable water	1983	77.0
Percentage of population served by sanitary waste disposal	1980	86.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1983	3.0
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	3.6
Nurses per 10,000 inhabitants	1983	16.0
Nursing auxiliaries per 10,000 inhabitants	1980	4.1
Health Expenditure		
Health Expenditure per capita (in US$)	1978	4.3
Total health expenditure as a percentage of the GDP	1978	21.0
Percentage of the National Budget dedicated to health	1978	15.0

... Data not available.
— None.
[a] Age for women. Age for men, 68.0 years.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.223 Dominica has experienced important administrative changes, the most striking being the decentralized organization and management of the community-based services. Also of importance was the implementation of the National Health Plan, the development of nursing services, the implementation of the primary care nurse program, and the planning and realization of a workshop to orient nurses in Caribbean standards of nursing care.

8.224 In human resource development, health personnel data collected during 1983 received a critical review, and planning was under way for a national workshop to be held during 1985 on organizational support, strategy, and policy formulation for health personnel development.

8.225 In the continuing development of primary health care throughout the country, activities in environmental health were aimed at program management, solid waste disposal for Roseau, vector control, and the develop-

ment of a water and sanitation sectorial report to assist in setting priorities for national needs and projects. The water and health agencies were represented at a subregional workshop in water quality control, and an environmental health officer received training overseas in vector control.

8.226 Dominica is the headquarters of the PAHO/WHO Caribbean Health Laboratory Project which provides services to all of the Caribbean area in the examination and reporting of histology, cytology, and bone marrow specimens. It also provides active pathology consultation in patient care, assists in the establishment of rural laboratories, and gives training courses in laboratory management and hepatitis testing.

Health promotion and disease control

8.227 Maternal and child health is incorporated into the country's primary health care system. There has been a progressive restructuring of the delivery of the health services accompanied by relevant training and placement of staff. To this end, the health information system has been geared to provide the necessary information, particularly in maternal and child health, such as coverage by the various service components. Progress was made in promoting family life education in schools and in implementing programs in the Adolescent Center.

8.228 Progress was achieved in the follow-up of the family nurse practitioner program and continued guidance was provided to its graduates. Progress also was made in the analysis of perinatal survey results. PAHO/WHO provided administrative and technical support for UNFPA projects—including reports, fellowships, and procurement of supplies—and cooperation in carrying out two family life education workshops for teachers.

8.229 A revised food and nutrition policy for Dominica was prepared with CFNI assistance. The nutrition strategy continues to promote breastfeeding. Activities of the PAHO/WHO-UNICEF Joint Nutrition Support Program (JNSP) were in progress at year's end. In the country's immunization program, the Government, with CAREC's assistance, developed and strengthened its surveillance and laboratory capabilities. Progress also was achieved in developing the leprosy control program.

8.230 PAHO/WHO's Disaster Preparedness Team continued to support Dominica's activities in this area. The Organization collaborated by reinforcing zoonoses surveillance and by monitoring the development of the veterinary diagnostic laboratory.

Mobilization of Technical and Financial Resources

8.231 **International cooperation**: Assistance was received from *UNICEF* for a joint nutrition program and for child care; from *UNDP* for laboratory services for the Eastern Caribbean health services; from *UNFPA*, US$89,435 for a maternal and child health and family planning program; from *International Planned Parenthood Federation* (IPPF), for family planning; and from *CARICOM*, for training in community health administration.

8.232 **Bilateral cooperation**: the *International Development Research Center of Canada* (IDRC) assisted in the evaluation of a primary care nurse program; *USAID* gave US$203,703 for a program of drug supply (2 years; technical cooperation only) and for a program on primary health care; the *Overseas Development Administration of Britain* provided for training of personnel (technical cooperation); the *Government of Holland* gave US$444,444 to upgrade the Princess Margaret Hospital; the *Government of Belgium* provided US$80,000 to upgrade the major health center in Roseau; and the *Government of France* gave for hospital and primary care facilities.

Cooperation Provided by PAHO/WHO

8.233 **Professional staff assigned to the country**: 2, a pathologist and the manager of the Caribbean Laboratory Project.

8.234 **Regional and intercountry advisers**: Considerable cooperation comes from the Organization's staff located in various parts of the Caribbean as well as from Headquarters, CAREC, and CFNI. A team of consultants from the Caribbean Program Coordination's (CPC) Office collaborated with the Government in health systems development, disaster preparedness, disease control, environmental health, zoonoses, and vector control.

8.235 **Fellowships**: 7, in: management, science education, community health, hepatitis, medical records, nursing education, meat and other foods. PAHO/WHO's contribution was US$32,670. In addition, training was provided for six nationals in laboratory management (Saint Lucia), ward management (Barbados), community health nursing (Bahamas), and meat and food inspection (Jamaica), utilizing European Economic Community-Caribbean Community (EEC-CARICOM) Secretariat funding.

8.236 **Grants**: PAHO/WHO provided US$3,000 for a study on women's groups.

General Appraisal and Future Trends

8.237 The Government is fully committed to primary health care, and the expectation is that PAHO/WHO's cooperation will continue. PAHO/WHO will promote the building of professional competence and self-sufficiency within the maternal and child health team in Dominica, using the UNFPA project as its focus. A review of the maternal and child health manual and an assessment of postnatal services should be carried out. Local training in neonatal care, with the assistance of CLAP, is also planned.

8.238 PAHO/WHO's assistance in environmental health had greater impact than in previous years, allowing a marked progress to be made in the two priority areas of solid waste management and vector control. The full implementation of primary health care at the district level, to which the Government remains committed, will require further assistance in field operations.

8.239 As a collaborative effort with the Caribbean Center for Development Administration (CARICAD) and the CARICOM Secretariat, an outline proposal was prepared for a 2-year inservice program in community health management to be implemented under the University of the West Indies (UWI) Challenge Outreach Scheme. The program is intended to meet the needs of Dominica (and other developing countries) for training health staff in health services management. The proposal is acceptable to the Ministry of Health of Dominica and has been approved by the Board of the Faculty of Medicine of the UWI. Implementation has been deferred, however, until 1985 to permit further consultations among staff of the Ministry of Health. This program and other inservice training activities will receive financial support from the EEC-CARICOM Secretariat grant.

Dominican Republic

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	6,416,300
Percentage of urban population (as nationally defined)	1981	48.0
Birth rate/1,000 inhabitants	1985	32.4
Mortality rate/1,000 inhabitants	1982	4.6
State of Health Indicators		
Life expectancy at birth	1985	65.0
Infant mortality/1,000 live births	1982	69.0
Maternal deaths/1,000 live births	1982	7.0
Death rate 1-4 years/1,000 children	1982	7.7
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,130
Availability of proteins (grams) per capita/day	1979-81	47.3
Percentage of deaths due to:		
infectious and parasitic diseases	1982	10.9
tumors	1982	6.6
heart diseases	1982	12.6
motor vehicle traffic accidents	1982	2.1

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	24.4
—poliomyelitis	1983	22.4[a]
—measles	1983	23.4
—tuberculosis	1983	40.8
Percentage of population served with potable water	1983	65.0
Percentage of population served by sanitary waste disposal	1983	27.5
Consultations per inhabitant per year	1983	0.9
Number of discharges per 100 inhabitants	1983	4.9
Number of beds per 1,000 inhabitants	1983	1.2
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	5.9
Nurses per 10,000 inhabitants	1983	1.0
Nursing auxiliaries per 10,000 inhabitants	1983	10.2
Health Expenditure		
Health Expenditure per capita (in US$)	1983	7
Total health expenditure as a percentage of the GDP	1983	3.7
Percentage of the National Budget dedicated to health	1983	11.8

... Data not available.

[a] Immunization campaign data (children 0-3 years old).

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.240 Regional health programming was prepared, the information system was organized, and the comprehensive care model was adopted within the framework of the health policy for 1983-1986. These activities were facilitated by the establishment of a General Directorate for Primary Health Care and its linkage with the Planning Center. Training of personnel in health planning and hospital administration proceeded concurrently.

8.241 Further progress was made on the implementation of the project, financed with the help of an IDB loan, for expansion of health services, institutional development of the Ministry of Public Health and Social Welfare (SESPAS), and improvement of its operating capacity, especially in the areas of information, supplies, maintenance, transportation, and drugs.

8.242 In view of the increase in installed capacity, and considering the changes and increased requirements likely to result from the influx of new external resources, surveys were

made to determine the supply and demand for health services and requirements in human resources. An operational survey of health services in the Santiago area was also carried out with a view to improving their productivity and the use of resources.

8.243 A noteworthy event was the establishment of the essential drug program (PROMESE), under which some 300 generic drugs will be made available at cost to communities. The drug laboratory of the Autonomous University of Santo Domingo (UASD) continued to produce approximately 40 drugs.

8.244 Human resource planning was instituted, together with a staff training program at an interinstitutional level (health, social security, universities). Teaching-service integration activities continued. A Master of Public Health program was inaugurated, with concentrations in administration and epidemiology (41 students with fellowships provided by the Ministry of Health and UASD). In Santiago, the project on administration of health services was carried forward as part of the Regional Program on Advanced Training in Health Services Administration (PROASA). The National Health Communication Center (CENACES) was strengthened as nucleus for priority programs implemented by SESPAS, especially those related to disease prevention and control.

8.245 In environmental health, the Ten-Year Plan continued to be developed with the cooperation of other sectors. Activities in this area included programs to supply water to scattered rural communities, the rehabilitation and expansion of 16 systems, and the completion of training of Dominican personnel on drinking water supply systems. A start was made on the project for institutional development of the National Water Supply and Sewerage Institute (INAPA) in the areas of programming, technical assistance, operations and maintenance; employees of the water fluoridation program and staff responsible for the operation of Santo Domingo's two sanitary landfills received training.

Health promotion and disease control

8.246 With the collaboration of the Maternal and Child Health Division and the Autonomous University of Santo Domingo, the study on infant mortality was continued, a proposal for a diarrheal disease control program was prepared, and criteria were established for an extensive food and nutrition program.

8.247 Hospital activities in the mental health area were examined, and the occupational therapy program was continued at both the service and teaching levels. In oral health, coverage was expanded by extending preventive activities to 600,000 schoolchildren, and a public information program was carried out. Dental care began to be provided in rural areas, and epidemiological and operational research was continued.

8.248 In regard to disease control, an evaluation of the Expanded Program on Immunization (EPI) showed that during the period from January to June the country had achieved a DPT vaccination coverage (third dose) of 18% and a significant coverage of 94% for poliomyelitis vaccination (first dose). The antiparasite campaign conducted during the year covered more than 90% of the population. In addition, arrangements were completed for mass-scale activities in oral rehydration, malaria, and tuberculosis.

8.249 The epidemiological surveillance program was reformulated and implemented in the health regions. Work proceeded on the implementation of a joint Dominican-Haitian malaria control program, with the cooperation of the IDB and PAHO/WHO.

8.250 In veterinary public health, an assessment of the animal health project was made, a rabies control training center was established, and a proposal for improvements to the Biologicals Production and Control Laboratory was formulated.

Mobilization of Technical and Financial Resources

8.251 **Technical Cooperation Among Developing Countries (TCDC)**: The country began to mobilize its resources for the purpose of cooperating with other countries in the areas of planning, human resources, oral health, and operations research.

8.252 Technical cooperation was obtained from other countries in the form of the services of national experts in planning, administration, public health training, research, malaria, epidemiology, oral health, veterinary public health, environmental health, and other areas. These were funded directly by the governments concerned or by PAHO/WHO.

8.253 **International cooperation**: *UNDP* provided US$90,000 for oral health and US$47,161 for mass training; *UNFPA* gave US$73,589 for a family planning program; *IDB* assisted with US$335,000 for the institutional development of INAPA and with US$308,039 for the extension and strengthening of health services; *WHO* and its *TDR* Program gave US$13,600 for bilharzia research and US$10,000 for malaria research.

8.254 **Foundations**: The *W. K. Kellogg Foundation* donated US$111,443 for an administration and family health program.

Cooperation Provided by PAHO/WHO

8.255 **Professional staff assigned to the country**: 5, including the PAHO/WHO Country Representative, who serves as the coordinating medical officer, and advisers in public health administration, environmental health, oral health, and mass training. In addition, three professionals—two environmental health advisers (IDB/INAPA project) and a medical officer (IDB/SESPAS project)—were assigned to extrabudgetary projects in the course of the year.

8.256 **Regional and intercountry advisers**: 34, for a total of 262 days, in: maternal and child health, malaria, oral health, water fluoridation, parasitology, operations research, administration, nutrition, urban sanitation, EPI, population and family health services, human resources, medical care, veterinary public health, nursing, maintenance, scientific-technical information, and environmental health.

8.257 **Short-term consultants (STC)**: 66, for a total of 1,140 days, in: occupational health, environmental health, information systems, malaria, health services, oral health, laboratories, veterinary public health, human resources, mental health, health administration, epidemiology, pharmacy, occupational therapy, maternal and child health, animal health, EPI, disaster preparedness, nutrition, and hematology.

8.258 **Fellowships**: 67, providing a total of approximately 84 fellowship months, at a cost of US$106,205, in the areas of: public health administration, epidemiology and disease control, maternal and child health, oral health, health planning, animal health, environmental health, library science, laboratories, human resources, hospital administration, social medicine, malaria, tuberculosis, health research, veterinary public health, nursing, occupational health, and immunology.

8.259 In addition, PAHO/WHO sponsored the participation of 23 Dominicans in seminars, workshops, and congresses held abroad on cancer of the *cervix uteri*, maternal and child health, disaster preparedness, dentistry/UDUAL, pediatrics, environmental health, breastfeeding, health education, and leprosy control.

8.260 **Courses, seminars, and workshops**: 34 events, with a total of 3,245 participants, involving a financial contribution of US$56,119. The areas of study were malaria, epidemiology, health services, maternal and child health, human resources, environmental

health, nutrition, social welfare, nursing, mental health, and oral health.

8.261 **Grants**: In the course of the year, PAHO/WHO, at the request of national authorities, administered WHO grants totaling US$23,600 for research on malaria and bilharzia.

General Appraisal and Future Trends

8.262 Activities during the year centered around regional health programming and the organization and initial operation of the information system. Priority was given to the formulation of a model for providing comprehensive health care at the primary level, a basic element of the Government's plan for implementing its health policy. The Government assigned special importance to environmental health, the essential drug program, and an intersectoral veterinary public health program. Intersectoral linkage was promoted, as was community involvement in health programs. The high coverage percentages achieved in the poliomyelitis vaccination drive (first dose) and the antiparasite campaign are worthy of note.

8.263 The result of research carried out and in execution is opening up increasingly broader horizons for health work. Along with this, the training of specialized personnel to administer the expanding structure of the health services represents a new element of progress within the system.

Ecuador

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	8,823,000
Percentage of urban population (as nationally defined)	1982	48.7
Birth rate/1,000 inhabitants	1980	28.0
Mortality rate/1,000 inhabitants	1980	7.2
State of Health Indicators		
Life expectancy at birth	1984	65.2[a]
Infant mortality/1,000 live births	1980	63.9
Maternal deaths/1,000 live births	1980	1.9
Death rate 1-4 years/1,000 children	1980	8.6
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,114
Availability of proteins (grams) per capita/day	1979-81	50.1
Percentage of deaths due to:		
infectious and parasitic diseases	1980	17.4
tumors	1980	6.1
heart diseases	1980	12.4
motor vehicle traffic accidents	1980	3.7

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	31.5
—poliomyelitis	1983	32.5
—measles	1983	35.1
—tuberculosis	1983	87.1
Percentage of population served with potable water	1983	38.2
Percentage of population served by sanitary waste disposal	1983	42.9
Consultations per inhabitant per year	1983	80.0
Number of discharges per 100 inhabitants	1983	2.5
Number of beds per 1,000 inhabitants	1982	1.9
Human Resource Indicators		
Physicians per 10,000 inhabitants	1984	13.9
Nurses per 10,000 inhabitants	1984	3.4
Nursing auxiliaries per 10,000 inhabitants	1983	13.4
Health Expenditure		
Health Expenditure per capita (in US$)	1982	34
Total health expenditure as a percentage of the GDP	1982	6.0
Percentage of the National Budget dedicated to health	1983	6.9

... Data not available.
[a] Age for women. Age for men, 62.8 years.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.264 In the process of extending the coverage of health services to disadvantaged urban dwellers and the rural population, the national strategies, objectives, and goals were focused on two of the basic areas considered essential to achieving that objective: improvement in the efficiency, effectiveness, and structure of health services, and delivery of primary health care with community participation. Major activities within this process included: the development and improvement of sectoral planning systems; establishment of an integrated local programming methodology based on the diagnosis of community health conditions and operating within a framework of functional regionalization of health services and a decentralized national administration; revision of the system for the monitoring, supervision, and control of health activities and their administrative support processes; and definition of the national health system.

8.265 A short- and medium-term administrative development scheme was formulated for use in the improvement of operations at central and regional levels, health areas, and local services. A computerized information

system developed under the health service maintenance program should soon make it possible to monitor the operation of installations and equipment. An activity responsive to a high priority in health care is the essential drug program, under which consideration is being given to supplying medications and biological substances free of charge for mothers and for children under age 5.

8.266 In human resources, measures are being taken to adapt the study plans to the requirements of health programs. There is a shortage of specialists; efforts are being made to solve this problem by means of a program of residencies financed by local fellowships and a plan under which graduates of a program can be stationed where the need for them is greatest. Inservice training courses for nursing auxiliaries continued to be offered, resulting in the reduction of the shortage in this personnel category. Improvements were made in the national postgraduate course in health administration and research, as well as in the continuing education program conducted for technical, administrative, and maintenance staff of the health services. Further progress was made in the development of the Educational Technology Center and its integration into the Institute of Pedagogy of the Central University.

8.267 In environmental health, the project for institutional development of the Municipal Sewerage Company of Guayaquil was completed, the master sewage plan was being implemented, and sanitary landfills were being established in outlying areas of that city. A research study on low-cost, substitute methods of excreta disposal was completed. The National Congress approved legislation on the financing of rural sanitation works. Work went forward on the rehabilitation of water supply and sewage systems in the areas affected by the 1982-1983 floods. Institutional and human resource development continued at the Ecuadorian Institute of Sanitary Works (IEOS), and significant progress was achieved in improving the Institute's linkage with the Ministry of Public Health.

Health promotion and disease control

8.268 The consultation coverage levels achieved were 49% for pregnant women and 54.7% for infants under age 1. These percentages are low in relation to the relevant supply capacity, and the hope is to raise them once the system of integrated local programming has been implemented nation-wide. A step in that direction was the formulation of an integrated infant mortality reduction program including vaccinations, food systems, breastfeeding, the monitoring of growth, and the development of a program for the control of acute respiratory infections.

8.269 The vaccination coverage rates achieved to September (1984) by the Expanded Program on Immunization (EPI) were 36% for DPT/poliomyelitis (third dose) vaccine, 40% for measles vaccine, and 79% for BCG. Five national workshops were conducted for the training of EPI personnel. The guide for epidemiological surveillance of the EPI diseases was approved, and the standards and training modules for technical professionals were updated.

8.270 The food supplement program was extended to undernourished children under age 4. Education and prevention activities especially designed for mothers, infants, and schoolchildren were conducted in the field of oral health. Of the Ministry of Public Health's operational units, 48% have facilities and equipment for the provision of dental services. A 5-year diarrheal disease control program was formulated, and 12 hospital oral rehydration units were set up in six provinces.

8.271 The procurement of a significant quantity of insecticides made possible the expansion of vector control activities in malaria control programs. In addition, a project was formulated that would provide US$9 million for the procurement of equipment and supplies for use in malaria control in the Province of Esmeraldas. The serological survey on Chagas' disease continued, as did the studies

on the biology and taxonomy of the vectors of onchocerciasis, which is present in a limited area of the Province of Esmeraldas. Training was provided in leprosy and plague control and the handling of disaster emergencies.

8.272 In keeping with commitments to the South American Commission for the Control of Foot-and-Mouth Disease, Ecuador carried out a macro-characterization of the local forms of the disease with a view to deciding on strategies for its control. A pilot foot-and-mouth disease control program was conducted in the Santo Domingo de los Colorados area, where 300,000 doses of oil-adjuvanted vaccine were administered. The technical standards of the rabies control program were redesigned, its information system was revised, and a program was prepared for Guayaquil.

Mobilization of Technical and Financial Resources

8.273 **International cooperation:** *UNFPA* donated US$2.1 million for maternal and child health and family planning program in the Provinces of Guayas and Chimborazo (4 years); *UNICEF*, US$303,390 for primary health care in the underserved urban area of Guayaquil (program started in 1983 and approved for 2 years, 6 months); *IDB*, US$12.2 million for a 4-year program (in operation) for water supply for various localities in El Oro, US$17 million for a 4-year program (in operation) for sanitary landfills and sewage service in Guayaquil, US$12.2 million for a 4-year program (in operation) to consolidate the Quito water supply system, US$28 million for a 4-year program (approved in 1984) for the Quito water supply system and first stage of Mico-Tambo project, US$400,000 for a 2-year program (in operation) for the institutional development of EMAG, US$260,000 for a study on marginal costs of water rates (technical cooperation funds), US$710,000 for a 2-year program (in operation) for the Guayaquil sanitary sewage and storm drains, US$530,000 for reduction of maternal and infant mortality (program started in November 1984 and approved for 1 year), and US$9 million for a 5-year program (in operation) for strengthening the physical infrastructure of health services in rural areas. *WFP* provided US$11.2 million for food for mothers and infants (5 years) and US$7 million for agrarian reform and rural development.

8.274 **Bilateral cooperation:** *USAID* donated for two malaria control projects: US$500,000 for 1984 and US$10 million for 5 years; US$11.8 million for two programs for the development of integrated rural health services (both for 5 years), and US$400,000 for teaching-service integration in maternal and child health (4 years). *AGFUND* provided US$216,000 for the control of rabies in Guayaquil (2 years).

8.275 **Foundations:** The *W. K. Kellogg Foundation* donated US$284,000 for teaching-service integration for expansion of the coverage of maternal and child health services (4 years).

8.276 In order to provide for more effective coordination among the agencies collaborating in the health field, the Ministry is planning to prepare a unified program of cooperation.

Cooperation Provided by PAHO/WHO

8.277 **Professional staff assigned to the country:** 11, including the PAHO/WHO Country Representative, a regional consultant, and advisers in: health service administration, nursing, epidemiology, administrative methods, veterinary public health, malaria and other vector-borne diseases, sanitary engineering, EPI, and administrative assistance.

8.278 **Regional and intercountry advisers:** 42, for a total of 251 days, in: veterinary medicine, chronic and degenerative diseases, vector-borne diseases, diarrheal diseases, ed-

ucational technology, maternal and child health, dentistry, disaster preparedness, leprosy, nutrition, information, sanitary engineering, production of biological substances, development of services, EPI, rehabilitation, women in health and development, and essential drugs.

8.279 **Short-term consultants (STC):** 40, for a total of 832 days, in the following specialties: drug pricing, rehabilitation, medical sociology, parasitology laboratory, maintenance of services, information and monitoring, physical resources in health, planning, mental health, perinatal health, acute respiratory infections, veterinary epidemiological surveillance, control of diarrheal diseases, radiology, sanitary engineering, oral health, disaster preparedness, leprosy control, diagnosis of vesicular diseases, teaching-service integration, and research in the field of health.

8.280 **Fellowships:** 37, for a total of 125 months at an actual cost of US$93,975, in: Master of Public Health, epidemiology, public health nursing, teaching methodology, social communication, diagnosis of Chagas' disease, health planning, environmental sanitation, physical resources in health, toxicology, medical library science, diarrheal disease control, production of biological substances, medical records, hospital maintenance, respiratory diseases, management of animal colonies, laboratory techniques, diagnosis of encephalitis, and community participation.

8.281 **Courses, seminars, and workshops:** 24 courses and 3 seminars, with 748 participants, in: epidemiological surveillance, educational communication, teacher training, sanitation in disaster situations, techniques of supervision, control of leprosy and leishmaniasis, maternal and child health, disaster preparedness, control of rabies and other zoonoses. In addition, an interregional meeting on primary care in underserved urban areas and an international pharmacology congress were held. These events received a total contribution from PAHO/WHO of US$38,762.

8.282 **Grants:** Under its Special Program for Research and Training in Tropical Diseases (TDR), WHO awarded a grant of US$32,000 (1983-1985) for the control of Chagas' disease and a grant of US$6,000 for the control of onchocerciasis. PAHO also granted a sum of US$15,000 (1983-1985) for the control of onchocerciasis.

General Appraisal and Future Trends

8.283 Because 1984 was an electoral year, difficulties and delays occurred in the health program. This situation continued until August, when the new authorities took office. A period followed in which a health program was being defined and structural changes were being made to the units of the Ministry of Public Health, all of which led to a redefinition of PAHO/WHO's technical cooperation within the framework of the Plan of Action and Strategies for health for all by the year 2000.

El Salvador

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	4,756,800
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1983	30.5
Mortality rate/1,000 inhabitants	1982	7.0
State of Health Indicators		
Life expectancy at birth	1980-85	64.6
Infant mortality/1,000 live births	1982	42.2
Maternal deaths/1,000 live births	1982	0.7
Death rate 1-4 years/1,000 children	1982	4.9
Percentage of newborn with a weight of less than 2,500 grams	1982	8.7
Availability of calories per capita/day	1979-81	2,134
Availability of proteins (grams) per capita/day	1979-81	55.8
Percentage of deaths due to:		
infectious and parasitic diseases	1982	11.0
tumors	1982	2.9
heart diseases	1982	8.1
motor vehicle traffic accidents	1982	2.0

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	45.0
—poliomyelitis	1983	44.9
—measles	1983	41.3
—tuberculosis	1983	47.5
Percentage of population served with potable water	1983	58.8
Percentage of population served by sanitary waste disposal	1983	50.8
Consultations per inhabitant per year	1984	1.1
Number of discharges per 100 inhabitants	1983	4.5
Number of beds per 1,000 inhabitants	1983	1.3
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	3.4
Nurses per 10,000 inhabitants	1983	2.8
Nursing auxiliaries per 10,000 inhabitants	1983	5.9
Health Expenditure		
Health Expenditure per capita (in US$)	1981	14
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	1983	8.7

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.284 By the end of 1984, 363 health service facilities were in operation in 234 of El Salvador's 261 municipalities. Another 55 facilities had been damaged and were out of service. With the aim of rehabilitating the country's system of service establishments, two national projects have been formulated under the Plan for Priority Health Needs in Central America and Panama. The first project (for US$66 million), designed to strengthen the coverage-extension effort, called for the remodeling of 21 health posts, 15 health centers, and a number of hospitals, as well as construction of 40 rural nutrition centers and promotion of training for research activities. The second, a maintenance-systems project with a cost of approximately US$1 million, is aimed at increasing the operational capacity of the Ministry of Public Health and Social Welfare and strengthening its administrative management systems.

8.285 A total of 13 courses on medical equipment and hospital administrative management were conducted with a view to strengthening the facilities maintenance system.

8.286 To improve the planning and evaluation processes, the national information system was evaluated and was being restructured. A start was made on preparing hospitals for coping with disasters.

8.287 The curricula of three nursing schools continued under review. A total of 896 health officials attended courses and orientation workshops on medical care, epidemiology, malaria, and environmental sanitation.

8.288 The national plan for the International Water Supply and Sanitation Decade was formulated and a plan was developed for the operation and maintenance of water supply systems, with emphasis on the control of leaks.

Health promotion and disease control

8.289 Highlights in the area of maternal and child health included the integration of family planning activities into the health services and the revision of the program's policies and procedures on the basis of risk criteria. Five projects—on breastfeeding, monitoring of growth, oral rehydration, immunization, training of practical midwives, and community education—were formulated as part of the Plan for Priority Health Needs in Central America and Panama. In nutrition 11 projects were formulated, with a major focus on food production, processing, marketing and distribution, also under the same Plan for Priority Health Needs. Research protocols were designed for a survey to determine the population's levels of oral health, and the teaching-service component was evaluated with a view to improving the delivery of dental services by using auxiliary personnel and simplified modules.

8.290 To strengthen the epidemiological surveillance system, two additional physicians were assigned to the program, and staff (physicians, nurses, and auxiliaries) were trained in modular courses. Three more hospitals were brought into the diarrheal disease program, which is operational in five regions of the country. The Expanded Program on Immunization (EPI) covered only 45% of the infants under age 1. Cold chain improvements were made, and training continued to be offered to EPI-related staff.

8.291 The number of malaria cases during the year was 53,000, up 5,000 from 1983. The malaria program was seriously hampered by anopheline resistance to insecticides, human migratory flows, and administrative constraints, particularly inadequate funding. Research on malaria control methods was intensified, and four feasibility studies were carried out with the aim of improving the situation. The projects included in the Plan for Priority Health Needs were formulated during the year. In view of the growing problem of human rabies (32 deaths reported), more than 24,000 dog bite victims were vaccinated and a laboratory was converted from the production of Semple-type rabies vaccine to the product based on unweaned mice brain.

Mobilization of Technical and Financial Resources

8.292 **International cooperation**: *UNICEF* aided in the preparation of the subprojects in the infant survival area under the Plan for Priority Health Needs in Central America and Panama; supplementary funds were allocated for 1983-1984 in the amount of US$654,000. *UNDP* provided US$83,554 for rural water supply programs, including courses, seminars, and hiring of consultants; *UNFPA*, US$99,851 for family planning programs; and *IDB*, US$18,652 for financing of four courses in equipment maintenance.

8.293 **Bilateral cooperation**: *USAID* allocated US$1,144 for a VISISA (Vitalization of Health Systems) program and US$102,000 for a breastfeeding program; *CIDA*, US$20,705 for equipment and sup-

plies for the El Rosales Hospital and US$1,000 for equipment for the Maternity Hospital Milk Bank.

Cooperation Provided by PAHO/WHO

8.294 **Professional staff assigned to the country**: 5 staff members, including the PAHO/WHO Country Representative and advisers in: medical care, epidemiology, malaria, and environmental sanitation. The latter (a sanitary engineer) assumed his duties in August.

8.295 **Regional and intercountry advisers**: 42, for a total of 283 days, in 15 areas: maternal and child health, oral health, epidemiology, zoonoses, malaria, environmental health, health systems, disaster preparedness, essential drugs, mental health, service administration, human resources, nursing, statistics, and nutrition.

8.296 **Short-term consultants (STC)**: 38, for a total of 1,628 days, in: maternal and child health, oral health, zoonoses, environmental health, health systems, disaster preparedness, essential drugs, mental health, human resources, laboratories, adult health, nursing, statistics, maintenance, and nutrition.

8.297 **Fellowships**: 44, totaling US$118,549 were awarded to national officials for studies in: hospital administration, information systems, human resources, food and nutrition education, oral health, epidemiology, tuberculosis control, drug registration, leprosy, and production of rabies vaccine. Governmental regulations do not allow public employees receiving fellowships to continue on the payroll while receiving fellowship payments.

8.298 **Courses, seminars, and workshops**: 8 courses, 1 seminar, and 5 workshops with a total of 896 participants. The courses dealt with malaria, wastewater treatment plants, training for community pipe layers, street cleaning, potable water treatment, statistical and medical records clerks, community development, and hospital disaster preparedness. The seminar dealt with mental health. The workshops covered the provision of refresher training to personnel working in tuberculosis clinics, preparation for the national vaccination drives, health for all by the year 2000, the children's dental care campaign, and development of the occupational profile for statistical assistants. PAHO/WHO's financial participation in these activities came to US$38,819.

General Appraisal and Future Trends

8.299 El Salvador, in common with the other Central American countries, is confronted by a serious economic and social crisis which is affecting every sector, including the health sector. Service delivery is often inhibited by obstacles inherent in the current situation and compounded by budgetary constraints. A new Government has presented an opportunity to work for the improvement of economic and social conditions. The new health authorities pledged their unconditional support for the Plan for Priority Health Needs in Central America and Panama, including subregional projects as well as two national projects designed to meet the health requirements of El Salvador. It is hoped that joint action by the countries of the Isthmus will make it possible to obtain the resources for implementing the Plan, thereby helping to bring about improved levels of well-being in the subregion.

8.300 Some of the profiles contemplated in the health priorities began to be reflected in the projects for 1985, especially in the areas of infant survival and tropical disease control. If the internal conditions of the country improve, a number of deferred activities might be carried out in 1985.

French Antilles and Guiana

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.301 Epidemiological analysis at the local level has been an important objective. In each Department, seminars were organized on principles of epidemiology for disease control, using the PAHO/WHO modular course. A first seminar to train moderators was followed by multiplier courses. PAHO/WHO provided fellowships in the field of epidemiology and community health to senior staff of two Departments.

8.302 In the program of scientific exchange and cooperation between the French departments and their neighbors in the Region, participants went to CAREC-organized subregional workshops-seminars, to the Caribbean Veterinary Public Health Seminar, and to a control of diarrheal diseases (CDD) mid-level supervisory skills course in Haiti.

Health promotion and disease control

8.303 In French Guiana, malaria remains a special concern. At the request of the French authorities, a border meeting was organized with Suriname to discuss the malaria problem and control strategies on the Marowijne River. Participants attended from the Health Department (including primary health care staff) and the Pasteur Institute. A microcomputer provided by PAHO/WHO for use by the Cancer Registry in Martinique entered its first year of operation.

Cooperation Provided by PAHO/WHO

8.304 **Professional staff assigned to the country**: A PAHO/WHO epidemiologist visited each Department for 1 week to conduct the first PAHO/WHO course on principles of epidemiology for disease control.

8.305 **Fellowships**: 2, one in epidemiology and the other in community health.

8.306 **Courses, seminars, and workshops**: For the three courses mentioned and the corresponding multiplier courses, PAHO/WHO provided the modules (500 sets).

General Appraisal and Future Trends

8.307 Relations with the French Departments continued to be good. A major weakness identified in the delivery of health services was the absence of an adequate information base and the ability to interpret data at the local level. Attitudes toward understanding the regional neighbors and exchanging information with them have remained good.

Grenada

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	110,000
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1983	26.3
Mortality rate/1,000 inhabitants	1983	7.3
State of Health Indicators		
Life expectancy at birth	1982	67.0[a]
Infant mortality/1,000 live births	1983	21.2
Maternal deaths/1,000 live births	1983	1.4
Death rate 1-4 years/1,000 children	...	...
Percentage of newborn with a weight of less than 2,500 grams	1974-75	12.2
Availability of calories per capita/day	1979-81	2,166
Availability of proteins (grams) per capita/day	1979-81	61.9
Percentage of deaths due to:		
infectious and parasitic diseases	1983	1.0
tumors	1983	7.0
heart diseases	1983	21.0
motor vehicle traffic accidents	1983	0.5

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	68.0
—poliomyelitis	1983	78.0
—measles	1983	7.0
—tuberculosis	...	...
Percentage of population served with potable water	1983	85.0
Percentage of population served by sanitary waste disposal	...	...
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	1983	7.1
Number of beds per 1,000 inhabitants	1983	3.2
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	3.8
Nurses per 10,000 inhabitants	1982	33.7
Nursing auxiliaries per 10,000 inhabitants	1982	15.7
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	...	...

... Data not available.

[a] Age for women. Age for men, 64.0 years.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.308 The country is developing a health plan with the assistance of PAHO/WHO and the Caribbean Community (CARICOM). Programming workshops were held at the district level, but there was a major loss of momentum in program development during 1984, a period of political and economic uncertainty. A follow-up was done of the programming process at the district level, and PAHO/WHO made recommendations for improving nursing services at St. George's General Hospital.

8.309 In human resources, along with the rest of the country, the Ministry of Health has been undergoing a rebuilding phase. This has been reflected in an emphasis on planning and personnel development, carried out with the assistance of several agencies including PAHO/WHO, USAID, and Project HOPE. Senior nurses received orientation on Caribbean standards of nursing care.

8.310 In environmental health, because of the unsettled political situation, the environmental health program continued at a modest pace, leaning heavily on bilateral assistance.

Attention was given to human resource development and to an OAS study of a sewerage system for the southwest area of the island. Also, a representative of the Central Water Commission attended a subregional workshop on water quality control. PAHO/WHO supported the reporting of histopathological specimens, the training of laboratory technologists in laboratory management, testing for hepatitis B, and the setting up of rural laboratories.

Health promotion and disease control

8.311 Strategies in nutrition continued to develop breastfeeding and feeding of the weaning age group. Official priority was placed on health education.

8.312 Maternal and child health and family planning services were somewhat weakened by diminished staffing and uncertainty about funding; female sterilization has not yet become an established procedure. Two staff members completed courses in family nursing practice and community nutrition as part of the process of developing maternal and child health within a primary health care context. Some outstanding activities were as follows: development of a project proposal on family planning and family life education, which is awaiting funding from UNFPA; follow-up of diarrheal disease control activities; and provision of oral rehydration salts.

8.313 Grenada participates in the Expanded Program on Immunization (EPI) and, with the assistance of the Caribbean Epidemiology Center (CAREC), is developing and strengthening its surveillance of laboratory capabilities. In animal health, emphasis continues to be placed on zoonoses surveillance and improving the rabies control program.

Mobilization of Technical and Financial Resources

8.314 **Bilateral cooperation**: *USAID* provided technical cooperation for community sanitation and the *European Economic Community* (EEC), funds for fellowships.

8.315 **Foundations**: *Project HOPE* assisted in health personnel and *Radda Barnen* donated US$833,333 for maternal and child health.

Cooperation Provided by PAHO/WHO

8.316 **Professional staff assigned to the country**: Although no full-time professional staff are assigned to Grenada, considerable cooperation comes from the Organization's Headquarters staff as well as from CAREC and CFNI. Consultants in health systems, personnel development, disaster preparedness, disease control, environmental health, veterinary public health, vector control, nutrition, and maternal and child health were provided to collaborate with Government efforts.

8.317 **Fellowships**: 5, in: vector control, community nutrition, hepatitis, dental auxiliary, and public health inspection. Training has been provided for 5 nationals in: laboratory management (Saint Lucia), community nutrition (Barbados), radiography (Jamaica), and community health nursing (Jamaica), utilizing EEC-CARICOM Secretariat funding. PAHO/WHO's total contribution for fellowships was US$33,650.

General Appraisal and Future Trends

8.318 A major programming effort will have to be deferred until the newly elected Government is settled. The UNFPA-funded project should be a key element in future maternal and child health activities and should be implemented fully. The long-delayed revision of the maternal and child health manual should proceed with PAHO/WHO technical cooperation. Provision is being made to in-

clude Grenada in the proposed development of perinatal care services in collaboration with CLAP.

8.319 If political difficulties can be settled in the coming year, as expected, increased development is likely to occur in all sectors, and the environmental health program will have to be accelerated to meet the needs of a new tourist trade and a more demanding public. Continued development of primary health care in rural districts is expected.

Guatemala

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	8,164,400
Percentage of urban population (as nationally defined)	1983	37.0
Birth rate/1,000 inhabitants	1984	35.9
Mortality rate/1,000 inhabitants	1984	7.7
State of Health Indicators		
Life expectancy at birth	1980-85	60.7
Infant mortality/1,000 live births	1984	67.7
Maternal deaths/1,000 live births	1983	1.2
Death rate 1-4 years/1,000 children	1983	15.6
Percentage of newborn with a weight of less than 2,500 grams	1980	10.0
Availability of calories per capita/day	1979-81	2,138
Availability of proteins (grams) per capita/day	1979-81	58.2
Percentage of deaths due to:		
infectious and parasitic diseases	1983	29.6
tumors	1983	3.2
heart diseases	1983	4.1
motor vehicle traffic accidents	1983	0.4

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	55.0
—poliomyelitis	1983	55.0
—measles	1983	38.0
—tuberculosis	1983	40.0
Percentage of population served with potable water	1982	49.8
Percentage of population served by sanitary waste disposal	1982	33.6
Consultations per inhabitant per year	1982	40.0
Number of discharges per 100 inhabitants	1983	2.5
Number of beds per 1,000 inhabitants	1982	1.7
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	6.0
Nurses per 10,000 inhabitants	1983	2.6
Nursing auxiliaries per 10,000 inhabitants	1983	10.8
Health Expenditure		
Health Expenditure per capita (in US$)	1984	21.8
Total health expenditure as a percentage of the GDP	1984	3.7
Percentage of the National Budget dedicated to health	1984	13.5

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.320 The structural reorganization of the Ministry of Public Health and Social Welfare was the outstanding action taken by the health authorities in 1984. Immediate outcomes of the change were an administrative and functional rearrangement of the units of the General Directorate and Subdirectorate for Health Services and the performance of an institutional analysis of the health sector by a national multi-institutional Government team. The portion of the analysis pertaining to the Guatemalan Institute of Social Security was completed and those parts relating to the Ministry of Public Health and Social Welfare and the Secretariat for Social Welfare were well advanced at year's end. Studies also were initiated on the Municipal Government of Guatemala City, universities, and private sector agencies.

8.321 In the strategic planning and local programming process, the Government's objectives are to make optimal use of resources and increase the operational capacity of the system, thereby achieving qualitative and quantitative improvements in the delivery of health services. Moreover, the health authori-

ties, with the aim of achieving the goals of HFA/2000, have decided to institute an operational system based on the primary health care strategy to improve the quality of care provided to underserved urban communities. A model based on that operational system began to be applied in May 1983 in the Department of Escuintla. Its major findings indicate that vaccination coverage within the Expanded Program on Immunization (EPI), which was formerly 10% is now at 73%. Another salient fact is that institutional vaccination is now an ongoing function in this department. The oral rehydration program, which did not exist formerly, is now functioning continuously with a preventive approach at all health facilities and on the basis of coordinated actions by the health teams and community leaders in more than 600 localities. Preliminary results indicate that overall mortality due to diarrheal diseases has declined by more than 50%.

8.322 The Government decided to extend the operational primary care model to all health areas and took initial actions to implement it in the Departments of Santa Rosa, El Progreso, and Sacatepéquez. A total of 14 seminar-workshops were conducted in the latter areas for approximately 500 people, including hospital physicians and auxiliary staff. As the year ended, the Departments of Jutiapa, Jalapa, Zacapa, and Chiquimula were preparing to apply the model in 1985.

8.323 In order to strengthen the health institution maintenance program, a responsible unit was established and 4 regional centers and 10 local maintenance units were organized.

8.324 Salient developments in the human resource field were the definition of a human resource policy, the taking of a census of personnel available at institutional and community level, the holding of interinstitutional seminar-workshops on human resource policy, and the conducting of a course-workshop on methodology for research on health personnel.

8.325 Among the most significant accomplishments in the protection of environmental health were the following: formulation of a model information system for the water supply and sanitation subsector; formulation, through the Permanent Coordination Committee for Water Supply and Sanitation (COPECAS), of a project to strengthen the water supply and sanitation sector; development of profiles for water supply and sanitation projects as Guatemala's contribution to the Plan for Priority Health Needs in Central America and Panama; and the planning and implementation of a program for including basic sanitation components in the operational model for primary health care in the Escuintla area, with a view to constructing 27,000 latrines and 50 wells with manually operated pumps and establishing simple systems for solid waste management. In addition, three workshops on the manufacture of latrine tiles and slabs were conducted. Work went forward on monitoring and measuring arsenic and boron pollution levels in the Paz River, near the border with El Salvador, as a result of discharges from a geothermal plant in that country.

Health promotion and disease control

8.326 In the food and nutrition area, the supply of food, especially basic grains, was increased and improved. Further technical improvements were made to the "Nutricta" corn seed, and work proceeded in the fields of agribusiness, food fortification, and agricultural development along the east-west corridor in northern Guatemala.

8.327 In maternal and child health, operational health care models were put into practice and a structure of health services was worked out, ranging from the basic units to the levels of greatest complexity. In oral health, PAHO/WHO cooperation was provided in teaching-service integration, especially to the University of San Carlos in Guatemala City. A significant development was the

training of personnel in intrahospital infections at the country's two largest hospitals—San Juan de Dios and Roosevelt. A manual of standards and procedures for epidemiological surveillance of intrahospital infections was close to completion. In the malaria eradication program, efforts were focused mainly on epidemiological and entomological aspects, including a follow-up survey to determine the susceptibility of *Plasmodium falciparum* to the four aminoquinolines; on field testing of new therapeutic regimens; on entoepidemiological studies in a locality with persistent transmission; and on monitoring the susceptibility of anophelines to various insecticides.

8.328 To strengthen the tuberculosis control program, now entirely integrated into the regular service network, a seminar was conducted to evaluate and analyze the program comprehensively and identify the major problems and their possible solutions.

8.329 Zoonoses control was carried out in coordinated fashion by the ministries of health and agriculture. The major development was the relocation of the rabies vaccine production plant and the solution of problems which had reduced its output. A committee of high-level representatives of the ministries of health and agriculture established during the year was making arrangements for the preliminary phase of the plan for controlling human rabies.

8.330 An emergency preparedness plan was completed and was being revised. A seminar was conducted to prepare a national plan for governing hospital performance in the event of a disaster necessitating medical care on a massive scale. The seminar was later repeated in five regions of the country.

Mobilization of Technical and Financial Resources

8.331 **Technical Cooperation Among Developing Countries (TCDC)**: Of salient importance was Guatemala's cooperation with El Salvador to collaborate in the technological shift from the production of Sample-type Fuenzalida vaccine.

8.332 **International cooperation**: *UNICEF* provided US$593,131 for water supply, development of rural health units, maternal and child health (breastfeeding, oral rehydration, comprehensive care of children below age 6), and immunization; *UNFPA* gave US$486,132 for family planning; *Central American Bank for Economic Integration* (CABEI), US$4,049,100 for construction of 100 health posts; *CIDA*, US$2,870,000 for rural waterworks; *CARE*, US$300,000 for construction of 20 health posts and training of volunteers, US$5,116,000 for maternal and child health (food supplements), and US$250,000 for rural water systems; *UNDP*, US$350,000 for drug control (program in operation) and for development of the managerial capacity of water supply institutions (project approved); *IDB*, for the following projects in operation: design of a national water supply and sewage program for urban centers (US$850,000), water supply and sewage for Guatemala City (US$35.5 million), construction of water and sewage systems for secondary cities (US$22.5 million), construction of 55 rural health centers (US$28 million), construction of 3 departmental hospitals (US$51 million); and for approved projects to construct 140 municipal works in the amount of US$18 million and US$1,326,000 for operation and maintenance of a water supply system jointly with *GTZ*.

8.333 **Bilateral cooperation**: *USAID* provided US$600,000 for a comprehensive family planning system and US$4.7 million for health and nutrition and environmental sanitation.

Cooperation Provided by PAHO/WHO

8.334 **Professional staff assigned to the country**: 8, including the PAHO/WHO

Country Representative and professionals, in: health administration, laboratory procedures, epidemiology, environmental health, and nursing.

8.335 **Regional and intercountry advisers**: 38, for a total of 247 days, in: health programming and administration, hospital administration, statistics, maternal and child health and family planning, tropical and parasitic diseases, vaccine production, human resources, essential drugs, and disaster preparedness.

8.336 **Short-term consultants (STC)**: 22, for a total of 1,483 days, in: hospital architecture, primary care, information systems, environmental health, maintenance, epidemiology, diarrheal diseases, respiratory diseases, maternal and child health, malaria, nephrology, and communications sciences.

8.337 **Fellowships**: 46, for a total of 112 months of study, at a cost of US$132,640, in: public health, hospital administration, environmental health, design of health establishments, workers' health, communicable diseases, tuberculosis, human resources, epidemiology, maternal and child health, drug control, and bacteriology.

8.338 **Courses, seminars, and workshops**: 132, with a contribution from PAHO/WHO of US$268,469. The participants in these events totaled 4,367 national officials, and these events were conducted in the following areas: maternal and child health, hospital maintenance, primary care, community health, methodology for education in the field of health, environmental sanitation, public health, planning and administration, parasitology, pesticides, tuberculosis, human resources, diarrheal diseases, disaster emergencies, supervision, programming, and border health meetings.

8.339 **Local contracts**: 18 local professionals were contracted for specific jobs at a cost of US$32,951 to supplement resources provided under the technical cooperation program.

General Appraisal and Future Trends

8.340 The basic policy adopted by the health authorities calls for intensification of actions directed to attaining the HFA/2000 goals, curtailment of investment programs, and concentration of efforts on achieving optimal use of resources by rationalization of the management process and increasing operational capacity. Specific gains in the improvement of intra- and intersectoral linkages were the improvement of coordination between the Guatemalan Institute of Social Security and the Secretariat for Social Welfare and the closer relations of the General Secretariat for Economic Planning institutions like the Municipality of Guatemala and universities.

8.341 An outstanding event in 1984 was the XIV Meeting of Directors General of Health and the XXIX Meeting of Ministers of Health of Central America and Panama, which was also attended by the managers of the social security agencies of the countries in the subregion.

8.342 The Government has supported the Plan for Priority Health Needs in Central America and Panama and carried out an intensive multisectoral program of activities with PAHO/WHO. One product of this joint effort was an analysis of health conditions, in which the major problems were identified and priority areas established. The study gave rise to the preparation of a document containing the profiles of 33 projects requiring an external contribution of US$181 million over a 5-year period. In addition, the study served as a basis for upgrading the country's capacity to assess health conditions and formulate projects, as well as a vehicle for improving interinstitutional and intersectoral coordination.

Guyana

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1982	803,000
Percentage of urban population (as nationally defined)	1970	29.4
Birth rate/1,000 inhabitants	1980	28.5
Mortality rate/1,000 inhabitants	1980	7.0
State of Health Indicators		
Life expectancy at birth	1980-85	70.5
Infant mortality/1,000 live births	1980	47.9
Maternal deaths/1,000 live births	1979	0.4
Death rate 1-4 years/1,000 children	1979	3.4
Percentage of newborn with a weight of less than 2,500 grams	1982	19.5
Availability of calories per capita/day	1979-81	2,360
Availability of proteins (grams) per capita/day	1979-81	57.5
Percentage of deaths due to:		
infectious and parasitic diseases	1979	8.5
tumors	1979	4.9
heart diseases	1979	20.4
motor vehicle traffic accidents	...	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	58.3
—poliomyelitis	1983	61.6
—measles	1983	26.1
—tuberculosis	1983	75.9
Percentage of population served with potable water	1984	98.0
Percentage of population served by sanitary waste disposal	...	...
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	1983	17.5
Number of beds per 1,000 inhabitants	1982	4.5
Human Resource Indicators		
Physicians per 10,000 inhabitants	1980	1.2
Nurses per 10,000 inhabitants	1980	6.5
Nursing auxiliaries per 10,000 inhabitants	1980	9.2
Health Expenditure		
Health Expenditure per capita (in US$)	1983	70
Total health expenditure as a percentage of the GDP	1982	5.0
Percentage of the National Budget dedicated to health	1983	6.3

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.343 Planning, programming, and evaluation activities were formalized, including the participation of all interested and responsible entities, and the establishment of timetables. Regionalization was accelerated by the initiation of the regional health services directorate. At the same time, the large and the small regions were reappraised realistically in terms of population density. The large regions have four levels of care (health posts, health centers, district hospitals, and a regional hospital) and are led by a regional health team leader. The small regions, lightly populated, have a typical representation of health service institutions and the team leader may be a medex (rural health technician), a public health nurse, or even a nurse assistant. Decentralization also progressed along with the regional administrative machinery, which is becoming more and more a partner of the Ministry of Health in the administration of the health services. These actions, coupled with the improvement of the referral system, will strengthen the primary health care network.

8.344 A good number of graduates from medical schools and other health service teaching institutions abroad have returned. A number of medex, various categories of nurses and technicians, and community health workers have graduated locally; these graduates are being hired to open new district hospitals, health centers, and health posts, or to fill long-awaited vacancies in the health sector, thereby increasing the health service coverage substantially.

8.345 In human resources, a large effort was invested in training health staff to prepare them for their new role in primary health care. Seminars, workshops, courses, and inservice demonstrations were carried out at both the institutional and community levels. The next phase of this exercise will focus on the public: training individuals, families, and communities for their role in primary health care. An innovative medical education program is being developed and it is hoped that the medical school will open its doors for the first time in 1985 or in 1986 at the latest. The establishment of a national center for health education technology also is being discussed. The center is scheduled to be inaugurated before the opening of the new medical school.

8.346 The UNDP/PAHO study of the 1970's is still being utilized as a reference in environmental health. Water and sanitation activities are concentrated mainly on water supply and sanitation for urban as well as rural areas through the Guyana Water Authority (GUYWA). The IDB has studied the possibility of institutional strengthening of GUYWA, and consideration is being given to the major components of this subproject. In conjunction with the water project, a fluoridation scheme using Fluorospar from Brazilian sand is being elaborated.

Health promotion and disease control

8.347 Health centers, clinics, and home visits of public health nurses continued to provide maternal and child health services. The oral rehydration salt program is an integral part of this service. The immunization program has progressed to a creditable level. World Food Program (WFP) and UNICEF inputs were sought in support of the Cerex-weaning food program. The Government has requested CFNI to evaluate the impact of Cerex as supplementary infant food and the nutritional adequacy of rice flour as a substitute for wheat flour.

8.348 Malaria is still endemic in the sparsely populated areas of the Northwest District and Rupununi. The number of malaria cases in 1984 was more than 2,000. Technical problems such as identification of particular vectors in specific areas, susceptibility to insecticides, resistance to drugs, and the like, are being studied as support to the malaria control program. This program is being integrated into the health services, rather than being run as a vertical program.

Mobilization of Technical and Financial Resources

8.349 **Technical Cooperation Among Developing Countries (TCDC)**: The country participated in TCDC activities through PAHO/WHO, the Caribbean Community (CARICOM), and the Regional Education Program for Animal Health and Veterinary Public Health Assistants (REPAHA) in the Caribbean border meetings for malaria, University of the West Indies (UWI), and the Caribbean Development Bank (CDB). There is also a joint human resources program with Cuba. DDT for the malaria program was received from Trinidad and Tobago on a TCDC basis.

8.350 **International cooperation**: *UNICEF* provided US$544,000 for provision of water supplies for small communities and villages (1983-1985), US$58,000 for primary health care, US$78,000 for a nursery school project (1981-1984), US$24,500 for the National Rehabilitation Committee

(1981-1984), and US$92,000 for women's appropriate technology (1981-1984).

8.351 **Bilateral cooperation**: The *Governments of Korea* (People's Republic) and *Cuba* provided assistance, respectively, for a referral hospital (400 beds) in Georgetown and for human resource development, including the school of medicine; *CIDA* gave assistance for improvement of the health services.

Cooperation Provided by PAHO/WHO

8.352 **Professional staff assigned to the country**: 6, the PAHO/WHO Country Representative and advisers, in: malaria, sanitary engineering, dental health, pathology, and veterinary education.

8.353 **Regional and intercountry advisers**: Several, in: epidemiology, medical education, environmental health, and water fluoridation.

8.354 **Short-term consultants (STC)**: Several, in: occupational health, medical education, and diarrheal diseases control.

8.355 **Fellowships:** 23, in the following areas: primary health care, health statistics, nurse education-administration, laboratory services, hospital maintenance, vector control, health education, public health administration, and project management. A total of US$127,320 was obligated.

8.356 **Courses, seminars, and workshops**: These training activities were for community health workers, tutors in education methods, health science teachers, nurses, and regional health managers and clerks. Workshops were also held in occupational health, dental health, and information systems for water and sanitation.

8.357 **Grants:** PAHO/WHO provided US$5,000 for a survey on the needs of the elderly, US$2,200 for collection of information on trends in health services research in Latin America and the Caribbean, and US$1,000 for research studies in psychological testing in children.

General Appraisal and Future Trends

8.358 With regard to health for all by the year 2000, the crisis affecting the country should be seen as an opportunity to arouse a national drive to foster self-sufficiency and consequently to encourage appropriate technology. The health sector could become an instrument in this drive. Within the health sector itself, a number of innovations are being introduced which would not have been acceptable in past years, such as the following concepts: regionalization; decentralization; integration of team-based health care, with five levels of care and with the community health worker as the base of the pyramid and a very important entry point to it; and using economic analyses to make decisions about projects and programs.

8.359 These new approaches, arising in response to the present economic disadvantage, accentuate the value of mobilizing national resources. The community, organized by the local democratic organs at various levels, is a force for developing local potential. The Ministry of Health is devising ways of incorporating the input of the private and semi-private health sectors into a national health effort. Since the private and semi-private sectors administer almost as many hospital beds and outpatient facilities as the Ministry, this coordinated effort should have a salutary effect on the overall health service.

8.360 The Ministry has come to the realization that the cooperation of the teaching institutions and professional societies is indispensable in the administration of the health institutions and especially in the development of medical education in the country. The national insurance scheme, which only recently has begun to make financial contributions to

health services through fee-for-service reimbursement, will eventually play an even more active role.

8.361 The unfavorable economic situation has also made the Government acutely aware of the potential of external resource mobilization. Hence, the Department of International Cooperation has been established in the Ministry of Economic Planning and Finance for mobilizing and coordinating external inputs.

8.362 The future depends on a capability for coping with a difficult economic situation which does not seem to disappear quickly. As one of the lowest priority areas under these economic circumstances, the health sector, will have to learn—even more so than other sectors—to be dynamic, flexible, and innovative with regard to both the software and hardware of health technology development. PAHO/WHO's support will certainly be at hand.

Haiti

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	5,500,000
Percentage of urban population (as nationally defined)	1984	26.0
Birth rate/1,000 inhabitants	1982	36.0
Mortality rate/1,000 inhabitants	1982	16.5
State of Health Indicators		
Life expectancy at birth	1982	48.0
Infant mortality/1,000 live births	1982	124.0
Maternal deaths/1,000 live births	1984	3.4
Death rate 1-4 years/1,000 children	1983	31.0
Percentage of newborn with a weight of less than 2,500 grams	1983	17.0
Availability of calories per capita/day	1979-81	1,905
Availability of proteins (grams) per capita/day	1979-81	45.5
Percentage of deaths due to:		
infectious and parasitic diseases	1982	19.4
tumors	1982	2.1
heart diseases	1982	4.4
motor vehicle traffic accidents	1982	0.5

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	8.7
—poliomyelitis	1983	6.0
—measles	...	...
—tuberculosis	1983	69.0
Percentage of population served with potable water	1984	32.0[a]
Percentage of population served by sanitary waste disposal	1984	19.0[b]
Consultations per inhabitant per year	1983	20.0
Number of discharges per 100 inhabitants	1984	1.0
Number of beds per 1,000 inhabitants	1984	0.8
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	1.4
Nurses per 10,000 inhabitants	1983	1.9
Nursing auxiliaries per 10,000 inhabitants	1983	3.6
Health Expenditure		
Health Expenditure per capita (in US$)	1984	9.0
Total health expenditure as a percentage of the GDP	1984	3.0
Percentage of the National Budget dedicated to health	1984	10.0

— None.

[a] 54% urban and 25% rural. [b] Urban population; the figure for the rural population is 12%.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.363 The Government remained committed to the primary health care strategy through the sequential attack on six priority programs identified in its "Nouvelle Orientation." Within this framework, late in 1983, the Ministry of Health stepped up its efforts to decentralize authority for health services delivery to four regional directorships: North, South, West, and Transversal. In 1984, special efforts were made to expedite the establishment of new regional offices in the West and Transversal Regions. Developments in the West Region, headquartered in Port-au-Prince, have proceeded smoothly; in the Transversal Region, headquartered in Gonaives, major organizational challenges emerged. In general, significant administrative and programmatic autonomy has been turned over to regional administrations. Financial planning, however, has remained more centralized, and this important division of authority has now created special needs for more uniformity of reporting procedures and information systems so that central planners can accurately track the extent of activities and results achieved in the regions.

8.364 The rural health delivery program featured a substantial increase in the number of health institutions (341 at the beginning of the year to 389 at the end) as well as renovation and reequipment. However, the results of training and deployment of health inspectors suggested the need to reassess the program. In the development of secondary and tertiary care, the recommendations made in 1983 by a PAHO/WHO consulting team at the University Hospital produced positive effects in achieving better sanitation measures at the hospital and availability of water supply.

8.365 In environmental health, relevant activities included the implementation by the National Committee for the Water and Sanitation Decade (CONADEPA) of the formulation of the sectoral national plan and the master plan for the capital's water system. In addition, 10 water systems of the principal cities were strengthened and studies were completed for seven other intermediate cities. Rural water supplies and latrine construction with innovative technology have progressed.

Health promotion and disease control

8.366 As stated in the "Nouvelle Orientation," primary health care strategy should be implemented by focusing on six priority health problems: diarrheal disease, immunizable disease, tuberculosis, nutrition, maternal and child health, and malaria.

8.367 In food and nutrition, although nutritional problems continue to be serious, a well-focused Government strategy has not yet been identified; it is estimated that the problem is linked primarily to shortages in available food stocks. In maternal and child health and family planning, program productivity was low because of administrative and organizational problems. To strengthen those services, a functional reorganization was adopted at the end of the year.

8.368 Immunization activities remained low in 1984. The coverage for children of ages 0-4 in the first 6 months of 1984 was about 8.5% for DPT, 7.4% for polio, and 38.7% for BCG. Measles vaccine also was given sporadically.

8.369 In 1983, planning began for a multisectorally supported project, the "National Program for the Control of Diarrheal Diseases and the Promotion of Breast-feeding," which became fully operational in 1984. As of mid-1984, over 2,000 health workers and almost 4,000 nonhealth workers had been trained in the program. Almost 1 million oral rehydration salt (ORS) packets were distributed in public and private sector commercial institutions, and 2,000 commercial outlets for ORS also were established. Although problems were encountered in the operation, overall progress in this program was encouraging.

8.370 Tuberculosis is the third priority in the country. Grace Children's Hospital and the Crusade against Tuberculosis (CAT-ICC) continued to support most diagnostic and treatment programs in the country, as well as maintaining BCG immunization. Their success with BCG was a modest 38.7% coverage of children less than 1 year.

8.371 The national malaria eradication service had a difficult year operationally because of Government and departmental problems with budgets and availability of external financial resources. On the positive side, cooperation between the National Service for Major Endemic Diseases (SNEM) of Haiti and its counterpart in the Dominican Republic continued at a brisk pace. The two SNEMs now coordinate activities along border areas, and the SNEM-Haiti has agreed to give preventive malaria treatment to all contractual Haitian cane cutters who travel to the Dominican Republic for work. The single most important event in 1984 was a mid-term evaluation of the SNEM Malaria Program emphasizing the need for improvements in technical quality and administrative program support, such as turning the surveillance system over primarily

to the regular health services and greatly expanding the responsibility of the SNEM collaborating volunteers.

8.372 In epidemiological services, techniques and methods were improved. Two important epidemic outbreaks, dengue and diarrheal diseases, were investigated during the year which served to help build an appreciation for the need of epidemic surveillance.

8.373 With regard to disaster preparedness, a seminar on disaster planning for 30 health workers in the South Region was developed. In advance of the Caribbean hurricane season, PAHO/WHO also supported the design and printing of 20,000 posters advising the population on advance precautions.

Mobilization of Technical and Financial Resources

8.374 **International cooperation**: *UNICEF* provided US$644,000 for primary health care, medicaments, immunization, nutrition, and water supply; *UNDP*, US$81,000 for water supply; *UNFPA*, US$400,000 for maternal and child health and family planning; the *World Bank*, US$1.7 million for water supply; *IDB*, US$9,873,000 for four projects in health services and water supply systems, in progress; *OPEC*, US$750,000 for the sewerage system; *WFP*, US$2,616,000 for primary health and nutrition; and *EEC*, US$1,435,000 for water supply.

8.375 **Bilateral cooperation**: *USAID* gave US$6,632,000 for malaria, health services, family planning, and rural water supply; *Government of France*, US$3,170,000 for rural water supply and training in public health; *Federal Republic of Germany*, US$1,887,000 for nutrition and water supply in seven towns; *CARE*, US$343,000 for nutrition; and *Government of Japan*, US$2.5 million for malaria.

Cooperation Provided by PAHO/WHO

8.376 **Professional staff assigned to the country**: 12, including the PAHO/WHO Country Representative and advisers in epidemiology, administrative methods, nursing, sanitary engineering, entomology, medical officer, and sanitarians.

8.377 **Short-term consultants (STC)**: 18, for a total of 175 days in several health services areas.

8.378 **Fellowships**: 44, in the following fields: public health administration, sanitation, maternal and child health, health education, health statistics, dental health, malaria, tuberculosis, laboratory services, and communicable diseases.

General Appraisal and Future Trends

8.379 Progress was made in the implementation of maternal and child health policies and plans, as stated in the "Nouvelle Orientation." Other positive features were the attempts to strengthen and expand the infrastructure of health services, together with a promising water supply program, as well as substantial progress in the national diarrheal program. However, these efforts and the substantial amount of financial resources involved (mainly from external sources) did not keep pace with expected target achievements. Since Haiti is one of the major recipients of concessionary funds and external donations, it is hoped that the Government could devise new approaches to manage international cooperation (legal, administrative, and operational) to achieve greater impacts with available resources.

Honduras

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	4,231,500
Percentage of urban population (as nationally defined)	1984	39.0
Birth rate/1,000 inhabitants	1982	40.9
Mortality rate/1,000 inhabitants	1981	10.8
State of Health Indicators		
Life expectancy at birth	1983	58.8
Infant mortality/1,000 live births	1981	87.0
Maternal deaths/1,000 live births	1979	2.7
Death rate 1-4 years/1,000 children	1982	3.8
Percentage of newborn with a weight of less than 2,500 grams	1981	9.2
Availability of calories per capita/day	1979-81	2,135
Availability of proteins (grams) per capita/day	1979-81	52.1
Percentage of deaths due to:		
infectious and parasitic diseases	1980	27.4
tumors	1980	5.6
heart diseases	1980	11.8
motor vehicle traffic accidents	1984	1.2

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	70.0
—poliomyelitis	1983	69.0
—measles	1983	66.0
—tuberculosis	1983	75.0
Percentage of population served with potable water	1983	69.0
Percentage of population served by sanitary waste disposal	1983	44.0
Consultations per inhabitant per year	1983	100.0
Number of discharges per 100 inhabitants	1983	2.7
Number of beds per 1,000 inhabitants	1983	0.8
Human Resource Indicators		
Physicians per 10,000 inhabitants	1984	3.8
Nurses per 10,000 inhabitants	1984	1.5
Nursing auxiliaries per 10,000 inhabitants	1984	14.8
Health Expenditure		
Health Expenditure per capita (in US$)	1983	43
Total health expenditure as a percentage of the GDP	1983	7.0
Percentage of the National Budget dedicated to health	1983	13.0

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.380 The Ministry of Public Health and Social Welfare (MSP) concluded the arrangements for the local programming process, which was instituted in three health regions. The information system (both intra- and extra-hospital) was redesigned in terms of the health programs to be carried out, as were the equipment, occupation, and education profiles for the peripheral levels. A determination was made of the population to be covered by the MSP. In sectoral planning, the current situation and its conditioning factors were analyzed and planning functions were identified. Contact was made at the highest level with the Economic Planning Council (CONSUPLANE) with a view to coordinating sectoral planning. The organization of groups to formulate profiles for projects included in the Plan for Priority Health Needs in Central America and Panama, together with the performance of feasibility studies on each of those projects, constituted a significant effort coordinated at the political level through the Planning Division, culminating in the establishment of a Projects and Investments Unit in the MSP.

8.381 Under the guidance of a politico-technical commission, MSP coordination with

the Honduran Social Security Institute progressed along two work fronts: the preparation of valid options for integration and a search for areas of common interest for joint short-term activities. A cost manual adopted to improve the efficiency of the country's health establishments was expected to facilitate the management and improve the maintenance and adequacy of the information system. Nearly 500 urban and rural health centers were re-equipped with financial support from the Government of the Netherlands and UNDP.

8.382 Following a decision to reorganize ambulatory care services in the Metropolitan Health Region, the MSP defined a methodology for extending the coverage of services through referrals from peripheral centers and coordinating operations with those of other sectors. To complete the ambulatory care scheme, the Ministry also began to prepare a protocol for a study on the demand for outpatient services in the country's hospitals.

8.383 Human resource activities were focused primarily on definition of a national policy; planning, development, and utilization of instructional staff; and strengthening of training centers. Courses were conducted for members of the faculty of the School of Medical Sciences in order to upgrade their academic level in the areas of learning evaluation, systematization of instruction, applied didactics, and research methodology.

8.384 PAHO/WHO contributed to the development of the National Medical Library by helping to improve its equipment, train its staff, and increase its collection of books and periodicals. Equipment was provided to the School of Medical Science's Educational Technology in Health Unit, which was to assume responsibility for the organization of instructional resources, production of educational materials, and educational research.

8.385 In the area of environmental health, a national water supply and sanitation committee was established by presidential decree, in connection with the International Drinking Water Supply and Sanitation Decade (IDWSSD), and the first stage of the information system for monitoring and evaluating the national water and sanitation plan was designed. In addition, a study was carried out for the purpose of evaluating the institutions in the subsector and determining the status of basic sanitation in underserved urban areas of the Central District and the municipality of San Pedro Sula. Water supply systems were completed for three cities (at an investment cost of US$23.5 million), and projects were formulated for another four cities for which IDB financing was to be made available (US$20 million). With respect to the environmental impact of economic development projects, the Ministry coordinated the efforts to minimize the health hazards posed by ecological changes in new human settlement and hydroproject construction areas.

8.386 Regional health laboratories were strengthened to increase their technical and administrative capacity; a total of 26 peripheral laboratories were equipped during 1984 with funds provided by a grant from the Government of the Netherlands.

Health promotion and disease control

8.387 In the nutrition area, four national projects were formulated within the Plan for Priority Health Needs in Central America and Panama. The projects covered the following fields: increased production, preservation, and consumption of food; fortification of foodstuffs with basic nutrients; nutritional state of displaced populations; and strengthening of the Ministry's Department of Nutrition.

8.388 In maternal and child health, 1,200 traditional midwives and 600 health protectors received training, along with health personnel, in demography, administration of family planning programs, and equipment maintenance. UNFPA-funded equipment

was provided for use in ambulatory services and hospitals and by traditional midwives.

8.389 The oral health program received 26 complete sets of dental equipment financed by a grant from the Government of the Netherlands. A study was made to determine the fluoride content of water supplied by the waterworks of the country's departmental capitals.

8.390 In mental health, a course was conducted in family therapy and prevention of alcoholism and drug dependency, and work began on the centralization of psychiatry and psychology activities and their integration into the health services.

8.391 The Expanded Program on Immunization was evaluated. The diarrheal disease control program continued to promote and utilize oral rehydration treatment by community and institutional personnel and conducted seminars for pediatricians. A control program for acute respiratory infections was inaugurated in 1984 with a number of regional seminars and workshops to acquaint participants with the program regulations. In the vector control program, a study was made with a view to pointing out the various problems appropriately on the basis of an improved information system and better epidemiological analysis. As a result of this program, the number of cases of malaria was reduced from 57,500 in 1982 to 17,500 in 1984. An epidemiological survey on the prevalence of Chagas' disease, conducted with TDR/WHO support, revealed a prevalence rate of 6%. The tuberculosis control program was evaluated against its goals at a seminar attended by regional directors.

8.392 The animal health program of the Ministry of Natural Resources continued to be coordinated with the MSP rabies program in areas related to laboratory diagnosis and the production of canine rabies vaccine.

8.393 The MSP organized a national team to develop a national disaster preparedness plan.

Mobilization of Technical and Financial Resources

8.394 **International cooperation:** *UNICEF* donated US$250,000 for integrated rural development (1981-1984) and for maternal and child health; *UNFPA*, US$496,846 for family planning (1981-1984); *ILO*, US$11,000 for actuarial evaluation of the Honduran Social Security Institute; *IDB*, US$7.3 million for rural waterworks and sanitation (1981-1984), US$27 million for construction of water supply systems for three cities (1981-1984), US$14 million for development of the physical infrastructure (1981-1984), US$9 million for improvement of rural waterworks (3 years), US$24 million for consolidation and extension of water distribution lines in four cities (approved in 1984), and US$380,000 for studies on hygienic conditions of housing; and *IBRD*, US$31.4 million for urban sanitation (6 years).

8.395 **Bilateral cooperation**: *USAID* provided US$11,242,000 for basic sanitation (1982-1987), US$70,200 for maternal and child health (1980-1984), US$15,391,000 for administrative systems (1981-1984), US$101,500 for immunization, US$157,500 for tuberculosis control, US$15,141,000 for continuing education for health workers, US$10,350,000 for water and sewage facilities (1982-1985), US$1.4 million for water supply services for the Metropolitan District (2 years), and US$31,100 for urban rabies control (1980-1984); *EEC* provided US$4,576,000 for basic sanitation (1982-1985); the *Government of France*, US$15,750,000 for hospital equipment (1984-1985); the *Government of Japan*, US$2.5 million for hospital equipment (1 year); and the *Government of Switzerland*, US$1,033,300 for rural sanitation.

8.396 **Foundations**: *Project Hope* provided US$3 million for staff training (1983-1986); *Pathfinder*, US$57,348 for family health (1983-1986) for 1 year; and *Johns Hopkins*, US$13,500 for health education (2 years).

Cooperation Provided by PAHO/WHO

8.397 **Professional staff assigned to the country**: 6, including the PAHO/WHO Country Representative and advisers in: epidemiology, maternal and child health, environmental sanitation, and health service development. The Institute of Nutrition of Central America and Panama provided technical support in the nutrition area.

8.398 **Regional and intercountry advisers**: 56, for a total of 351 days, in: epidemiology techniques, veterinary public health, ecology, human resources, dentistry, development of health services, administration, sanitary engineering, computing, vector control, drugs, nutrition, maternal and child health, and social security.

8.399 **Short-term consultants (STC)**: 41, for a total of 504 days, in: sanitary engineering, epidemiology, information systems, drugs, vector control, health planning and administration, biomedical equipment maintenance, risk approach, maternal and child health, human resource development, mental health, social security, and development of health projects.

8.400 **Fellowships**: 234, at an actual cost of US$128,630, in: health planning, Master of Public Health, medical statistics and records, basic demography, various topics in epidemiology and disease control, maternal and child health, cancer, hematology, public health dentistry, serological diagnosis of parasitic diseases, pesticide toxicology, mental health and community psychiatry, educational technology and the development of human resources, nutrition in primary health care, and drug registration.

8.401 **Courses, seminars, and workshops**: 175 courses with 2,802 participants, representing a contribution of US$101,609, in: training of health science instructors, medical statistics and records, biomedical equipment maintenance, pesticide toxicology, mental health, vector control, epidemiology, sanitary engineering, training of traditional midwives and health protectors, maternal and child health, risk approach, public health laboratory procedures, disaster preparedness, health education, public health dentistry, and various aspects of public health administration.

8.402 **Grants**: 7, totaling US$131,000, were awarded for studies on: the health of the elderly, the use of drugs in health services, an analysis of the status of professional practice in nursing, activities under the Plan for Priority Health Needs in Central America and Panama, the epidemiology of visceral leishmaniasis, and a seroepidemiological survey of the prevalence of Chagas' disease. In addition, funds were made available for the purchase of equipment and supplies for the Educational Health Technology Unit (UTES) of the School of Medical Sciences and for reequipping a number of maternity clinics in the interior of the country.

General Appraisal and Future Trends

8.403 In 1984, significant efforts were made in the health sector. These resulted in the definition of a structure for the MSP that has enabled the Ministry to conduct basic health programs, coordinate activities with the Honduran Social Security Institute (HSSI), formulate a human resource development policy, institute a local programming process, create a national water and sanitation commission to promote the implementation of the national plan defined in 1983, and improve the Ministry's managerial capacity.

8.404 The implementation of programs to extend the coverage of health services to underserved regions and priority groups has been hindered by the persistence of critical economic conditions within the country. To deal with this situation, the MSP has devel-

oped the following criteria for making the best possible use of resources: examine and adjust strategies and set medium-term objectives; relate the implementation of local health programs to priority problems, human groups, and geographic areas in order to allow optimal use of resources and extend the coverage of services; undertake joint actions and programs with HSSI to achieve short-term economies of scale; involve the community in the financing of services; bring health workers and training centers into the work-study strategy; and develop the ability to manage external cooperation and improve its utilization on the basis of priority needs.

8.405 There is an overall policy commitment reflected in the specific actions mentioned above, to initiate a process which is adequately and rationally structured yet flexible enough to accommodate the necessary changes in the years ahead, and to the achievement of more efficiency and effectiveness in the delivery of health services.

Jamaica

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	2,135,800
Percentage of urban population (as nationally defined)	1982	46.3
Birth rate/1,000 inhabitants	1983	28.8
Mortality rate/1,000 inhabitants	1983	5.9[a]
State of Health Indicators		
Life expectancy at birth	1975-80	70.1
Infant mortality/1,000 live births	1982	26.5
Maternal deaths/1,000 live births	1978	5.5
Death rate 1-4 years/1,000 children	1978	3.0
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,544
Availability of proteins (grams) per capita/day	1979-81	63.5
Percentage of deaths due to:		
infectious and parasitic diseases	...	...
tumors	...	...
heart diseases	1978	83.3
motor vehicle traffic accidents	1978	34.9

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	54.0
—poliomyelitis	1983	51.0
—measles	1983	47.0
—tuberculosis	1983	44.8
Percentage of population served with potable water	1984	90.0
Percentage of population served by sanitary waste disposal	1977	94.5
Consultations per inhabitant per year	1983	1.6[b]
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1983	2.6
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	1.9
Nurses per 10,000 inhabitants	1983	8.0
Nursing auxiliaries per 10,000 inhabitants	1983	4.6
Health Expenditure		
Health Expenditure per capita (in US$)	1983	46.0
Total health expenditure as a percentage of the GDP	1983	3.6
Percentage of the National Budget dedicated to health	1982-83	8.9

... Data not available.

[a] It is believed that a significant number of infant mortality is not being reported. [b] Public hospitals and health centers. Data from private sources are not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.406 Despite substantial constraints, actions were carried out to strengthen the capability of the health service infrastructure in the country. Guidelines for strengthening the operational level of primary health care were completed, which were the result of the experience gained in selected pilot health districts; the roles and functions of secondary and tertiary levels of health care were reviewed; and the linkage between these levels was surveyed. Also, a structural analysis of the intermediate and distributive level of primary health care of the parish health departments was completed; the results were fed back to the central level of the Ministry of Health and to all parishes. With reference to the national information system, steps were taken to improve the information available on secondary and tertiary services, and preliminary investigations examined the feasibility of using hospital computers to support the system.

8.407 In the area of human resources, the implementation of standards for nursing education continued through 1984, and grants, fellowships, and teaching assistance were given to programs in the national and re-

gional teaching institutions (University of the West Indies, College of Arts, Science, and Technology, and the West Indies School of Public Health).

8.408 Inservice training activities have been implemented through the Ministry of Health Training Branch and should continue to receive priority as part of the strengthening of the Ministry of Health's training capability.

8.409 In environmental health, continued progress has been made in the priority areas of water quality and supply and environmental pollution control. Activities involved a number of government agencies and, through the efforts of the National Action Committee, funding has been identified for the development of a Decade Water Plan.

Health promotion and disease control

8.410 Specific projects on family planning and family life for eight communities received support through government ministries and national agencies, UNFPA, UNICEF, and the Government of Norway. The proposal to fluoridate water supplies was reviewed during 1984, and investigations into salt fluoridation were begun.

8.411 Epidemiological surveillance and disease control, sexually transmitted diseases, and veterinary public health have shown a substantial progress.

8.412 In conjunction with the Pan Caribbean Disaster Preparedness and Prevention Project, the Government took definite steps in curriculum development and in environmental planning and hospital preparedness in case of disasters.

Mobilization of Technical and Financial Resources

8.413 **Technical Cooperation Among Developing Countries (TCDC)**: Jamaica continued to be a source of recruitment for short-term consultants and temporary advisers to serve in other countries in the Caribbean. Staff from the Unversity of the West Indies and from government ministries undertook these assignments. Efforts to promote TCDC between Jamaica and Haiti continued.

8.414 **International cooperation**: *UNICEF* assisted in an urban upgrading project and in the construction of health centers; *UNFPA* gave support to the Duhaney Park Health Center and for the purchase of contraceptives; *IDB* gave US$1,948,529 for the Greater Mandeville Water Supply project; and *FAO/UNDP* gave US$16,176 for soil conservation.

8.415 **Bilateral cooperation**: *USAID* gave US$790,441 for improvement of a health management project, US$24,448 for family life education, and US$90,073 for a rural agricultural project; *European Economic Community* assisted a public health laboratory and gave US$215,808 for delivery of veterinary services; the *Government of the Netherlands* gave US$687,500 to improve community health centers and US$93,933 for the "Hague Meylersfield" agricultural project; and the *Government of Italy* aided a major rural water supply scheme.

Cooperation Provided by PAHO/WHO

8.416 **Professional staff assigned to the country**: 7, the PAHO/WHO Country Representative and advisers in: health statistics, health management, sanitary engineering, community development, project management, and nursing education (who is also the regional adviser in nursing education).

8.417 **Regional and intercountry advisers**: Several, in: veterinary public health, health planning, health systems development, disaster preparedness, mental health, dental health, and maternal and child health.

8.418 **Short-term consultants (STC)**: Several, in: nursing, medical records, and mental health.

8.419 **Fellowships**: 56, in: meat inspection, environmental health, food inspection, public health planning, health care administration, laboratory services, techniques in reagent production, epidemiology, dental health, medical records, community health, drug abuse, dairy cattle production, community nutrition, sexually transmitted diseases, maternal and child health, neonatology, radiology, and health management. The total cost was approximately US$208,000.

8.420 **Courses, seminars, and workshops**: 27, for over 500 participants, covered the subjects of hospital administration, public health inspection, water supply, environmental sanitation, drug abuse, Hansen's disease, immunization, perinatal, and geriatric care. PAHO/WHO's financial contribution was approximately US$41,000.

8.421 **Grants**: PAHO/WHO provided grants to the University of the West Indies (medical faculty), a community rehabilitation program, and a community education project totaling approximately US$14,000.

General Appraisal and Future Trends

8.422 In 1984, PAHO/WHO supported the same number of programs as in 1983, with a reduced number of professional staff.

8.423 The national economic crisis made a severe impact on the Ministry of Health and its programs during 1984. The Ministry began implementing a program of administrative rationalization of its hospital services during the second half of the year; a major effect of this is likely to be an increased emphasis on developing linkages among levels of care, an area in which PAHO/WHO has given and should continue to give assistance. In addition, revised and increased fees for hospital services were introduced in November. These increases are likely to place an additional strain on primary care services.

Mexico

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	74,980,500
Percentage of urban population (as nationally defined)	1980	66.3
Birth rate/1,000 inhabitants	1981	34.0
Mortality rate/1,000 inhabitants	1982	7.1
State of Health Indicators		
Life expectancy at birth	1983	65.7
Infant mortality/1,000 live births	1983	53.0
Maternal deaths/1,000 live births	1981	3.5
Death rate 1-4 years/1,000 children	1981	2.6
Percentage of newborn with a weight of less than 2,500 grams	1978	15.0
Availability of calories per capita/day	1979-81	2,890
Availability of proteins (grams) per capita/day	1979-81	74.9
Percentage of deaths due to:		
infectious and parasitic diseases	1976	20.3
tumors	1976	5.8
heart diseases	1976	11.8
motor vehicle traffic accidents	1976	2.8

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	...	...
—poliomyelitis	...	...
—measles	...	...
—tuberculosis	1983	53.7
Percentage of population served with potable water	1980	71.0
Percentage of population served by sanitary waste disposal	1980	50.7
Consultations per inhabitant per year	1982	140.0
Number of discharges per 100 inhabitants	1982	3.7
Number of beds per 1,000 inhabitants	1982	0.8
Human Resource Indicators		
Physicians per 10,000 inhabitants	1981	8.2
Nurses per 10,000 inhabitants	1981	4.9
Nursing auxiliaries per 10,000 inhabitants	1981	6.1
Health Expenditure		
Health Expenditure per capita (in US$)	1983	5
Total health expenditure as a percentage of the GDP	1984	5.7
Percentage of the National Budget dedicated to health	1983	0.7

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.424 A new general health law, reapportioning responsibilities among the central, State, and municipal levels, went into effect. The year also saw the adoption of the national health plan for 1984-1988, which includes provisions for reorganizing the Ministry of Health and Welfare (SSA) and integrating its social welfare programs into the National System for Comprehensive Family Development (DIF System). Pursuant to these policies, responsibilities for programs and services in the Ministry's central units were being decentralized and shifted to the coordinated public health services for individual States and territories. Programs affected were in the areas of maternal and child health and family planning and infectious and chronic diseases. In addition, 18 units of the Federal hospital network (now abolished), 8 psychiatric hospitals, and 16 psychiatric services were transferred to the State or municipal level.

8.425 In health planning, a number of State health plans were designed and local programming was intensified; workshops and seminars were held for training State health employees involved in the proposed decentralization; and a national workshop on decentralization of services and local administra-

tion was conducted for SSA, DIF, Health Cabinet, and coordinated services staff responsible for directing the decentralization. A number of foreign experts also participated. In the rural health program, health care, rehabilitation, education, and community participation activities conducted in marginal urban and rural areas by the SSA, DIF, and certain university institutions were gradually being strengthened.

8.426 In the human resources area, health planning courses were offered at the School of Public Health, and primary care, epidemiology, and information systems areas were strengthened. The establishment of an Undersecretariat for Human Resources and Research gave impetus to the preparation of curriculum designs for the training of physicians, nurses, and nursing auxiliaries.

8.427 In environmental health, leakage control received priority attention under the national plan for the International Drinking Water Supply and Sanitation Decade (IDWSSD). It is estimated that over 50% of the water produced is lost through leakage. Controlling this problem would help to meet the needs of a larger number of people (by increasing coverage) and to lower costs (through operational efficiency). Air, water, and soil pollution control operations and research and training projects in the field were affected to varying degrees by the transfer of administrative units, programs, and resources to the Ministry of Urban Development and Ecology.

Health promotion and disease control

8.428 The training of primary level staff was stressed in the maternal and child care and family planning program. In epidemiology, a national epidemiological surveillance program, to be implemented by stages throughout the country, was designed. In order to determine the effectiveness of the country's immunization programs and the adjustments needed, a seroepidemiological survey was carried out in one State. The most important activity in disease control was the design and implementation of a national diarrheal disease control program, launched at a high-level workshop conducted at the Children's Hospital of Mexico.

8.429 The Organization cooperated in the design of a model for decentralizing Mexico's malaria programs from the central level to the States. Of particular interest in tuberculosis control were the training courses in tuberculosis, bacteriology, epidemiology, and control programming. A national plan for the prevention of diabetes and hypertension was formulated. Professional staff of the national laboratory system received training in six national and two international courses as part of the ongoing effort to strengthen the system.

Mobilization of Technical and Financial Resources

8.430 **Technical Cooperation Among Developing Countries (TCDC)**: Mexico is one of the focal points for the development of TCDC. An inventory was made of potential national capacities for technical cooperation in some 150 Mexican institutions in the health and other sectors involved in activities that lend themselves to this type of cooperation. The inventory provided data on some 600 specific lines of cooperation that can be offered to other countries.

8.431 **International cooperation**: *UNDP* provided US$91,987 for laboratory programs; *UNFPA*, US$983,166 for maternal and child health and family planning; *UNICEF*, US$1.4 million for multisectoral programs for the benefit of underserved rural and urban groups; and *IDB*, US$1.4 million for the Cutzamala project, US$23 million for the Monterrey project, and US$8 million for the Municipal development project.

8.432 **Foundations**: The *W. K. Kellogg*

Foundation donated US$138,000 for the Tijuana family health program.

Cooperation Provided by PAHO/WHO

8.433 **Professional staff assigned to the country:** 12, including the PAHO/WHO Country Representative and advisers, in: health service administration, planning, maternal and child health, child growth and development, community health, epidemiology of chronic and communicable diseases, statistics, environmental sanitation, nursing administration, veterinary medicine, sanitary engineering, and public health laboratories.

8.434 **Regional and intercountry advisers**: 26, at a cost of approximately US$26,550.

8.435 **Short-term consultants (STC)**: 32, at a cost of approximately US$95,848.

8.436 **Fellowships**: 98, for a cost of US$32,500. The studies covered all health disciplines.

8.437 **Courses, seminars, and workshops:** 42, with the participation of 1,242 national officials, in: chronic disease control; administrative decentralization; women, health, and development; medical coding and biostatistical information system; nursing education; trends in health service research; human resource planning; diarrheal diseases and oral rehydration; epidemiology; bacteriology; veterinary medicine; leishmaniasis; rabies; mortality; disaster emergency measures; environmental sanitation; malaria; laboratories; textbooks; vaccines; nutrition; and dentistry. PAHO/WHO's contribution came to US$142,985.

8.438 **Grants**: PAHO/WHO awarded US$115,000 for the decentralization of SSA programs and services, US$40,000 to the School of Public Health for a health planning course, US$40,000 to the School of Public Health for a workshop on health service research, and US$20,000 for studies on the nursing profession.

General Appraisal and Future Trends

8.439 The performance of Ministry of Health and Welfare programs in 1984 was uneven in terms of the achievement of goals, with some programs exceeding their targets and others unable to reach them. This was due to problems in particular programs and a variety of general factors stemming from the sector's reorganization, the application of the decentralization policy, and the repercussions of the economic crisis, especially the increase in operating costs.

8.440 Problems in obtaining spare parts, spraying and laboratory equipment, insecticides, chemicals and other inputs, because they had risen in price, were difficult to import, or were scarce on the domestic market, affected the control programs for malaria, onchocerciasis, and other diseases.

8.441 In Mexico, PAHO/WHO's technical cooperation program was closely linked to a health sector reorganization based on the strategies of sectorization, modernization, and decentralization. The studies conducted by the country and PAHO/WHO for the purpose of gaining better knowledge of the sector should be helpful in identifying potentially fruitful areas of technical cooperation.

Netherlands Antilles

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1981	232,000
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1981	17.5
Mortality rate/1,000 inhabitants	1981	5.3
State of Health Indicators		
Life expectancy at birth	1980	72.8[a]
Infant mortality/1,000 live births	1983	15.8
Maternal deaths/1,000 live births	...	...
Death rate 1-4 years/1,000 children	1983	0.8[b]
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,172
Availability of proteins (grams) per capita/day	1979-81	81.2
Percentage of deaths due to:		
infectious and parasitic diseases	1983	3.6[b]
tumors	1983	22.7[b]
heart diseases	1983	18.5[a]
motor vehicle traffic accidents	1983	1.8[b]

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1982	85.8[b]
—poliomyelitis	1982	85.8[b]
—measles	1982	30.0[b]
—tuberculosis	—	—
Percentage of population served with potable water	1981	81.8[b]
Percentage of population served by sanitary waste disposal	1984	100.0[b]
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1983	10.4
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	10.8
Nurses per 10,000 inhabitants	1983	19.4
Nursing auxiliaries per 10,000 inhabitants	1983	16.5
Health Expenditure		
Health Expenditure per capita (in US$)	1982	690[b]
Total health expenditure as a percentage of the GDP	1981	8.5[b]
Percentage of the National Budget dedicated to health	...	...

... Data not available.
— None.
[a] Only Curaçao and Aruba. [b] Only Curaçao.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.442 Six islands make up the Netherlands Antilles: Aruba, Bonaire, Curaçao, St. Eustatius, St. Maarten, and Saba. The Ministry of Public Health and Environmental Hygiene of the Netherlands Antilles is responsible for providing overall health care for the population of these islands.

8.443 In the Netherlands Antilles, there are 35 health installations that have 2,477 inpatient beds; of these beds, 50.5% are in general hospitals, 24.7% in geriatric care, and 18.2% in psychiatric care. Hospital facilities in the islands of St. Maarten, Saba, and St. Eustatius have been under review simultaneously with those of Curaçao and Bonaire.

8.444 It is proposed that, as of 1986, Aruba will have a "status apparatus" in relation to the Netherlands Antilles, so that emphasis is now placed on the decentralization of services. PAHO/WHO consultants have pro-

vided technical advice on the administrative aspects in the early phases of decentralization. A crucial component in this endeavor will be the development of a health information system. The legal implications relating to decentralization are also of considerable importance.

8.445 The Ministry of Education has started work on the total personnel requirements for the Netherlands Antilles, and the Ministry of Health is preparing an assessment of health personnel requirements. Concomitantly, the standards and legal requirements governing all levels of health personnel are being developed.

8.446 The main areas of concern in environmental health are: improvement of the quantity and quality of potable water supply, solid waste disposal control, control of oil contamination of the sea, air pollution control, and radiation hazards control. The program is directed toward the prevention of pollution of the sea, land, and air.

Health promotion and disease control

8.447 The Expanded Program on Immunization (EPI) has continued to receive close attention. However, no decision is as yet forthcoming on joining the PAHO/WHO Revolving Fund. There was a minor outbreak of pertussis which has led to discussions about the delivery of the national program.

8.448 Occupational health is a priority area, principally due to the large petrochemical complexes in Aruba and Curaçao, the dry dock facilities in Curaçao, and the airline personnel. With regard to mental health care, the principal hospital admissions are for schizophrenia, other psychoses, and personality disorders. Excessive alcohol consumption poses a problem in all the islands, while hard drugs tend to be used principally in St. Maarten, Aruba, and Curaçao. Dengue and yellow fever continue to pose a threat to the Netherlands Antilles because of the presence of the vector *Aedes aegypti*. However, no cases of these diseases were reported in 1984. PAHO/WHO cooperated in evaluating the *Aedes aegypti* control programs in St. Eustatius, Bonaire, St. Maarten, and Saba. Yellow fever vaccine also was obtained for the authorities of Curaçao.

8.449 The health authorities of the islands are being especially vigilant to prevent the importation of rabies. No cases of foot-and-mouth disease were reported in 1984. The health authorities, with PAHO/WHO collaboration, carried out an evaluation in October of the rodent control program.

Cooperation Provided by PAHO/WHO

8.450 **Professional staff assigned to the country**: There are no PAHO/WHO staff based in the Netherlands Antilles. The Caracas PAHO/WHO Office is the Country Office responsible for the delivery of the PAHO/WHO cooperation program.

8.451 **Regional and intercountry advisers**: 5, for a period of 35 days, in: health planning, information systems, *Aedes aegypti*, rodent control, and radiation hazards.

8.452 **Short-term consultants (STC)**: 2, for 60 days, in: hospital architecture and veterinary public health.

8.453 **Courses, seminars, and workshops**: Inservice training was provided to personnel of the Ministry of Health and Environmental Hygiene of the Netherlands Antilles by PAHO/WHO, as well as to the Veterinary Public Health Laboratory staff of Aruba. No fellowships were awarded to health personnel of the Netherlands Antilles.

General Appraisal and Future Trends

8.454 The economy of the Netherlands

Antilles has been severely affected by the decline of tourism and the reduction of the oil supply to the refineries in Aruba and Curaçao. The continuing decline in oil revenues and the possibility that the Aruba oil refinery may close down is causing concern in the islands; as a consequence, an increase in demand is expected for outside cooperation, notwithstanding the additional help that Holland is expected to provide.

8.455 Political instability surfaced during 1984 and there was a change of government in September, due to a rearrangement of the parliamentary coalition which governs the islands. Aruba is expected to leave the group of six islands to have its own "status apparatus" in 1986. Decentralization of health services, therefore, will continue to be an area of considerable interest for the local authorities.

8.456 For 1985, it is expected that the main programs to receive PAHO/WHO collaboration will be: health services development, environmental health, and veterinary public health.

Nicaragua

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	3,165,000
Percentage of urban population (as nationally defined)	1983	56.6
Birth rate/1,000 inhabitants	1983	44.2
Mortality rate/1,000 inhabitants	1983	9.5
State of Health Indicators		
Life expectancy at birth	1980-85	59.8
Infant mortality/1,000 live births	1983	75.2
Maternal deaths/1,000 live births	...	...
Death rate 1-4 years/1,000 children	...	...
Percentage of newborn with a weight of less than 2,500 grams	1984	15.0
Availability of calories per capita/day	1979-81	2,236
Availability of proteins (grams) per capita/day	1979-81	58.7
Percentage of deaths due to:		
infectious and parasitic diseases	...	...
tumors	...	...
heart diseases	...	...
motor vehicle traffic accidents	...	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	23.9
—poliomyelitis	1983	88.0
—measles	1983	23.0
—tuberculosis	1983	88.5
Percentage of population served with potable water	1984	43.8
Percentage of population served by sanitary waste disposal	1984	19.6
Consultations per inhabitant per year	1983	210.0
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	...	...
Human Resource Indicators		
Physicians per 10,000 inhabitants	1984	0.5
Nurses per 10,000 inhabitants	...	...
Nursing auxiliaries per 10,000 inhabitants	...	...
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	...	...

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.457 The regionally structured Unified National Health System consolidated the organization and operation of 80% of the health areas and sectors as a basis for extending coverage and upgrading the quality of care provided to the country's population, with special emphasis on mothers, children below age 5, and workers. The following activities contributed to this goal: review and adjustment of the regionalization criteria; definition of health areas and sectors; strengthening of the National Health Planning Division and reorganization of the Ministry of Health; support for the regional planning units; improvement of the operational capacity of the National Division and Regional Units for Health Statistics and Information; and broadening of intersectoral coordination. The advances made in 1984 in the national health service maintenance program and the national essential drugs and critical inputs system are also appropriately considered under this heading.

8.458 Human resource development continued to be an area of intensive activity,

emcompassing the training of auxiliary, technical, and undergraduate and graduate professional personnel, as well as the training of members of health brigades and practical midwives. A total of 2,267 auxiliary and technical personnel were enrolled in three Polytechnic Institutes (Managua, León, and Carazo) and eight departmental training units. The clinical residencies program was continued (134 physicians), as was the Master's program in epidemiology and health administration (30 professionals). The continuing education program was carried forward, and additional certification programs were conducted for empirical and auxiliary personnel.

8.459 With the cooperation of the National Council of Higher Education, the Nicaraguan Water and Sewage Institute, the Ministry of Health, and the Institute of Natural Resources, a graduate program in environmental and sanitary engineering was prepared during the year. The program was scheduled to begin in 1985.

8.460 Substantial numbers of textbooks and supplies were distributed under the Expanded Textbook and Instructional Materials Program to the following entities: Schools of Medicine of León and Managua; Central American University; Polytechnic University; Health Polytechnical Schools of Managua, León, and Carazo; School of Nursing of Estelí; Center for Health Organization of Nicaragua (CENIDOS)-Ministry of Health; National Water and Sewage Institute; and PAHO/WHO Documentation Center. A total of 11,728 volumes of textbooks and 1,393 diagnostic instruments, with a total cost of US$239,842.09 were distributed.

8.461 In environmental health, advances were made in strengthening the Directorate for Rural Water Supply Systems, the rate study was completed, and the medium-term development plan for construction of water and sewage facilities was adjusted on the basis of proposals in the Plan for Priority Health Needs in Central America and Panama.

Health promotion and disease control

8.462 Coverage of maternal and child care services was at 80% for infant care, 84% for prenatal care, 42% for institutional delivery, 37% for postpartum control, and 58% for the care of children suffering from diarrheal diseases. The national immunization program was strengthened and had a significant impact. No cases of poliomyelitis were reported, and the measles vaccination program covered 100% of the infants under age 1. The epidemiological surveillance program was strengthened with the addition of a national reference center at the Pediatric Hospital. The Ministry of Agricultural Development initiated the first stage of the Five-Year Food and Nutrition Plan under its Food and Nutrition Program.

Mobilization of Technical and Financial Resources

8.463 **Technical Cooperation Among Developing Countries (TCDC)**: TCDC activities in the field of human resources and technology were undertaken with Canada, Cuba, and Mexico.

8.464 **International cooperation**: *UNICEF* provided US$1,205,000 for eight program areas: analysis of Nicaragua's economic and social situation, primary care strategy, maternal and child health, communicable disease control, essential drugs, health equipment and facilities maintenance, water supply, and environmental hygiene, and US$4,672,000 for the Five-Year Food and Nutrition Plan; *IDB*, US$1.5 million for environmental health; *International Atomic Energy Agency*, US$50,000 for a radiology program; *WFP*, US$3 million for supplemental food; and *OAS*, US$1,000 for staff training.

8.465 **Bilateral cooperation**: *CIDA* assisted with US$320,000 for training in nutrition; the *Government of Mexico*, with

US$14,000 for mental health (2 years); the *Government of Cuba*, US$600,000 for auxiliary, technical, and postbasic training; and the *Government of Italy*, US$698,000 for family planning through UNFPA.

Cooperation Provided by PAHO/WHO

8.466 **Professional staff assigned to the country**: 4, including the PAHO/WHO Country Representative, a medical officer, an administrative assistant, and an officer in charge of the Documentation Center and the Textbook and Medical Equipment Program.

8.467 **Regional and intercountry advisers**: 62, in the areas of: health service planning, epidemiology, nutrition, oral health, maternal and child health, medical education, construction of health facilities, administration, drugs, x-ray diagnosis, environmental health, and sanitary engineering.

8.468 **Short-term consultants (STC)**: The Organization, at the request of the country, provided the services of 51 consultants for various program areas.

8.469 **Fellowships**: 90, with a cost of US$204,641, in the following study areas: postbasic diversified training in nursing, nutrition, health planning, administration, epidemiology, environmental sanitation, rehabilitation, malaria, clinical laboratory procedures, food quality control, and specialized diagnosis of tropical diseases.

General Appraisal and Future Trends

8.470 The destruction of 50 health posts and centers has impaired the ability to provide regular health care to 225,000 people. In addition, malaria control and related special activities have deteriorated in the conflict-stricken regions, with a consequent increase in malaria indicators.

8.471 Despite the critical situation in the country, it was possible, with assistance provided by PAHO/WHO from regular, regional, and extrabudgetary funds, to accomplish a high percentage of the activities programmed (80%), while also inaugurating new programs relating to the institutional development of the Unified National Health Service, the health for all strategy, the Five-Year Food and Nutrition Plan, and the National Essential Drugs and Critical Inputs System.

8.472 After 5 years of applying a broad and highly flexible approach, it will be necessary to review with the national authorities the projected lines of PAHO/WHO collaboration in order to systematize the provision of medium-term external funds and coordinate them more effectively.

8.473 Important progress has been made in interagency and intercountry coordination with the IDB, UNFPA, UNDP, and UNICEF; however, joint working procedures need further improvement. This approach also should be extended to working relations with other agencies of the United Nations system.

8.474 Also, if the guidelines for PAHO/WHO cooperation for the medium-term are defined to reflect additional responsibilities stemming from the Plan for Priority Health Needs in Central America and Panama, it will be necessary to review the administrative structure and the complement of technical and professional staff to ensure that the necessary resources are available for continued monitoring of the managerial process at the PAHO/WHO Country Office and Headquarters.

Panama

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	2,134,000
Percentage of urban population (as nationally defined)	1983	49.8
Birth rate/1,000 inhabitants	1983	25.4
Mortality rate/1,000 inhabitants	1983	3.8
State of Health Indicators		
Life expectancy at birth	1983	71.0
Infant mortality/1,000 live births	1985	21.0
Maternal deaths/1,000 live births	1983	0.6
Death rate 1-4 years/1,000 children	1983	1.7
Percentage of newborn with a weight of less than 2,500 grams	1982	8.2
Availability of calories per capita/day	1982	3,044
Availability of proteins (grams) per capita/day	1982	69.1
Percentage of deaths due to:		
infectious and parasitic diseases	1982	6.7
tumors	1982	13.1
heart diseases	1982	16.6
motor vehicle traffic accidents	1982	4.6

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	56.0
—poliomyelitis	1983	55.6
—measles	1983	57.0
—tuberculosis	1983	78.0
Percentage of population served with potable water	1985	90.0
Percentage of population served by sanitary waste disposal	1982	80.8
Consultations per inhabitant per year	1983	150.0
Number of discharges per 100 inhabitants	1983	9.1
Number of beds per 1,000 inhabitants	1983	3.2
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	10.4
Nurses per 10,000 inhabitants	1983	10.4
Nursing auxiliaries per 10,000 inhabitants	1983	15.8
Health Expenditure		
Health Expenditure per capita (in US$)	1983	98
Total health expenditure as a percentage of the GDP	1983	10.1
Percentage of the National Budget dedicated to health	1983	14.1

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.475 Work began on implementing the Government/IDB-financed project for strengthening the National Network of Health Services. In carrying out this work, Panama is applying the strategic planning approach involving the analysis of proposals and changes at three levels to ensure that resources will be used efficiently and with the greatest social impact. The plan encompasses three areas: planning the network, developing the system, and developing the infrastructure. A nationwide learn-by-doing effort instituted under this scheme resulted in the training of more than 300 national employees. Underserved groups were identified, and the population's access to various levels of care was analyzed. The output and productivity of health care delivery units and their problem solving capacity were evaluated. Finally, a study of health sector financing was carried out. With regard to the service network, its organization was analyzed and preliminary studies on specific projects were performed. Along with this, architectural and functional studies of essential hospitals were made, including new hospitals at San Miguelito and La Chorrera; hospitals being remodeled at Ocú, Las Tablas, and Santo To-

más; and hospitals under construction in Colón and Soná.

8.476 In the development of the operational capacity of institutions and services, administrative procedures of the Ministry and of the integrated health services were strengthened in keeping with the strategies of decentralization and integration. A drug control and consumption model was instituted for use in the integrated health services. Of special importance in the area of nursing service administration were the measures taken to ensure optimal utilization of available resources, as part of the process for developing the services network and the unified health system.

8.477 In human resources, priority was given to the following training activities for health service nurses and auxiliaries: a planning course for 13 participants, three programming workshops for public health and community nurses, and a seminar on primary care. Also, the teaching-service approach was strengthened, and arrangements were made for student practice at the initial level of care in rural facilities.

8.478 In environmental health, despite budget constraints in the Ministry of Health, the Ministry's Department of Basic Sanitation constructed 35 water supply systems, 157 wells, and 5,522 latrines. The training of sanitation inspectors through seminars on stabilization ponds, water quality control, pollution control, and silk traps was intensified. Sanitation projects with an estimated cost of US$81 million were prepared under the Plan for Priority Health Needs in Central America and Panama.

Health promotion and disease control

8.479 A survey of human resources in food and nutrition was taken, and a proposal for the establishment of a school of nutrition at the University of Panama was prepared. Other noteworthy events were an analysis of seminars on hospital nutrition, the training of instructors for food and nutrition education programs, and the revision and reformulation of food aid programs. A study of risk factors in maternal and child health made it possible to redirect efforts toward the areas and groups at greatest risk. As a result, more emphasis was placed on the promotion of breastfeeding by means of training, broad-scale publicity, mother's milk banks, and the organization of information centers. Finally, an infant survival project was prepared for submittal to prospective financing organizations. Dental health care standards were developed for the Ministry of Health and the Social Security Agency.

8.480 In epidemiology, emphasis was placed on training, especially in control of sexually transmitted diseases, epidemiological research on noncommunicable diseases, and tuberculosis control. A workshop on the cold chain was held, and the Expanded Program on Immunization (EPI) was evaluated. The number of malaria cases declined significantly, from 341 cases in 1983 to 121 in 1984. A proposal for funding the malaria and *Aedes aegypti* eradication programs was formulated within the context of the Plan for Priority Health Needs in Central America and Panama. The amount of the proposal was US$30 million.

Mobilization of Technical and Financial Resources

8.481 **Technical Cooperation Among Developing Countries (TCDC)**: Technical personnel were made available to the countries of the Central American Isthmus for preparing profiles of subregional projects under the Plan for Priority Health Needs in Central America and Panama.

8.482 **International cooperation**: *UNFPA* donated US$300,000 for family planning (1979-1986) and US$150,000 for

nursing education (1984-1986); *IDB* gave US$240,000 as a preliminary investment fund for the National Network of Health Services.

8.483 **Bilateral cooperation**: *AID/INCAP* provided US$776,857 for promotion of breastfeeding (1984-1986).

Cooperation Provided by PAHO/WHO

8.484 **Professional staff assigned to the country**: 5, including the PAHO/WHO Country Representative and four advisers, in: planning, hospital administration, nursing, and veterinary medicine (until August). A regional vector control team consisting of an entomologist, an *Aedes aegypti* specialist, and an educator was stationed in Panama from mid-year. In addition, a medical officer for the breastfeeding, maternal and child health, and nutrition project was added to the staff.

8.485 **Regional and intercountry advisers**: 107, for a total of 730 days, in: service administration and development, nursing, human resources, environmental health, computer programs, maternal and child health, nutrition, dentistry, epidemiology, immunization (cold chain), respiratory diseases, vector control, zoonoses and foot-and-mouth disease, food protection, drugs, and entomology.

8.486 **Short-term consultants (STC)**: 42, for a total of 1,004 days, in: service planning and administration, hospital administration, human resources, clinical psychology and sociocultural studies, maternal and child health, dental health, mental health, immunization, and acute respiratory diseases.

8.487 **Fellowships**: 42, for a total of 233 months of studies at a cost of US$194,000, in the following fields: organization of health services, nursing, maternal and child health, environmental health, health education, nutrition, and statistics.

8.488 **Courses, seminars, and workshops**: 40 events, with a combined participation of 1,490 national officials, in the following fields: planning, organization, and administration of health systems; planning at the primary level; supervision and administration; continuing education for primary level workers; human resource planning; environmental health; the risk approach to maternal and child health care; breastfeeding; medical records; food and nutrition; dental health; drug dependency; epidemiological evaluation; drugs; and disaster preparedness.

General Appraisal and Future Trends

8.489 A study coordinated by the Planning Directorate provides evidence that the country is earnestly seeking full development of its resources to meet the needs of the entire population, with emphasis on the satisfaction of social as well as health needs.

8.490 The chief purpose of the Ministry is to expand the coverage of the network of health services, making them more accessible to underserved groups through programs of individual and community care and environmental protection. The health service network project was the central core of these actions.

8.491 In 1984, Panama took an important initiative with respect to the Plan for Priority Health Needs in Central America and Panama. Availing itself of its status as host to the Contadora Group, Panama organized and conducted an important meeting of the members of that group with cabinet ministers from the subregion at which the Director of PASB explained the objectives of the Plan to the foreign ministers of the Group.

8.492 Future developments in the subre-

gional projects will provide additional opportunities for exchange of national experiences, for the utilization of TCDC, and for decisions to concentrate limited resources in critical areas where the impact is greatest. The policy strategies formulated for the development of the health system in the areas of primary care, comprehensive care and service integration, community involvement, and the strategic approach to the planning and administration of health services will facilitate equitable and efficient achievement of the expected goals.

Paraguay

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1985	3,274,300
Percentage of urban population (as nationally defined)	1982	42.3
Birth rate/1,000 inhabitants	1983	36.0
Mortality rate/1,000 inhabitants	1982	7.2
State of Health Indicators		
Life expectancy at birth	1980-85	65.1
Infant mortality/1,000 live births	1982	51.2
Maternal deaths/1,000 live births	1981	2.9
Death rate 1-4 years/1,000 children	1981	3.9
Percentage of newborn with a weight of less than 2,500 grams	1981	6.5
Availability of calories per capita/day	1979-81	2,839
Availability of proteins (grams) per capita/day	1979-81	79.9
Percentage of deaths due to:		
infectious and parasitic diseases	1981	12.5
tumors	1981	7.7
heart diseases	1981	11.6
motor vehicle traffic accidents	1981	1.7

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1984	67.0
—poliomyelitis	1984	68.0
—measles	1984	62.0
—tuberculosis	1984	80.0
Percentage of population served with potable water	1983	25.0
Percentage of population served by sanitary waste disposal	1983	87.8
Consultations per inhabitant per year	1982	70.0
Number of discharges per 100 inhabitants	1982	4.0
Number of beds per 1,000 inhabitants	1982	1.4
Human Resource Indicators		
Physicians per 10,000 inhabitants	1980	6.0
Nurses per 10,000 inhabitants	1980	2.0
Nursing auxiliaries per 10,000 inhabitants	1980	9.0
Health Expenditure		
Health Expenditure per capita (in US$)	1983	12
Total health expenditure as a percentage of the GDP	1979	4.9
Percentage of the National Budget dedicated to health	1985	5.2

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.493 Efforts continued to center around the development of the 1983-1988 national health plan, which directs resources and actions toward the goal of health for all. Emphasis during the year was on regional programming.

8.494 Under a program designed to provide additional facilities at the basic level (health posts) and at the intermediate level (local and regional health centers), work went forward on the construction, equipping, and initial operation of six new health posts and four health centers being built with local funds and with loans and grants provided by international and bilateral cooperation agencies. A number of specialized health centers also were inaugurated, including the Central Laboratory and Institute of Tropical Medicine, both recently organized; the National Cancer and Burn Institute, a 200-bed facility constructed at a cost of US$25 million; and the newly inaugurated Greater National Hospital, with 570 beds and a cost of US$63 million. This development of physical infrastructure was complemented by the strengthening of technical and administrative systems and procedures. Other significant events were the improvement of institutional performance, the review of the information system, and the

analysis of the progress of programs, especially the Expanded Program on Immunization. The results of the analysis reflected improvements in the physical accessibility of facilities to their target population and an increase in operating capacity, particularly in geographic areas formerly unserved or underserved.

8.495 In human resource development, the personnel information, planning, and development system was redesigned and the revised system was used to take a sector-wide health personnel census. Staff training in priority areas continued to be provided through local courses and seminars and the awarding of fellowships for training abroad. The Health Personnel Training Center was reorganized to adjust its programs to the requirements of the national health plan.

8.496 In environmental health, priority was given to water supplies for rural communities. In an initial program, 47 water supply systems were constructed, with IBRD (World Bank) financing, for rural communities with 500 to 4,000 inhabitants; of these systems, 31 were being operated by sanitation boards and the other 11, also in full operation, were awaiting transfer to the appropriate boards. A second program providing for 49 water systems was under way, and 5 of the systems were already in operation. Along the same line of action, projects were prepared with a view to requesting a third IBRD credit for providing water supply facilities to all communities with 500 to 4,000 inhabitants and constructing 12 sewage systems.

8.497 For communities with 150 to 500 inhabitants, 16 basic water systems constructed were completed with the cooperation of the Federal Republic of Germany (GTZ) and were scheduled to go into operation in the near future, and 42 wells with hand-operated pumps were constructed with UNICEF assistance. For communities with fewer than 150 inhabitants and scattered population, a guideline was prepared containing information on the construction and analysis of models and the testing of prototypes of manually operated pumps involving the use of low-cost technology. General guidelines were drawn up for the solid waste program, and the relevant requests for IBRD financing were reviewed.

Health promotion and disease control

8.498 Comprehensive care services, which continued to emphasize maternal and child care, extended their coverage to unprotected geographic areas. Within these services, priority was given to prenatal care, obstetrical care, postpartum care, and the monitoring of infant growth and development. The coverage of partum and postpartum care was increased by using auxiliary personnel and trained practical midwives. Vaccination coverage against the principal immunopreventable diseases continued to expand at a rapid pace and achieved levels close to 50%, compatible with endemoepidemic rates, especially for tuberculosis, measles, pertussis, and tetanus.

8.499 The diarrheal disease control program moved forward slowly. With regard to urban yellow fever, *Aedes aegypti* control operations were intensified at the country's principal ports of entry, yellow fever vaccination of the population at greatest risk was stepped up, and an ambitious *Aedes aegypti* eradication project was prepared and submitted to the IDB with a request for financing. The malaria eradication program moved forward in a satisfactory way despite a number of local outbreaks, which received preferential attention. The Chagas' disease survey continued to be carried out in 27 districts; the *Trypanosoma cruzi* human infection rate was 22.5%.

Mobilization of Technical and Financial Resources

8.500 **International cooperation:**

UNICEF allocated US$1,420,000 for rural water supply services; *UNFPA*, US$984,159 for the extension of the maternal and child health program in rural areas; *IDB*, US$14.4 million for the second stage of the project for extending the coverage of health services, as well as US$507,000 for institutional strengthening of the Ministry of Health; and *IBRD*, US$11.8 million and US$6 million, respectively, for two 4-year water supply projects and US$22.4 million and US$98,000, respectively, for a program of integrated rural development (health component) and a hydrogeologic study (3 years).

8.501 **Bilateral cooperation**: the *Federal Republic of Germany* donated US$4 million for the extension of health service coverage in health regions III and IV which includes 28 posts, 10 centers, and 2 regional centers and for their construction and equipping; US$1.5 million for water supply systems in San Pedro Department (German Development Bank); US$400,000 for water systems in communities with fewer than 500 inhabitants (GTZ grant); and US$700,000 for studies of the health service network in Misiones and Neembucú (GTZ grant); construction, expansion and equipping of health posts and centers (GTZ grant); *Government of Brazil*, US$20 million for construction and equipping of the 200-bed National Cancer and Burn Institute (credit from Banco do Brasil); *Government of France*, US$63 million for construction and equipping of the 560-bed Greater National Hospital (SGE credit); *Government of Japan*, US$8 million for construction and equipping of the Central Laboratory and Institute of Tropical Medicine and equipping of the 70-bed Pedro Juan Caballero Health Center; and *GTZ*, US$1.2 million for water supply systems (4 years) and US$90 million for a 10-year sanitary works plan; and *KfW* gave US$4 million for water supply systems (4 years).

8.502 **Foundations**: the *W. K. Kellogg Foundation* donated US$260,425 for perinatology and maternal and child health.

Cooperation Provided by PAHO/WHO

8.503 **Professional staff assigned to the country**: 9, including the PAHO/WHO Country Representative and advisers in: planning, administration, nursing, environmental health, maternal and child health, and veterinary public health.

8.504 **Regional and intercountry advisers**: 13, for a total of 80 days, in: health administration, nursing, environmental health, maternal and child health, systems analysis, health education, statistics, serology, tropical diseases, and zoonoses.

8.505 **Short-term consultants (STC)**: 14, for a total of 526 days, in: health facility architecture, plant and equipment maintenance, environmental health, supplies, research, maternal and child health, health education, dentistry, community health, and Chagas' disease.

8.506 **Fellowships**: 45, with an aggregate cost of US$100,000, in the following areas of study: public health, malaria and environmental sanitation, cancer epidemiology, risk in maternal and child health, perinatology, technology for the construction of deep tubular wells, tuberculosis control, population policy and maternal and child health, tuberculosis diagnosis, intensive nursing, and socioperiodontics.

8.507 **Courses, seminars, and workshops**: 6, with 560 participants, with a PAHO/WHO contribution of US$32,878, in the following fields: training of volunteers and health promoters at community level, and maintenance of water supply systems.

8.508 **Grants**: PAHO/WHO awarded US$9,000 to finance research on the application of educational models for oral rehydration therapy in the family and the community; US$17,656.25 to finance a health promotion, nutrition, and family welfare project under the responsibility of the Division of Social

Welfare; and US$112,399 to defray local expenses of the support project for extending the coverage of the maternal and child health program in rural areas.

General Appraisal and Future Trends

8.509 The health sector has reached a stage of intensive dynamism, one that could aptly be termed the stage of take-off toward the goal of health for all. This assessment is based on the impressive number of facilities under construction at every level; their operation in the future will bring a substantial increase in the volume of services being supplied and, for reasons of geographic distribution, an expanded area of coverage. Nevertheless, the economic crisis which the country is facing has necessitated a policy of fiscal austerity that limits the allocation of funds required for the operation of health facilities.

8.510 Increased requirements for local funding and technical and financial cooperation have created incentives for better coordination in the planning and implementation of assistance provided by the various international and bilateral agencies and for intensified community involvement. To a lesser degree, such requirements also have strengthened movements toward intersectoral coordination and technical cooperation among developing countries.

Peru

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	18,707,000
Percentage of urban population (as nationally defined)	1981	64.9
Birth rate/1,000 inhabitants	1980-85	37.0
Mortality rate/1,000 inhabitants	1980-85	11.0
State of Health Indicators		
Life expectancy at birth	1982	59.0
Infant mortality/1,000 live births	1982	99.0
Maternal deaths/1,000 live births	1979	3.2
Death rate 1-4 years/1,000 children	1982	10.0
Percentage of newborn with a weight of less than 2,500 grams	1982	9.0
Availability of calories per capita/day	1979-81	2,195
Availability of proteins (grams) per capita/day	1979-81	58.7
Percentage of deaths due to:		
infectious and parasitic diseases	1980	45.9
tumors	1980	5.8
heart diseases	1980	11.3
motor vehicle traffic accidents	1980	5.0

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1984	27.8
—poliomyelitis	1984	27.8
—measles	1984	34.7
—tuberculosis	1984	62.7
Percentage of population served with potable water	1983	49.0
Percentage of population served by sanitary waste disposal	1983	36.0
Consultations per inhabitant per year	1982	60.0
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1982	1.7
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	8.1
Nurses per 10,000 inhabitants	1982	6.4
Nursing auxiliaries per 10,000 inhabitants	1979	4.4
Health Expenditure		
Health Expenditure per capita (in US$)	1982	15
Total health expenditure as a percentage of the GDP	1983	4.5
Percentage of the National Budget dedicated to health	1983	4.1

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.511 Within the operational plan of the sector for 1984-1985, the objectives of the extension of health services coverage project for the Eastern Region were attained, as were the goals for the establishment of a national hospital architecture and maintenance system and those of the relevant national training plan. To support the linkage of the sector's resources, a proposal was drawn up for cooperation between the Ministry of Health and the Peruvian Social Security Institute in the improvement of physical infrastructure and development of programs. The nursing component of the basic health services was strengthened through the training of personnel and the upgrading of community and hospital nursing standards.

8.512 In the priority area of human resource development, the training of primary level health personnel stands out, despite the fact that only 60% of the objectives were reached. A multidisciplinary short- and medium-term plan developed during the year on the basis of an evaluation of the School of Public Health provided for continuing education of staff of the Ministry of Health. An eval-

uation of the educational technology being utilized by institutional and community personnel yielded highly useful results, including new teaching approaches and techniques and the preparation of self-instruction modules for Ministry staff. A related development in this area was the strengthening of the National Educational Technology in Health Center (CENTES), which is now related to San Marcos University, the Ministry of Health and PAHO/WHO. A plan was drawn up with the aim of organizing a national network of health science libraries. An academic program in health administration, covering both the Master's and residency levels, was established under the Regional Program on Advanced Training in Health Administration (PROASA).

8.513 In the area of environmental health, a highlight was the formulation, in connection with the International Drinking Water Supply and Sanitation Decade, of a national basic sanitation plan setting priorities and providing for coordinated use of national and external resources. The progressive implementation of the national water quality control program in three regions of the country was a highly important development in this field. Water pollution studies also were carried out, and mechanisms were developed for monitoring the quality of water in the rivers and along the coast.

Health promotion and disease control

8.514 Of importance in the food and nutrition area was the development of a joint nutrition support program, whose activities in nutrition and in maternal and child health were integrated with those of other development sectors involving community participation. Endemic goiter and cretinism control, a major component of this program, was strengthened with the establishment of a goiter control unit and an evaluation and reformulation of the program.

8.515 The maternal and child health and family planning program, which failed to yield the expected results, was analyzed and new proposals were submitted to UNFPA for 1985. The plan of operations for the Socabaya-Arequipa maternal and child health and perinatology program began to be implemented. Vaccination coverages under the Expanded Program on Immunization (EPI) were very low and did not result in any reduction in the incidence of the target diseases, leading to an evaluation of the program and a proposal for new solutions for 1985.

8.516 As an outcome of the assessment of the malaria situation (late 1983), the program was reactivated at two levels: emergency actions and long-term activities. Malaria has nonetheless continued to spread to new areas, including some that had been free of transmission for 20 years.

8.517 Highlights in veterinary public health—one of the areas of greatest activity—included advances in urban and suburban rabies control, food inspection, foot-and-mouth disease vaccination, and the Iquitos primate reproduction station.

Mobilization of Technical and Financial Resources

8.518 **Technical Cooperation Among Developing Countries (TCDC)**: In an effort to provide systematic encouragement in this field, initial contacts were made with the embassies of countries in a position to participate in this type of cooperation, including Brazil, Colombia, Cuba, Mexico, and Venezuela. Brazil expressed interest in taking action through UNFPA.

8.519 **International cooperation**: *UNICEF* provided US$415,000 for extension and development of health services and US$2,167,000 for comprehensive child and family care (in operation, initiated in 1983); *UNDP*, US$922,000 for development and

extension of the coverage of health services in the Eastern Region, US$450,000 for the development of the physical infrastructure of health services, US$750,000 for development of a biotechnology research and development center (1983-1986), US$56,854 for a drug abuse monitoring program (in operation, initiated in 1984), US$4.2 million for maternal and child care and family planning, and US$73,280 for the Amazon hospital—Pucallpa (in operation, initiated in 1980); *IDB*, US$23 million for projects under way in the following fields: development of technology for water and sewage systems, water quality control, wastewater recycling, training for the primary care level, and training in animal health; *IBRD*, US$33.5 million for primary care and basic health services (in operation and initiated prior to 1984); and *WFP*, US$900,000 for nutritional assistance to mothers and children (in operation, initiated in 1982).

8.520 **Bilateral cooperation**: *USAID* provided US$30 million for programs in operation initiated prior to 1984: water quality control laboratories, design standards for water and sewerage systems, and an immunization program; and US$1.2 million to carry out a study of the health sector. The *Government of Czechoslovakia*, US$207,920 for generator sets and dental and oral health equipment; *Government of Denmark*, US$381,444 for primary care at Pucallpa (in operation, initiated in 1979); *Government of France*, US$5.3 million for hospital equipment—Iquitos and Juliaca; *Federal Republic of Germany* donated approximately US$24 million for projects in operation initiated prior to 1984 in the areas of: strengthening of the hospital system, primary care and health services, laboratory services, nutrition, and environmental health; *Government of Hungary*, US$612,669 for supplies; *Government of Italy*, US$42,522 for extension of rural medical care; *Government of Japan*, US$2.05 million for malaria control (in operation, initiated in 1981); *IICA*, US$769,230 for physical infrastructure (in operation, initiated in 1980); *Government of Norway*, US$34.7 million for extension of medical care in rural areas—Puno (in operation, initiated in 1981); *Government of the Netherlands*, US$6.7 million for a rural hospital network and US$4.2 million for support for health sectors; *Government of Sweden*, US$106,400 for integrated health care (in operation, initiated in 1980); and *Switzerland's Swiss Technical Cooperation*, US$609,278 for extension of rural medical care.

8.521 **Foundations**: the *Amazon Foundation* donated US$192,830 for development of health services in Apurímac River Valley; *W. K. Kellogg Foundation*, US$149,775 for development of the maternal and child health program in the Hunter-Socabaya area (1984-1985); and *Save the Children Fund*, US$19,220 for development and extension of health services (Tambo and Ene River area) (in operation, initiated in 1982).

Cooperation Provided by PAHO/WHO

8.522 **Professional staff assigned to the country**: 5, including the PAHO/WHO Country Representative and advisers, in: health administration, nursing, comprehensive medical care, and environmental health.

8.523 **Regional and intercountry advisers**: 33, for a total of 268 days, in the following fields: health services and primary care, information systems, nursing, medical records, laboratories, environmental health, maternal and child health, food and nutrition, immunization, epidemiology, dentistry, tropical medicine, cancer, plague, veterinary medicine, public health, and primate stations.

8.524 **Short-term consultants (STC)**: 49, for a total of 658 days, in the following fields: planning and organization of services, hospital architecture, human resources, environmental health, maternal and child health and the nutritional risk approach, mental health, occupational health, production of

drugs, immunization, meningitis, leishmaniasis, Chagas' disease, plague, and tropical diseases.

8.525 **Fellowships**: 98, for a total of 167 months and at a cost of US$270,205, in the following areas of study: human resources, maternal and child health, administration and organization of services, environmental health, malaria and vector control, immunization, drug control, nutrition, dentistry, tuberculosis, veterinary health, tropical medicine, pharmacology, serology, and social communication.

8.526 **Courses, seminars, and workshops**: 46, with a participation of 1,872 national officials and at a cost of US$72,829, in the following fields: Master's of Public Health, health administration, training of promoters, training of health service staff, training in the first level of care, maintenance of health facilities, dentistry, immunization, maternal and child health, supervision, and emergency and disaster preparedness.

8.527 **Grants**: PAHO/WHO awarded US$139,700 in grants for the following: evaluation of the School of Public Health (US$30,000); primary care study and project (US$17,000); Cayetano Heredia University (US$10,000); San Marcos University (US$10,000); training of researchers (US$13,500); drug research and policies (Hipólito Unanue Agreement, US$40,000); cancer research (US$2,000); study of respiratory problems in children (US$14,700); and medical education (US$2,500).

General Appraisal and Future Trends

8.528 Peru experienced the same effects of the economic crisis as the other Latin American countries. These were compounded by a number of political and social factors peculiar to Peru. As a result, the health sector was faced with serious constraints in real financial resource availability and, consequently, serious limitations on the operating capacity of health services and on human resource productivity. The situation also affected the Organization's technical cooperation activities, as the funding provided for priority Government action areas was only partially used. The imminence of elections for a new Government suggests a need to adjust cooperative actions to new health policies and plans, with a view to focusing currently scattered efforts on critical areas and designing innovative approaches and procedures.

St. Christopher and Nevis

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1982	44,700
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1981	25.6
Mortality rate/1,000 inhabitants	1981	10.6
State of Health Indicators		
Life expectancy at birth	1981	65.0
Infant mortality/1,000 live births	1981	46.0
Maternal deaths/1,000 live births	1983	2.3
Death rate 1-4 years/1,000 children	1980	2.5
Percentage of newborn with a weight of less than 2,500 grams	1983	9.4
Availability of calories per capita/day	1979-81	2,038
Availability of proteins (grams) per capita/day	1979-81	52.8
Percentage of deaths due to:		
infectious and parasitic diseases	1982	6.2
tumors	1983	11.1
heart diseases	1983	17.0
motor vehicle traffic accidents	1982	0.2

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	89.5
—poliomyelitis	1983	93.0
—measles	...	...
—tuberculosis	1983	69.0
Percentage of population served with potable water	1983	75.0
Percentage of population served by sanitary waste disposal	1985	96.0
Consultations per inhabitant per year	1977	106.0
Number of discharges per 100 inhabitants	1980	12.2
Number of beds per 1,000 inhabitants	1981	5.6
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	5.8
Nurses per 10,000 inhabitants	1981	56.7
Nursing auxiliaries per 10,000 inhabitants	1981	0.9
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	1984	12.3

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.529 An assessment of PAHO/WHO's technical cooperation with the newest Member Country of the Organization was made in November 1984. The Government is implementing a national development plan, and PAHO/WHO has supported the follow-up of the health planning process and the identification of technical inputs needed. Orientation to Caribbean standards of nursing care was provided for senior nursing personnel.

8.530 In environmental health, emphasis was placed on integrating the primary health care strategy into the day-to-day operations of the national program, and the first steps were taken towards drafting an environmental health field operations manual. A 5-day seminar on operational definitions of primary health care strategies in environmental health programs and a 3-day workshop on emergency operations planning for water supply and environmental health personnel were developed as part of this scheme. In the light of recent hotel and tourism developments, the Government is becoming increasingly concerned with liquid and solid waste disposal.

8.531 The Organization supported the re-

porting of histopathology and cytology specimens and the provision of training for laboratory technologists in the testing of hepatitis and in laboratory management.

Health promotion and disease control

8.532 Family planning and family life education, which are integrated into maternal and child health services, are priority programs within the national health policy and in the overall development plan of the country. In strengthening health and family life education and family planning within primary health care (PHC), activities have included the planning of a health education unit, integration of health and family life education into the Teachers' Training College, and establishment of adolescent health and family planning centers in Sandy Point and Cayon.

8.533 Efforts have been made to improve the status of maternal and child health by presenting findings of the perinatal risk study and planning for training of health personnel in perinatal care. The implementation and follow-up of the oral rehydration program has improved the management of gastroenteritis in children. However, there have been delays in the strengthening of nursing midwifery services through the revision of the maternal and child health manual and the updating of the nursing midwifery curriculum. Three family nurse practitioners (FNP) have been trained and are working in PHC settings. Laws and legislation are being revised to incorporate the roles and functions of the FNP.

8.534 Surveillance and control of communicable diseases continues to have a high national priority. St. Christopher and Nevis received collaboration from the Expanded Program on Immunization (EPI), and CAREC continued to develop and strengthen its laboratory diagnostic capability. Progress is also being made in developing the leprosy control program. The country also received assistance from the Pan Caribbean Disaster Preparedness and Prevention Project health team located in Antigua.

Mobilization of Technical and Financial Resources

8.535 **International cooperation**: *UNFPA* provided US$8,420 for a program on maternal and child health and family planning.

Cooperation Provided by PAHO/WHO

8.536 **Professional staff assigned to the country**: Cooperation comes from the Organization's staff located in various parts of the Caribbean, as well as from Headquarters, CAREC, and CFNI. Additionally, a team of consultants from the Caribbean Program Coordinator's (CPC) Office collaborated with Government efforts in health systems development, manpower, health statistics, disaster preparedness, disease control, environmental health, nutrition, maternal and child health, veterinary public health, zoonoses, and vector control.

8.537 **Fellowships**: 3 fellowships were awarded in vector control, hepatitis, and alcoholism, and training was provided for 4 nationals in laboratory management (Saint Lucia), ward management (Barbados), radiography (Jamaica), and meat-foods inspection (Jamaica), utilizing the European Economic Community-Caribbean Community Secretariat funds.

General Appraisal and Future Trends

8.538 The Government has agreed to conduct a thorough analysis of the health situation early in 1985 with the support of the Organization. PAHO/WHO will provide assis-

tance when priority areas have been identified and will work consistently in those areas. Further assistance will be provided to fertility programs directed at adolescents in and out of school, to strengthening maternal and child health services to decrease infant morbidity and mortality, and to training health personnel in specific areas of concern in maternal and child health.

8.539 Despite the limited resources available, assistance in environmental health has been stepped up, and a review of the national program is expected to assist the Government in strengthening this component of primary health care. A national workshop in solid waste management is anticipated.

Saint Lucia

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	126,400
Percentage of urban population (as nationally defined)	1980	40.0
Birth rate/1,000 inhabitants	1983	31.0
Mortality rate/1,000 inhabitants	1983	6.3
State of Health Indicators		
Life expectancy at birth	1985	70.0
Infant mortality/1,000 live births	1983	27.0
Maternal deaths/1,000 live births	1983	0.25
Death rate 1-4 years/1,000 children	1983	7.2
Percentage of newborn with a weight of less than 2,500 grams	1985	9.7
Availability of calories per capita/day	1979-81	2,390
Availability of proteins (grams) per capita/day	1979-81	64.3
Percentage of deaths due to:		
infectious and parasitic diseases	1979	10.0
tumors	1979	12.0
heart diseases	1978	19.0
motor vehicle traffic accidents	1978	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1981	63.6
—poliomyelitis	1981	65.3
—measles	...	...
—tuberculosis	...	...
Percentage of population served with potable water	1985	100.0
Percentage of population served by sanitary waste disposal	1985	100.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	1979	2.8
Number of beds per 1,000 inhabitants	1979	4.4
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	4.0
Nurses per 10,000 inhabitants	1980	22.7
Nursing auxiliaries per 10,000 inhabitants	1980	9.3
Health Expenditure		
Health Expenditure per capita (in US$)	1978	29
Total health expenditure as a percentage of the GDP	1981	4.0
Percentage of the National Budget dedicated to health	1985	13.6

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.540 Assistance was received in the development of a planning unit in the Ministry of Health and in strengthening the planning approach to delivery of health services. Also important has been the study for strengthening the physical infrastructure; the results are now being implemented.

8.541 A critical review of health personnel data collected during 1983 was done, and preparation is under way for a national workshop to be held during 1985 on organizational support and management issues in health personnel, as a basis to policy formulation. A workshop on standards of nursing care for senior nursing personnel was carried out. The country was the site for two important environmental health workshops, one on water quality control and emergency operations planning for water supply, and the other on environmental health personnel. Discussions commenced on continuing education in pri-

mary health care for environmental health officers. The national environmental health programs continued without major change to surveillance activities.

8.542 Assistance was provided in the coordination of all laboratory services and related activities, the reporting of histopathology specimens, a training exercise in testing for hepatitis, and the hosting of a 2-week workshop in laboratory management.

Health promotion and disease control

8.543 Progress has been principally in the integration of related services. The most notable examples are the integration of family planning into maternal and child health and family life education into the school system. Local training to match these objectives is being actively pursued with the help of external agencies. However, inadequacies in the present physical facilities impose limitations on the efficacy of both the primary and secondary levels of perinatal health care. The family program is progressing along with the integration of family life education into the Teachers College curriculum. A revised maternal and child health manual is now in operation.

8.544 Surveillance and control of communicable diseases continue to be a high national priority. Saint Lucia participates in the Expanded Program on Immunization and, with the Caribbean Epidemiology Center (CAREC) assistance, is developing and strengthening its surveillance and laboratory capabilities.

Mobilization of Technical and Financial Resources

8.545 **International cooperation**: *UNFPA* provided US$101,600 for maternal and child health and family planning.

8.546 **Foundations**: The *Kellogg Foundation* provided US$789,000 for primary health care development (1985-1989).

Cooperation Provided by PAHO/WHO

8.547 **Professional staff assigned to the country**: 2, in health planning and management. Additional cooperation comes through the Organization's staff located in various parts of the Caribbean, as well as from Headquarters, CAREC, CFNI, and other PAHO/WHO Centers. A team from the PAHO/WHO Caribbean Program Coordination Office collaborated closely with Government efforts in health systems development, personnel, disaster preparedness, disease control, maternal and child health, environmental health, nutrition, and veterinary public health.

8.548 **Fellowships**: 6, in: community health, alcoholism, hepatitis, and obstetrics. PAHO/WHO funding was US$21,030. Training also was provided for five nationals in community nutrition (Barbados) and in meat and other foods inspection (Jamaica), utilizing European Economic Community and Caribbean Community Secretariat funding.

General Appraisal and Future Trends

8.549 Political commitment to primary health care, the national authorities' enthusiasm, and dedication of the national technical staff constitute favorable factors in delivering technical cooperation.

8.550 Since the Government is turning its attention to the implementation of the national health plan, the Organization shall assist with program review and execution at all levels. Further health personnel development to

increase their operational capacity is proposed. A need continues for the services of a pathologist and for assistance in the development of the laboratory services. Steps should be taken to accelerate the strengthening of the Bureau of Health Education (within the UNFPA project). The various maternal and child health and family life education-related projects need to be coordinated even more closely in the future.

8.551 A situation analysis, to be carried out as a first step in the managerial process, was discussed with and approved by the national authorities. The study will be conducted in 1985, with PAHO/WHO's support.

St. Vincent and the Grenadines

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1982	127,800
Percentage of urban population (as nationally defined)	1980	27.0
Birth rate/1,000 inhabitants	1982	26.2
Mortality rate/1,000 inhabitants	1982	5.8
State of Health Indicators		
Life expectancy at birth	1980	68.5
Infant mortality/1,000 live births	1982	40.6
Maternal deaths/1,000 live births	1980	1.3
Death rate 1-4 years/1,000 children	1980	3.7
Percentage of newborn with a weight of less than 2,500 grams	1982	10.0
Availability of calories per capita/day	1979-81	2,234
Availability of proteins (grams) per capita/day	1979-81	50.7
Percentage of deaths due to:		
infectious and parasitic diseases	1980	1.8
tumors	1982	7.4
heart diseases	1982	19.5
motor vehicle traffic accidents	1982	—

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	82.0
—poliomyelitis	1983	85.0
—measles	1983	52.0
—tuberculosis	...	...
Percentage of population served with potable water	1981	75.0
Percentage of population served by sanitary waste disposal	1981	88.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1980	2.4
Human Resource Indicators		
Physicians per 10,000 inhabitants	1980	2.9
Nurses per 10,000 inhabitants	1980	10.4
Nursing auxiliaries per 10,000 inhabitants	1980	9.7
Health Expenditure		
Health Expenditure per capita (in US$)	1981	10
Total health expenditure as a percentage of the GDP	1979	5.3
Percentage of the National Budget dedicated to health	1982	14.2

... Data not available.
— None.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.552 As part of the development of the national health plan, workshops were held on primary health care surveillance and on the strengthening of health districts. Also important were the implementation and the follow-up of nursing care standards in hospital and community services and of the guidelines on developing a patient classification system and staffing pattern for Kingstown General Hospital.

8.553 In human resources, a critical review of health personnel data collected during 1983 was done, and preparation is under way for a national workshop to be held during 1985 on organizational support and management issues in health personnel, as an introduction to policy formulation.

8.554 Environmental health does not appear to enjoy a high priority in the national health program, and surveillance activities continued routinely without any major new development.

Health promotion and disease control

8.555 A review of nutritional surveillance in St. Vincent, its information system, and baseline data on children and pregnant women was prepared with the CFNI assistance and as part of the PAHO/WHO-UNICEF Joint Nutrition Support Program. An altogether satisfactory level of progress in maternal and child health has been maintained in St. Vincent and the Grenadines.

8.556 Conditions for technical cooperation are now more favorable with the return from professional courses of a senior health educator, two family nurse practitioners, and a community nutrition officer. In addition, there is significant potential for more effective planning and implementation of maternal and child health and primary health care activities now that vacant positions in the district and hospital services have been filled and training has been established in family planning and family life education and related subjects through continuing education programs.

8.557 Other related activities were: the follow-up of postnatal services, the overall administrative and technical operations for the UNFPA project, the presentation of perinatal survey results, the development of a national medical policy on contraception, and the provision of two fellowships in audiovisual techniques and three fellowships for observational study in family life education.

8.558 The country continues to develop and strengthen its surveillance and laboratory diagnostic capability; these efforts were supported by CAREC. Animal health and veterinary public health activities progressed satisfactorily.

Mobilization of Technical and Financial Resources

8.559 **International cooperation:** *UNFPA* gave US$54,200 for family planning and family life education.

Cooperation Provided by PAHO/WHO

8.560 **Professional staff assigned to the country**: Although no full-time professional staff are assigned to St. Vincent and the Grenadines, considerable cooperation came from the Organization's staff located in various parts of the Caribbean, as well as from Headquarters and the PAHO/WHO Centers. A team of consultants from the PAHO/WHO Caribbean Program Coordinator's Office collaborated with Government efforts in health systems development, personnel, disaster preparedness, disease control, environmental health, zoonoses, and vector control.

8.561 **Fellowships**: 10, in: rainwater systems, hepatitis, community nutrition, audiovisual techniques, and family life education. Additionally, training was provided for 9 nationals in laboratory management (Saint Lucia), ward management (Barbados), community health nursing (Bahamas), pharmacy (Barbados), medical laboratory technology (Barbados), and rodent control (Barbados), utilizing European Economic Community-Caribbean Community funding. PAHO/WHO cooperation for fellowships was US$7,630.

General Appraisal and Future Trends

8.562 The installation of a new Government in July provided some freshness to the overall process of health development. The new Government is fully committed to primary health care, and PAHO/WHO cooperation is anticipated to continue. The full complement of family nurse practitioners should be thoughtfully deployed in the development and expansion of primary health care. A new UNFPA-funded project proposal should be

prepared for strenghthening the family planning and family life education components of maternal and child health. St. Vincent should benefit from the subregional program in perinatal care, planned to be developed in collaboration with CLAP in 1985.

8.563 The modest environmental health program likely will pay increased attention to personnel development through continuing education programs and PAHO/WHO technical cooperation.

Suriname

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1982	362,000
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1982	30.8
Mortality rate/1,000 inhabitants	1982	6.9
State of Health Indicators		
Life expectancy at birth	1981	66.6
Infant mortality/1,000 live births	1982	27.0
Maternal deaths/1,000 live births	1981	0.8
Death rate 1-4 years/1,000 children	1980	2.1
Percentage of newborn with a weight of less than 2,500 grams	1980	13.0
Availability of calories per capita/day	1979-81	2,529
Availability of proteins (grams) per capita/day	1979-81	62.2
Percentage of deaths due to:		
infectious and parasitic diseases	1981	7.1
tumors	1981	8.9
heart diseases	...	...
motor vehicle traffic accidents	...	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	85.0
—poliomyelitis	1983	85.0
—measles	1983	55.0
—tuberculosis	...	...
Percentage of population served with potable water	1983	95.0
Percentage of population served by sanitary waste disposal	1983	80.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	...	...
Number of beds per 1,000 inhabitants	1982	5.8
Human Resource Indicators		
Physicians per 10,000 inhabitants	1984	8.4
Nurses per 10,000 inhabitants	1984	20.8
Nursing auxiliaries per 10,000 inhabitants	1984	16.7
Health Expenditure		
Health Expenditure per capita (in US$)	1983	54
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	1983	5.0

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.564 The primary health services were reviewed by the Regional Health Service (responsible for the coastal area—90% of population) and the Medical Mission (responsible for the interior of the country); a new health policy document for 1985-1990 was prepared; nursing standards were implemented (developed for the Caribbean in 1983); and a working group to develop national health information systems was organized in mid-1984. Its first priority is to develop information systems for primary health care.

8.565 In human resources, the strategy continued to strengthen national health personnel training institutions while facilitating the access of health personnel to higher technical and professional training and continuing education. Two key public health staff are presently obtaining their Master of Public Health degrees—in epidemiology and maternal and child health, respectively; this will greatly enhance the existing staff and the Ministry of Public Health infrastructure.

8.566 A new Environmental Health Divi-

sion is being established. This process will be accelerated with the posting of a PAHO/ WHO sanitary engineer in the country late in 1984. The Public Health Inspectorate was strengthened through a 5-month training course in environmental health. A new team of food inspectors also participated in this course.

Health promotion and disease control

8.567 A nutrition survey, which also covered diarrheal diseases, was conducted in the coastal area. The data were being analyzed at the Caribbean Food and Nutrition Institute (CFNI). A public health nurse was trained at a community nutrition course (CFNI) to introduce and supervise nutrition activities at the primary health care level.

8.568 The training program for the youth dental program continued to train dental auxiliaries. PAHO/WHO provided equipment that contributed to the improvement of outreach services for this expanding program. A first assessment of needs and priorities was conducted in the field of workers' health, in which no activities presently are deployed other than accident prevention. At year's end, negotiations were under way for PAHO/ WHO and UNICEF to assist in the procurement of a large part of the essential drugs on the national formulary.

8.569 In the third year since its review and reorientation, the national immunization program now fully immunizes more than 90% of children by age 1, in all regions in the country. After thorough evaluation and planning, the diarrheal disease control program was launched in mid-June with a series of workshops for all levels of health personnel. Oral rehydration is now available nation-wide through the primary health care services. A longitudinal study on the epidemiology of etiological agents in diarrheal diseases was started in an underprivileged area close to the capital.

8.570 Epidemiological surveillance has been strengthened and epidemiological analysis is now being applied to programs for the control of major diseases as well as to health services delivery and utilization. The Suriname epidemiological bulletin is an important means for distribution of information. CAREC continues to be the main referral laboratory for diagnostic and epidemic services, mainly in virology; it also organizes training courses and on-the-bench assistance in this field, as well as in epidemiology.

8.571 The integration of malaria control and eradication into primary health care through the Medical Mission was evaluated. The review commented very positively on the transfer and drew attention to the excellent network of services provided by the Medical Mission. Border meetings between Suriname and French Guiana in October-November discussed possible control measures and agreed on a common strategy regarding the deteriorating malaria situation along the Marowijne River border. An emergency campaign to reduce the estimated 40% infestation with *Aedes aegypti* in Paramaribo prevented the introduction of dengue outbreaks reported in other countries of the Caribbean.

8.572 In 1984, there was the first follow-up to the WHO Special Program for Research and Training in Tropical Diseases (TDR) workshop in the epidemiology of schistosomiasis held in 1983. Results are being analyzed. Following the evaluation of sexually transmitted diseases, treatment at the primary level is being standardized and laboratory support for diagnosis is being improved.

8.573 While Suriname is not extremely disaster-prone, the possibility of man-made disaster (e.g., air crash, industrial accidents) prompted a review of preparedness in the hospital sector. The hospital board is presently reviewing the results of this assessment.

Mobilization of Technical and Financial Resources

8.574 **International cooperation**: In 1984, *IDB* opened an office in Suriname to facilitate project preparation and monitoring. Two health-related projects are being prepared: construction-renovation of a hospital in the Regional Health Services of Nickerie, and water and sewage supply in Paramaribo.

8.575 **Bilateral cooperation**: Since the abrupt termination of Dutch development aid, several projects in development of the health service infrastructure have been curtailed severely. Projects funded by the European Economic Community (EEC) to consolidate infrastructure in the interior have continued.

Cooperation Provided by PAHO/WHO

8.576 **Professional staff assigned to the country**: 2, the PAHO/WHO Country Representative (who also advises in epidemiology) and a sanitary engineer assigned to the country in December 1984.

8.577 **Regional and intercountry advisers**: 12, for a total of 110 days, in: health information systems development, nutrition, epidemiology, occupational health, nutrition survey procedures, malaria, vector control, virology training, REPAHA review, food establishment inspection, health education, and regional health service.

8.578 **Short-term consultants (STC)**: 14, for a total of 290 days, in: environmental health, training, nursing services, epidemiology, radiation safety, malaria, brucellosis, sexually transmitted diseases, schistosomiasis, and epidemiology research.

8.579 **Fellowships**: 16, in: health planning, primary health care in nursing, nursing services management, hospital nursing services, community nutrition, immunology techniques, orthopedic shoe making, comprehensive vector control, environmental health, methods in special medical bacteriology, epidemiology, skin pathology, bacteriology of tuberculosis, water purification, public health, and epidemiology. PAHO/WHO's funding was US$57,400.

8.580 In addition, 23 nationals participated, with PAHO/WHO support, in 14 courses carried out in the Caribbean area and in the Region.

8.581 **Courses, seminars, and workshops**: 4, with 200 participants in diarrheal diseases. PAHO/WHO's funding was US$5,000.

8.582 **Grants**: 4, for dental equipment for the Youth Dental Foundation (US$30,000); drugs—malaria chemoprophylaxis and test kits (US$8,751); administration of EPI program and cold chain equipment (US$2,680); and oral rehydration salts (ORS) (US$5,294).

General Appraisal and Future Trends

8.583 The political and socioeconomic situation remained difficult in 1984 with consequent repercussions on national programs and activities and on PAHO/WHO technical cooperation. Still a number of major developments were noted, including the emphasis placed on the development of a health policy and plan for 1985-1990 and of adequate health information systems. Cooperation with disease control programs remained strong. Family health programs received a concentration of technical cooperation with excellent results in strengthening of the national capacity. More involvement was noted in the delivery of health services based on primary health care, and the 1985 program will be based on this concept.

8.584 Several activities were noted in environmental health, while the further development of technical cooperation awaited the full-time assignment of a sanitary engineer to the country.

8.585 Cooperation for 1985 will focus on the areas of health policy, disease control, family health and health services, as well as on the development of planning and information systems in support of these areas.

Trinidad and Tobago

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1983	1,149,000
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	1980	26.4
Mortality rate/1,000 inhabitants	1980	7.0
State of Health Indicators		
Life expectancy at birth	1980	68.9
Infant mortality/1,000 live births	1980	19.7
Maternal deaths/1,000 live births	1978	0.9
Death rate 1-4 years/1,000 children	1978	1.3
Percentage of newborn with a weight of less than 2,500 grams	...	...
Availability of calories per capita/day	1979-81	2,837
Availability of proteins (grams) per capita/day	1979-81	75.5
Percentage of deaths due to:		
infectious and parasitic diseases	1978	4.7
tumors	1978	10.6
heart diseases	1978	25.5
motor vehicle traffic accidents	...	...

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	60.0
—poliomyelitis	1983	61.0
—measles	1983	60.0
—tuberculosis	...	...
Percentage of population served with potable water	1984	95.0
Percentage of population served by sanitary waste disposal	1984	100.0
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	1980	12.1
Number of beds per 1,000 inhabitants	1980	4.1
Human Resource Indicators		
Physicians per 10,000 inhabitants	1983	10.5
Nurses per 10,000 inhabitants	1983	28.3
Nursing auxiliaries per 10,000 inhabitants	...	...
Health Expenditure		
Health Expenditure per capita (in US$)	1983	245
Total health expenditure as a percentage of the GDP	1980	1.6
Percentage of the National Budget dedicated to health	...	...

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.586 The increasing need to reemphasize the crucial importance of health planning has been recognized not only by the Ministry of Health and Environment but also by the other Government departments and in particular by the Ministry of Finance and Planning. In the draft development plan prepared by a national task force, health planning had been interwoven into the general plan; now the highest levels of Government accept that social sector ministries, such as health, have an important role in the overall planning process. The state of the national economy has made it even more important to institutionalize planning in order to use limited resources effectively. During 1984, the Ministry made a determined effort to sensitize senior managers to the planning process and completed the initial spade work necessary to develop a national health plan.

8.587 Because of these commitments, the Ministry of Health and Environment has found it necessary to review and reorganize its organizational structure and to streamline and strengthen systems. The Ministry is now institutionalizing planning and management in the

records, finance, transport, and supply systems.

8.588 However, unless administration and decision-making are decentralized, there will be no noticeable improvement in management functions, efficiency, and effectiveness, regardless of the structures created. Operational guidelines for financial managers are being developed. This work entails reviewing all existing financial regulations, instructions, and circulars and compiling this information into a single document for the use of county health officers, administrators, and accounting personnel. Such actions will strengthen primary health care services based on the concept of a county health team headed by the county medical officer of health. In this approach, county health teams have greater responsibility for planning programs and more authority for making decisions locally.

8.589 The commitment to the health planning process requires the support of an efficient and reliable information system. In this regard, the Ministry of Health and Environment requested assistance in the introduction of modern technology to strengthen the information system. It is important to stress that an outline of the national plan of action for the years 1985-2000 was prepared, consisting of broad program areas with suggested priority activities.

8.590 In human resources, outstanding activities included: the continuous process of teaching basic principles of health planning and the methodology to be used for national health development in Trinidad and Tobago; the preparation and completion of the curriculum for medical laboratory technicians to be used at the College of Allied Health Sciences; and CAREC collaboration with the University of the West Indies (UWI) in the training of medical students. An important innovation in 1984 was the attachment of medical graduates of UWI to the health centers as part of the second year of their internship program. This compulsory attachment was for a period of 3 months, but many found this orientation to community health so interesting that they extended the duration to 6 months.

8.591 An orientation seminar on health planning for national health development was carried out. This seminar was attended by over 50 senior Government executives and officials from the Ministry of Health and Environment and other ministries whose duties have a direct impact upon the health of the population. Primary health care workshops held in six counties were an unqualified success. Two counties are yet to host these workshops—Caroni and Tobago.

8.592 Preparations are being made toward a national consultation on environmental health which will bring together the policy and decision makers of the various ministries, Government agencies, and interested public bodies involved in the management, monitoring, control, and use of the environment. The overall objective of the consultation is to formulate a national policy and a plan of action to develop and strengthen programs for the management of the environment.

8.593 The objectives of two projects funded by UNDP and IDB were: strengthening the training unit at the Water and Sewerage Authority (WASA) and improving certain technical areas at the Authority, respectively. The first project achieved its objective in the main, but there was need for a comprehensive approach to the Authority's personnel needs. The second project was less successful, and the objectives of achieving significant improvements in pollution control, water distribution, and the maintenance of sewage treatment plants were not attained. UNDP funded a new project to improve the Authority's organizational and functional performance. A long-term training program in public health engineering for public health inspectors and preliminary preparations for a suitable training program to correct deficiencies in supervisory skills and knowledge are under way. Assistance has also been provided to public health inspectors for improving their information systems.

Health promotion and disease control

8.594 At county level, training in family life education and family planning was strengthened, as well as in infant feeding with emphasis on breastfeeding. Workshops also were developed on maintenance of the cold chain in the Expanded Program on Immunization. Oral rehydration therapy now is practiced at all health centers. Preliminary evaluation has suggested that its use in hospitals has reduced infant deaths due to gastroenteritis.

8.595 During the year, the Ministry of Health and Environment decided to seek a complete appraisal of the progress made in its community mental health program with a view toward improving the program's efficiency and maximizing the use of resources. The extent of drug use and abuse in Trinidad and Tobago has galvanized the Ministry and the Government into action. It is generally agreed that alcohol is the major problem, but marijuana and cocaine are often used. A survey conducted at Port-of-Spain General Hospital in Trinidad revealed that 47% of admissions resulted from the use of alcohol. The program of providing special attention to chronic diseases (diabetes mellitus and hypertension) at selected health centers continued.

8.596 The *Aedes aegypti* eradication campaign continued throughout 1984 and recorded steady progress. Routine operations continued in Trinidad while a special campaign was mounted in Tobago to contain and eradicate foci of reinfectations discovered during the second quarter of the year.

Mobilization of Technical and Financial Resources

8.597 **Bilateral cooperation**: *USAID* assisted in a health development planning and management project (technical cooperation), and the *EEC* gave US$965,000 for a training program in the health sector (3 years).

Cooperation Provided by PAHO/WHO

8.598 **Professional staff assigned to the country**: 4, the PAHO/WHO Country Representative and advisers in: health services development, institutional management, and *Aedes aegypti* eradication.

8.599 **Fellowships**: 15, for a total of 43 months, in: public health administration, personnel management, community nutrition, tuberculosis bacteriology, and water and sewage systems. PAHO/WHO's estimated cost was US$108,770.

8.600 **Grants**: PAHO/WHO provided US$20,000 for CAREC reconstruction and US$5,000 for laboratory equipment.

General Appraisal and Future Trends

8.601 The Government continued to emphasize the importance of health planning in order to promote optimum use of the country's available resources. This emphasis was translated into the formulation of the national health plan. The health plan demonstrates a commitment to implementing the primary health care approach, including decentralization of administrative responsibility, encouragement of community participation, and provision of comprehensive services at health centers. The Government also is mindful of the important role of women in health and development and the priority health care needs of the elderly.

8.602 During the year, meetings were held with the technical cooperation division of the Ministry of Finance and Planning, the Ministry of Health and Environment, and PAHO/WHO. These meetings are a valuable mechanism for planning future cooperation, monitoring programs, discussing problems, solving difficulties, and obtaining expeditious governmental approval.

United States of America

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1984	236,158,000
Percentage of urban population (as nationally defined)	...	...
Birth rate/1,000 inhabitants	...	...
Mortality rate/1,000 inhabitants	...	...
State of Health Indicators		
Life expectancy at birth	1982	74.6
Infant mortality/1,000 live births	1982	11.5
Maternal deaths/1,000 live births	1982	0.9
Death rate 1-4 years/1,000 children	1982	0.6
Percentage of newborn with a weight of less than 2,500 grams	1982	6.8
Availability of calories per capita/day	1979-81	3,641
Availability of proteins (grams) per capita/day	1979-81	105.6
Percentage of deaths due to:		
infectious and parasitic diseases	1982	1.0
tumors	1982	22.3
heart diseases	1982	38.3
motor vehicle traffic accidents	1982	2.3

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	37.4
—poliomyelitis	1983	24.0
—measles	1983	7.1
—tuberculosis	1984	[a]
Percentage of population served with potable water	1984	[b]
Percentage of population served by sanitary waste disposal	1980	98.2
Consultations per inhabitant per year	...	...
Number of discharges per 100 inhabitants	1983	16.7
Number of beds per 1,000 inhabitants	1982	5.7
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	19.0
Nurses per 10,000 inhabitants	1982	59.0
Nursing auxiliaries per 10,000 inhabitants	1983	33.0
Health Expenditure		
Health Expenditure per capita (in US$)	1983	1,459
Total health expenditure as a percentage of the GDP	1983	10.9
Percentage of the National Budget dedicated to health	1983	29.7

... Data not available.
[a] Almost none. [b] Almost the entire population.

Analysis of the Steps Taken in 1984 to Implement Regional Strategies

Development of the health service infrastructure

8.603 Considering that many of the major health problems confronting Americans today are rooted in lifestyle or environmental factors that are amenable to change, health promotion and disease prevention appear to hold the key to further improvements in the health status of the United States of America's population. Since 1980, the Department of Health and Human Services has been pursuing the goals set out in a report entitled "Promoting Health/Preventing Disease: Objectives for the Nation." This volume represents the Federal Government's plans for achieving better health for Americans by 1990. Goals are aimed at the five major life stages: infant, child, adolescent and young adults (15-24 years), adults (25-64 years), and older adults (65 and older). For each of the first four groups, the goals are to improve health and reduce mortality; and for the last group, the elderly, to improve health and the quality of life and reduce the average annual number of days of restricted activity due to acute and chronic conditions. These goals are to be im-

plemented in 11 priority areas: high blood pressure control, family planning, toxic agent control, occupational safety and health, accident prevention and injury control, fluoridation and dental health, surveillance and control of infectious diseases, smoking and health, abuses of alcohol and drugs, physical fitness and exercise, and control of stress and violent behavior. Specific and quantifiable objectives, 227 in all, and implementation plans have been developed for each priority area. More than 500 individuals and organizational representatives from the public and private sectors were brought together to participate in this process, recognizing that achievement of the goals requires the participation of institutions and individuals from every sector of society.

8.604 In February 1984, representatives from more than 60 national groups from the public and private sectors met to discuss the status of health promotion in the schools, business and industry, voluntary organizations, health professions, and health care settings. The range of ongoing health promotion for each of the sectors was defined and possible areas for action identified. In addition, each sector identified the barriers to action and recommendations for action were made. The overall success of the conference is reflected in the fact that all of the groups noted the importance of the objectives in their missions and made specific suggestions about ways in which the Federal Government and the private sector could cooperate in achieving the Nation's health promotion goals.

8.605 The Department has been providing financial support to institutions which target resources to areas of high national priority, such as disease prevention, health promotion, increasing the supply of primary care practitioners, and improving the distribution of health professionals. Area health education projects have provided training settings which emphasize health promotion at the community level. Regional resource centers assist in training allied health professionals and multidisciplinary training in geriatric care. The supply of allopathic physicians in the four groups of medical specialties comprising primary care (general practice, family practice, internal medicine, and pediatrics) increased 47.5% from 1970 to 1982. The number of first-year residents in family medicine increased from 190 in 1970 to 2,584 in the 1984-1985 academic year. Data on location of family practice graduates suggest amelioration of geographic distribution problems. Registered nurses working as nurse practitioners/midwives increased 73.98% between 1977 and 1980.

8.606 Health planning, evaluation, and budgeting activities occur in both the public and private sectors as part of sound management practices. At the Federal level this process has recently brought about a major change in Medicare financing, a program which in 1983 covered over 30 million people, 90% of whom are 65 years old or over. The impact of past health care spending for the Medicare program on the Nation's resources has led to a change from the highly inflationary, cost-based reimbursement system for hospitals to a "prospective payment" system based on patient diagnostic groupings. The expectation is that an effective exercise of the prospective payment system will yield greater returns in the form of improved health care at more reasonable cost. Given the increasing percentage of the United States of America's population that the elderly represent, the method of financing the Medicare program will have a progressively larger impact on health care delivery in this country.

Health promotion and disease control

8.607 The United States of America has already reached several of the 1990 objectives in health promotion and disease prevention. Examples include: the goal of less than 10 cases of paralytic polio and congenital rubella—only seven cases of each occurred in

1982; the goal of less than 60% of 9-year-olds with cavities in any of their permanent teeth—in 1982, only about 51% of 9-year-olds had cavities; the goal to reduce the annual rate of work-disabling injuries to 83 per 1,000 full-time workers—current data from the Bureau of Labor Statistics indicate that the rate has already come down to 81 per 1,000.

8.608 Major strides have been made in the area of immunizations. For the 1981-1982 school year, at least 95% of children entering first grade or kindergarten had been immunized against measles, rubella, mumps, polio and diphtheria, tetanus and pertussis. The number of reported cases of measles dropped from 13,597 in 1979 to 1,697 in 1982. Surveillance, including epidemiological investigations, is basic and essential to infectious disease control. Accordingly, our objectives emphasize the continued development and application of effective surveillance techniques; improvements in sanitation; case finding and control; rapid and accurate diagnosis and reporting; appropriate therapy; and the development and use of new drugs and vaccines, such as the vaccine for hepatitis B. In addition, the country gives priority to the surveillance and control of infectious diseases through the increased use of molecular biology to improve the detection of new reservoirs of infection, the definition of populations at risk, the understanding of patterns of disease contraction, and the evaluation of control measures. In 1983, three demonstration computer-based telecommunications systems were established for routine collection, analysis, and dissemination of surveillance data; rapid communication of messages; and investigation of epidemics.

8.609 Major emphasis is placed on making people aware of their own role in their health status. For example, cigarette smokers have a 70% higher overall death rate than nonsmokers, and tobacco is associated with an estimated 300,000 premature deaths a year. The Surgeon General of the Public Health Service has called for a smoke-free society by the year 2000, to increase emphasis on the anti-smoking campaigns already under way. The Environmental Protection Agency (EPA) has been investigating the extent and effects of indoor air pollution and has recently made some estimation of the extent to which passive smoking contributes to lung cancer mortality.

8.610 Significant progress has been made in recent years in improving the already high levels of quality in sanitation and safe drinking water achieved earlier in this century. A foremost concern continues to be the protection of public water systems from contamination by bacteria and viruses. Increasingly, efforts are being placed on monitoring chemical contaminants and reducing their concentrations where they are found to exceed safe levels. EPA is gradually increasing the number of such chemicals for which legally enforceable standards have been established.

8.611 Continuing activities include monitoring levels of man-made toxic agents in the environment, assessing their health significance, and establishing control programs to reduce environmental concentrations of the toxic agents found to threaten the public health. New data show greater health effects at lower blood-lead levels in both children and adults than previously reported. Based on this, in August 1984, EPA proposed to further reduce the amount of lead allowed in gasoline to 0.1 grams per gallon by January 1986, with a possible total ban by 1995. EPA and the Centers for Disease Control (Atlanta, Georgia) recently established a close association between blood lead and hypertension-related mortality.

8.612 In 1984, a new group working on risk assessment and risk management and control was established within the President's Cabinet Council on National Resources and the Environment. Members of the Council include the five principal regulatory agencies that deal with public health and the environment: Food and Drug Administration, Occupational Safety and Health Administration,

EPA, Food and Safety Inspection Service of the Department of Agriculture, and the Consumer Product Safety Commission. The purpose of the new group is to develop consistent, Government-wide approaches to assessing and managing risks to public health and the environment.

8.613 By 1980, at least 50% of the larger employers had established one or more "wellness" programs. Today, worksite wellness programs are expanding in prevalence, in comprehensiveness, and in sophistication. Smaller employers, public sector employers, unions, nonprofit sector employers, and hospitals also are offering wellness programs or facilitating access to community services. This phenomenon mirrors the growth in the general public's commitment to healthier lifestyles, concern for the escalation of medical care costs, acceptance of the changing nature of illness, understanding of the medical system's limitations and awareness that health can be promoted through behavioral and environmental changes.

Technical and Financial Resources Provided to Other PAHO Member Governments

8.614 The Agency for International Development (AID) is the principal Government agency providing financial support to PAHO Member Governments in the health sector. Approximately 40% of AID's health account is allocated to bilateral and regional projects in approximately 20 PAHO Member Countries. These projects, in the form of grants and loans, support activities consistent with the objectives articulated in AID's 1982 Health Policy and Strategy: "to assist countries to become self-sufficient in providing broad access to cost-effective, preventive, and curative health services...AID-financed health projects focus on those health problems which contribute most significantly to infant, child and maternal mortality and morbidity."

8.615 AID's health strategy focuses on selective primary health care (PHC) interventions, including: oral rehydration therapy, immunizations, growth monitoring and nutrition education, family planning, and provision of essential drugs.

8.616 Resources for PHC programs are channeled primarily to those countries with the highest infant mortality rates. Programs in other countries emphasize improved management, productivity, and financial viability of public sector health services; and promotion of alternatively financed and organized health services. Resources provided by AID are used to support technical assistance; incountry and offshore training; commodities; and, in some cases, construction and renovation. Local currencies generated by balance of payment support programs and concessional sales of food also are used to support the local costs of health programs.

8.617 Resources available for programming in the health sector have increased an average of 30% per year since 1981 to the current level of approximately $60 million (not including funds for family planning) in 1985. The increases in 1984 and 1985 are attributable to the priority accorded to Central America. Funding for health will level off and perhaps be reduced in 1986 because of overall Government budget constraints not related to the relative priority of health or of Latin American and Caribbean countries.

8.618 Because of its legislative mandate as a domestic health agency, the Department of Health and Human Services' international cooperation is more limited in scope than that of AID. However, the Department has about 30 bilateral health agreements—some carried out within the terms of science and technology agreements entered into by the Department of State; agreements between governments; and agreements between components of the Public Health Service, such as the National Institutes of Health and the Food and Drug Administration, and their technical counterparts in other countries.

8.619 The Public Health Service, particularly the National Institutes of Health and the Centers for Disease Control, has long conducted research on health issues and problems of importance to developing countries. For example, tropical medicine research includes studies on filariasis, leishmaniasis, leprosy, malaria, schistosomiasis, and trypanosomiasis—the diseases targeted by the WHO/UNDP Special Program on Research and Training in Tropical Diseases. Other important diseases receiving attention include gastroenteritis other than cholera, hepatitis, acute respiratory illness, and sexually transmitted diseases. The Government has shown new interest in the development of new and improved drugs and vaccines for the control of diseases more prevalent in developing countries, better techniques for control of disease vectors, improved epidemiology, simple and effective diagnostic methods, and improved mechanisms for cost-effective service delivery. In addition, the Public Health Service provides substantial technical assistance to AID in the form of expert consultants for both bilateral and regional development projects.

Future Trends in Providing Technical and Financial Resources to PAHO Member Governments

8.620 The United States of America does not anticipate any change in priorities in the type of assistance provided to other PAHO Member Governments. Technical and financial resources will be made available consistent with the resources the principal agencies receive through the budgetary process of the Government.

Uruguay

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1982	2,949,000
Percentage of urban population (as nationally defined)	1984	84.8
Birth rate/1.000 inhabitants	...	...
Mortality rate/1,000 inhabitants	...	...
State of Health Indicators		
Life expectancy at birth	1975-80	69.5
Infant mortality/1,000 live births	1981	33.5
Maternal deaths/1,000 live births	1980	0.5
Death rate 1-4 years/1,000 children	1980	1.1
Percentage of newborn with a weight of less than 2,500 grams	1977	8.3
Availability of calories per capita/day	1979-81	2,886
Availability of proteins (grams) per capita/day	1979-81	86.6
Percentage of deaths due to:		
infectious and parasitic diseases	1981	2.6
tumors	1981	21.4
heart diseases	1981	23.0
motor vehicle traffic accidents	1980	1.2

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1981	55.0
—poliomyelitis	1981	58.0
—measles	1981	90.0
—tuberculosis	1981	74.0
Percentage of population served with potable water	1981	75.0
Percentage of population served by sanitary waste disposal	1981	40.0
Consultations per inhabitant per year	1981	350.0
Number of discharges per 100 inhabitants	1981	11.5
Number of beds per 1,000 inhabitants	1981	5.2
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	20.1
Nurses per 10,000 inhabitants	1981	4.4
Nursing auxiliaries per 10,000 inhabitants	1981	51.8
Health Expenditure		
Health Expenditure per capita (in US$)	...	...
Total health expenditure as a percentage of the GDP	...	...
Percentage of the National Budget dedicated to health	1979	7.8

... Data not available.

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.621 The study of the health service system begun in 1982 was completed, as was the analysis of the technical framework for intersectoral coordination and external cooperation. The resultant information and a number of policy definitions led to adjustments in national programs and to more rational utilization of financial resources. They were also helpful in defining the role and degree of complexity to be assigned to each type of health facility and, consequently, in defining a service network based on a hierarchy of levels of care. This was an important step toward bringing all levels of the system within the reach of the population.

8.622 Operational capacity was improved in selected priority areas. First, managerial procedures were strengthened by developing a simplified information system and defining indicators for hospital administration, training staff in the managerial systems, and linking such staff with the budget system. As a second step, drug management procedures were improved by standardizing the informa-

tion on patterns of drug use, adjusting policies gradually to make them more rational, and adjusting the system of procurement.

8.623 In human resources, the leading actions were in the area of nursing auxiliaries. The occupational profile for nursing auxiliaries was revised, and the curriculum (which also includes the training of instructors) was evaluated and adjusted. The Ministry's Health Auxiliary School conducted courses on pharmacology, mental health, clinical histories, and pathological anatomy.

8.624 In environmental health, the technical cooperation program was revised to focus on critical areas, including institutional development of the State Sanitary Works (OSE), in which cost systems, laboratory services, and staff training were strengthened. In addition, a social involvement program was formulated. Legislation on water fluoridation based on the use of simple, low-cost technology was adopted during the year.

Health promotion and disease control

8.625 In maternal and child health, efforts were aimed at providing for the examination of pregnant women from the early stages of pregnancy to reduce the risk to the newborn. With the cooperation of CLAP, the perinatal information system was implemented in formulating the first assessment of perinatal health systems at the Pereira Rossell Hospital. The Expanded Program on Immunization (EPI) was evaluated, and the cold chain was strengthened with new equipment and instruments. A plan instituted during the year will provide computerized birth records to facilitate keeping track of children susceptible to preventable diseases.

Mobilization of Technical and Financial Resources

8.626 **Technical Cooperation Among Developing Countries (TCDC)**: Close relations were maintained with neighboring countries in the areas of fellowships and short-term consultants.

Cooperation Provided by PAHO/WHO

8.627 **Professional staff assigned to the country**: 4, including the PAHO/WHO Country Representative and advisers in medical care and administration.

8.628 **Regional and intercountry advisers**: 37, for a total of 360 days, in: health service systems, human resources, medical records, maternal and child health, epidemiology, information systems, immunization, environmental health, water and salt fluoridation, chronic diseases, toxicology, and animal health.

8.629 **Short-term consultants (STC)**: 22, for a total of 393 days, in: research, chronic diseases, chemical and biological wastes, EPI evaluation, viral hepatitis, orthopedics, EPI computerization, textbooks, and health surveys.

8.630 **Fellowships**: 28, for a total of 38 months at a cost of US$22,650, in the following fields: health services, human resources, sanitation, disaster preparedness, disease prevention and control, and animal health.

8.631 **Courses, seminars, and workshops**: A total of 15 events involving the participation of 290 officials were held during the year at a cost to PAHO/WHO of US$36,567. The subjects were: primary care, hospital statistics, EPI evaluation, nursing, production and costs, health programming, mental health, pathological anatomy, pharmacy, maternal and child health programming, congenital malformations, and biosafety in the laboratory.

8.632 **Grants**: PAHO/WHO awarded US$25,000 for the environmental sanitation

programs and US$85,000 for a study of chronic diseases; 1983 funds were available for both programs.

General Appraisal and Future Trends

8.633 Significant problems were addressed, particularly those concerning the structure and operation of services. Progress was slow, partly because of economic conditions and the political process, both of which affected the pace of programs in general. Because a change in administration was imminent, the most useful data were obtained and systematized so that the new authorities would have the necessary information available on which to base estimates of service requirements and demand and of the capacity and infrastructure of the national health service network, and would accordingly be able to define policies, introduce structural and strategy changes, and prepare the appropriate programs and set them in motion. This approach also applied to environmental health.

Venezuela

Basic Data

	YEAR	NUMBER
Demographic Indicators		
Estimated population (in thousands)	1985	17,316,000
Percentage of urban population (as nationally defined)	1981	76.4
Birth rate/1,000 inhabitants	1983	29.5
Mortality rate/1,000 inhabitants	1983	4.7
State of Health Indicators		
Life expectancy at birth	1982	69.2
Infant mortality/1,000 live births	1983	29.1
Maternal deaths/1,000 live births	1982	0.5
Death rate 1-4 years/1,000 children	1983	1.7
Percentage of newborn with a weight of less than 2,500 grams	1983	9.1
Availability of calories per capita/day	1979-81	2,646
Availability of proteins (grams) per capita/day	1979-81	71.2
Percentage of deaths due to:		
infectious and parasitic diseases	1983	8.2
tumors	1983	10.3
heart diseases	1983	16.4
motor vehicle traffic accidents	1983	6.2

	YEAR	NUMBER
Coverage Indicators		
Percentage of children under 1 year immunized against:		
—diphtheria-whooping cough-tetanus (triple vaccine)	1983	71.8
—poliomyelitis	1983	91.6
—measles	1983	45.0
—tuberculosis	1982	73.5
Percentage of population served with potable water	1982	90.3
Percentage of population served by sanitary waste disposal	1982	78.2
Consultations per inhabitant per year	1981	180.0
Number of discharges per 100 inhabitants	1981	5.5
Number of beds per 1,000 inhabitants	1982	2.7
Human Resource Indicators		
Physicians per 10,000 inhabitants	1982	12.1
Nurses per 10,000 inhabitants	1982	8.1
Nursing auxiliaries per 10,000 inhabitants	1982	23.4
Health Expenditure		
Health Expenditure per capita (in US$)	1982	130.0
Total health expenditure as a percentage of the GDP	1984	3.0
Percentage of the National Budget dedicated to health	1982	9.1

Activities with PAHO/WHO Cooperation

Development of the health service infrastructure

8.634 The dominant features were the Government's efforts to integrate the sector's components and shape the national health system. With this in view, a System Steering Committee was established to evaluate, regulate, and coordinate sectoral activities. In 1984, the Ministry of Health and Social Welfare (MSAS) was operating 154 hospitals and 3,282 ambulatory health care facilities. The Venezuelan Social Security Institute had 17 hospitals and its beneficiaries numbered 4.7 million, out of an economically active population of 5.5 million.

8.635 A number of technical committees were established in the health sector to define particular problems and to determine the status, objectives, and limitations of strategic projects and of 60 proposed operations, as well as the strategic effects and the operations-actions matrix. This research and analysis process has created intensive activity in the health sector. At the first stage of restructuring, the MSAS presented a proposed program and budget for 1985 which reallocated fund allotments in keeping with the following priorities: expansion of primary health care services; ex-

panded coverage and greater effectiveness in maternal and child care; improvement of nutrition levels; and delivery of health services, with emphasis on preventive measures.

8.636 In support of this initiative, preliminary studies were begun on the financing of ambulatory treatment based on the primary health care strategy. In addition, a national workshop on strategic planning in health was conducted with the participation of the MSAS, Central Office of Coordination and Planning of the Presidency (CORDIPLAN), preventive medicine staff of the schools of medicine, the Central University of Venezuela's Development Center (CENDES), and the Venezuelan Social Security Institute.

8.637 Significant events in human resources were the development of a computerized information system to provide data on human resources in the health sector and the implementation of the first stage of the system, which will make it possible to do studies and projections on the training and administration of health personnel and to develop a continuing education program for health staff, as well as design and institute a program of publications on human resources and the health sector. Teaching-service integration in the faculties of health science schools was evaluated, and the programs were adjusted. In addition, a study was carried out on curricular change and continuing education at the School of Public Health.

8.638 In environmental health, the executive branch decided to extend the Caracas Metropolitan Water Supply System to cover the entire metropolitan area and to enlarge the water systems in the northwestern and central regions of the country and the State of Zulia. Work went forward on the construction of 12,000 housing units per year within the rural housing program. Comprehensive evaluations of air pollution (especially from industrial sources) were carried out in the metropolitan area of Caracas and in the areas of Lake Maracaibo and Lake Valencia.

Health promotion and disease control

8.639 An evaluation of the family planning component of the maternal and child health program financed by UNFPA was begun. Special attention also was paid to the health of adolescents and schoolchildren. In mental health, priority was given to training. An evaluation of the teaching and practice of epidemiology was carried out to lay the groundwork for comprehensive improvements in epidemiological activities. The Expanded Program on Immunization (EPI) was evaluated nation-wide, and proposals were made to improve its performance.

8.640 Following the resurgence of malaria in Venezuela, a study and a Government/PAHO/WHO agreement were being prepared with a view to establishing a unit to conduct research on the diagnosis, epidemiology, and control of rural endemic diseases.

8.641 Leprosy research and the testing of a leprosy vaccine continued. The Rafael Rangel National Institute of Hygiene improved its quality control procedures for medications, drugs, and cosmetics and produced rabies vaccine for human and canine use.

Mobilization of Technical and Financial Resources

8.642 **Technical Cooperation Among Developing Countries (TCDC)**: PAHO/WHO and the Latin American Economic System (SELA) entered into an agreement for joint promotion of TCDC activities in the field of health. A preliminary review was carried out of opportunities and possibilities for technical cooperation in health in Venezuela, with special emphasis on the country's participation in Central American peace and development efforts. Also worthy of note were: the preliminary studies on a project for producing raw materials to be used in the manufacture of widely consumed medications; the design of a

project to strengthen capabilities for manufacturing and maintaining laboratory equipment; and the cooperation among Venezuelan, Caribbean, and Central American institutions in the areas of research, training, and production of generic drugs, as well as in the provision of advisory services on the clinical and toxicological aspects of drugs.

8.643 **International cooperation**: *UNDP* provided US$115,974 for a study on the control of tropical diseases; *UNFPA*, US$16,210 for family planning; *UNDP/UNESCO*, US$80,000 for human resource development; and *IDB*, US$10 million for ambulatory care and US$2 million for production of foot-and-mouth disease vaccine.

Cooperation Provided by PAHO/WHO

8.644 **Professional staff assigned to the country**: 6, including the PAHO/WHO Country Representative and advisers in: strengthening of health systems, production of rabies vaccine, human resource development, international classification of diseases, and veterinary public health.

8.645 In addition, 4 intercountry professionals rendered services in Venezuela during 1984 in the fields of immunology, epidemiology, nursing, and rodent control.

8.646 **Regional and intercountry advisers**: 42, for a total of 327 days, in: tropical research and training, maternal and child health, human resources, oncology, production of biologicals, tuberculosis, disease classification, mental health, nursing, EPI, family planning, oral health, health infrastructure, leprosy, epidemiology, environmental sanitation, medical records, technology in the field of health, strengthening of health services planning, chronic diseases (blindness), essential drugs, and occupational health.

8.647 **Short-term consultants (STC)**: 44, for a total of 413 days, in: laboratory services, strengthening of health services, tuberculosis, maternal and child health, disease classification, occupational health, tropical disease research and training, leprosy, medical records, family planning,. blindness prevention, assistance to School of Public Health, food hygiene, and scientific and technological development in the field of health.

8.648 **Fellowships**: 52, for a total of US$154,240, in the following fields: disease control, tropical diseases, environmental management, laboratory services, strengthening of the health system, foot-and-mouth disease control, food hygiene, human resource development, mental health, family health, oncology, tuberculosis, oral health, nursing, and vaccine production.

8.649 **Courses, seminars, and workshops**: 6, in: malariology and environmental sanitation, dermatoleprology, oral health, disease classification, drug dependency, and occupational health. In addition, an Inter-American working group on bacterial resistance surveillance met during the year.

8.650 **Grants**: A US$15,000 grant was awarded to the Venezuelan Center for Disease Classification (CEVECE) for the performance of national studies on the application of ICD-9 (International Classification of Diseases—9th Revision).

General Appraisal and Future Trends

8.651 In February 1984, following the elections, a new Government was inaugurated and a new Minister of Health and Social Welfare was sworn in. Priorities underwent a number of changes which also were influenced by the economic crisis in the country. The new authorities began to prepare the VII National Plan (1984-1989) to orient the Government's work in health and other fields during its constitutional term of office.

8.652 Prominent among the priorities established for the health sector was creating a steering committee to implement the national health system as a vehicle for the eventual unification of the sector's various components. Adjustments were made to give high priority to promoting primary health care, rehabilitating secondary and tertiary health care centers, increasing the operating capacity of all services, and encouraging community participation in relevant activities and a district-based public health organization.

8.653 Economic conditions made it necessary to reduce budgets sharply and utilize available resources more productively. Consequently, preliminary contacts and studies were made with the IDB with a view to financing *inter alia* a project to strengthen ambulatory care on the basis of the new primary care strategies. An additional indication of the national authorities' growing interest in using resources available through international technical cooperation was the grant request to UNFPA for activities under the family planning program.

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