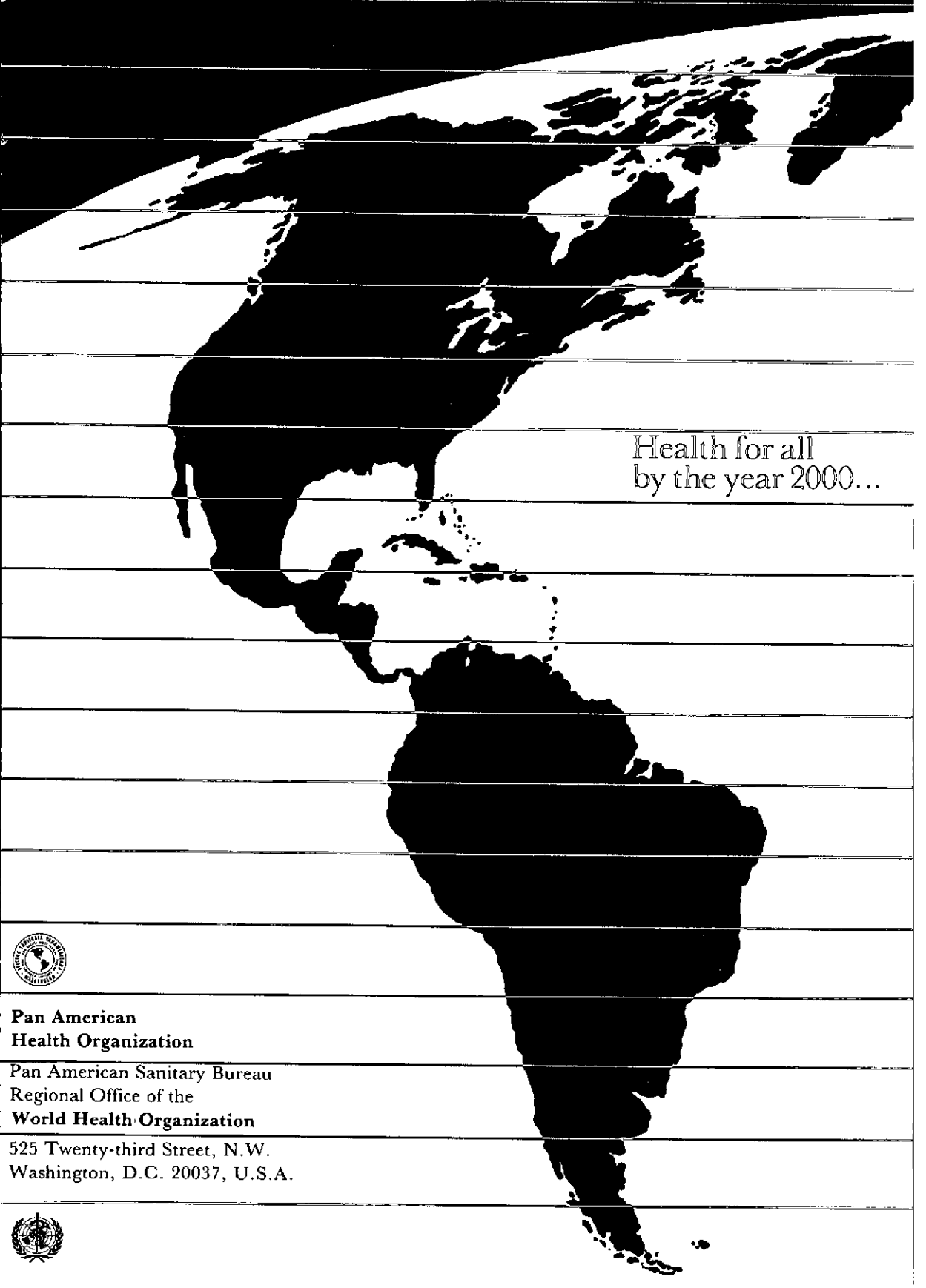
Report of the Director

Annual 1983



Health for all
by the year 2000...

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.

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To the Members of the Pan American Health Organization

It is my honor to submit for your consideration the *Report of the Director* of the Pan American Sanitary Bureau (PASB), Regional Office of the World Health Organization, for the year 1983. This *Annual Report* is part of the collaboration between the Member Governments and the Pan American Health Organization, the aim of which is to increase the levels of health and well-being of the peoples of the hemisphere.

Within the context of the Regional Strategies of health for all by the year 2000 and the Plan of Action for their implementation, joint Country/PAHO technical cooperation is developed in periodic cycles during which priority areas are defined, annual objectives and goals established, resources assigned, activities carried out, and monitoring and evaluation mechanisms applied. Each cycle culminates with an analysis of the advances achieved in relation to the original goals, the problems that remain, and those new challenges which have arisen, as well as the trends that are in the process of emerging in national health development. These country analyses, systematically catalogued at the regional level, constitute the basis for the contents of the *Annual Report of the Director*.

Innovations have been introduced in the preparation of this *Report*, to highlight the actions of the Governments, both individually and collectively, and to identify measures adopted by the PASB in support of those actions. The *Report* is structured as follows:

Part I (Chapters 1-4) presents Country/PAHO activities in the development of the health service infrastructure and in health programs. New approaches to the mobilization of technical and financial resources are described along with the problems encountered.

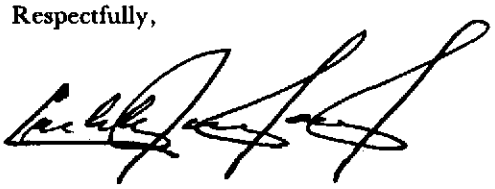
Part II (Chapters 5-6) summarizes the substantive actions of the Governing Bodies of the Organization in support of national and regional priorities, underlining those relating to the program and budget of PAHO/WHO. Those actions were expressed in resolutions adopted by the PAHO Directing Council and Executive Committee.

Part III (Chapters 7-8) analyzes the activities carried out by the Bureau in support of national priorities and in response to resolutions of the Governing Bodies. These actions reflect efforts to implement the new "Managerial Strategy for the Optimal Use of PAHO/WHO Resources in Direct Support of Member Countries."

Part IV (Chapter 9) presents summaries of the activities that each Government has taken, in cooperation with the Organization, toward attainment of national objectives and as a contribution to the regional goals of health for all.

It is hoped that this adjustment in the analysis and presentation of work carried out by the Organization will be more useful to both the Member Countries and the Organization and that improvements can be introduced in consultation with the Governments, so that the *Report of the Director* will, over time, become an increasingly more effective instrument to direct the Organization's cooperation with the countries of the Americas.

Respectfully,



Carlyle Guerra de Macedo
Director

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Part IV. Summary of Each Country's Activities With PAHO/WHO Cooperation

INTRODUCTION

This first appraisal by the current Administration of the Pan American Sanitary Bureau of collaboration between the Governments and the Organization shows that progress has been made toward attainment of national health objectives and the regional goal of health for all. However, serious socioeconomic, demographic, and health constraints persist that hinder fulfillment of the objectives and initiatives of Member Countries and of the Organization.

These constraints, despite their gravity, can be countered by combined action by Member Countries and by more effective cooperation by the Organization. Indeed, together, the search for new approaches and directions can be intensified, the operating capacity to ensure the optimum utilization of sector resources can be increased, intersectoral linkages strengthened, strategies and programs can be adjusted on a timely basis to meet social changes that are continually taking place, and cooperation among developing countries can be strengthened. In this regard, some promising events already have taken place that make it possible to look to the future—albeit with caution—with considerable optimism. Governmental decisions to renew efforts to ensure universal accessibility and equity of health services, revise their approaches and structures, link the components of the sector, improve environmental health, increase community health levels and share their technical capabilities constitute promising advances. Vigorous joint action to expand and strengthen those initiatives will make it possible to overcome many of the major obstacles to health for all by the end of this century.

Analysis of Outstanding Activities

Development of the Health Service Infrastructure

The health service system. Consolidation and extension of coverage of health systems, including strengthening their administration to achieve greater efficiency, effectiveness, and equity continues to be the highest priority of the Governments and the Organization. With the Organization's technical cooperation, several countries have reviewed and adjusted their national health plans; others have linked sectoral institutions to strengthen the health system, and extended services to marginal populations. Finally, several countries are seeking to reach the growing urban-fringe populations with health services.

In these approaches, the Organization has concentrated its resources in specific areas of need in the health planning, country experiences were analyzed, and a new strategy was formulated that provides more flexibility in concentrating resources on high-risk groups in permitting health program adjustments, and in using available resources more efficiently. This strategy is being disseminated in the countries through workshops and courses in the schools of public health.

Intrasectoral linkages, particularly between ministries of health and social security institutions, also are being promoted through sectoral studies, the joint collection and dissemination of information, and coordination of services so as to avoid duplication in the use of sector resources.

A third area of significant cooperation has been the development of technical and institutional capability for the generation and execution of projects, some financed with extrabudgetary resources, to extend the network of services. This improved capability led to the formulation of projects in six countries, of which three obtained external financing in the amount of more than US$40 million.

Human resources. As health services and programs have expanded, training has been given greater preeminence in PAHO's technical cooperation. That cooperation has used the health team concept, and increasingly been directed toward the coordination of teacher training. Besides suporting the basic professional schools, they have trained personnel for the health systems in public health schools and in special programs. Outstanding, because of their multiplier effect, are the activities of the Community Health Training Program for Central America and Panama (PASCCAP) and the Regional Program of Education in Health Services Admininistration (PROASA). They have conducted their own courses and promoted and supported the creation of a network of personnel training institutions in the countries. Educational technology has been promoted and developed successfully through the Latin American Center for Educational Technology in Health (CLATES), whith the results evident in the level of autonomy attained by the Nucleus of Educational Technology in Health (NUTES) of Brazil and a network of 23 national centers of educational technology.

Environmental health. In the area of protection and promotion of environmental health, cooperation has been channeled in accordance with the regional health strategies and the International Drinking Water Supply and Sanitation Decade. A new methodology for planning and operation of urban and rural water supply and sanitation systems was developed as part of the joint program of the Organization with the Agency for Technical Cooperation of the Federal Republic of Germany (GTZ). It facilitated the formulation of national plans by eight governments, five of which obtained external financing in the amount of almost US$16 million. In addition, seven institutions in five countries initiated projects to increase managerial and operational capacity with external funds totaling approximately US$224 million. Solid waste management, sanitary control of housing, prevention and control of environmental pollution, and institutional development were other areas of priority attention. In these areas, the Pan American Centers for Sanitary Engineering and Environmental Sciences (CEPIS) and for Human Ecology and Health (ECO) have contributed to the development and use of effective, low-cost technology, the training of human resources, and the dissemination of knowledge through networks of information centers.

Development of Health Programs

Health promotion and care. The growing severity of **nutrition** problems requires fundamental changes in national and regional strategies to stimulate the production, availability, and accessibility of food for marginal populations. With the active participation of the Institute of Nutrition of Central America and Panama (INCAP) and the Caribbean Food and Nutrition Institute (CFNI), these changes are being promoted in the countries. In **maternal and child health**, emphasis has been placed on acquiring more exact knowledge of health problems and on application of the risk approach in programming services. Most of the countries of Latin America and the Caribbean are carrying out maternal and child health and **family planning** programs with the financial support of the United Nations Fund for Population Activities (UNFPA) and the Kellogg Foundation. The Governing Bodies of the Organization have reiterated to the Governments the urgency of designing and developing programs for **women in health and development**, especially studies of prevention and early discovery of cervical and breast cancer. **Health of the elderly** and **the disabled**, two priority human groups, also continued to be stressed. The **workers' health** program also has begun to be integrated into regular health services. Evaluation of the regional **mental health** program demonstrated the need to

emphasize psychosocial factors in the promotion of health, prevention and control of alcoholism and drug abuse, and prevention of neurological and mental disorders. The **oral health** program provided direct technical assistance to the countries and continued developing appropriate technology, human resources, and the dissemination of information. **Accident prevention and control** received renewed impetus. Development of diagnosis and treatment mechanisms show progress: in establishing **national networks of laboratories** and strengthening the central laboratories in several countries, including the Caribbean; in promotion of the availability of **essential drugs**, particularly through analysis of the problem in the Technical Discussions of the PAHO Directing Council and in actions of subregional groups in Central America and the Andean area; and in efforts of 12 countries to increase the **production and quality of vaccines** required for the Expanded Program on Immunization. Finally, to extend the services of **radiological diagnosis** to marginal urban and rural areas, a basic system of radiology, using only essential equipment and simplified methods was started.

Disease prevention and control. PAHO cooperation has stressed strengthening national and regional **epidemiology** services, epidemiological surveillance, analysis of health conditions, and epidemiological methods for monitoring and evaluation. Owing to continuing high infant morbidity and mortality rates resulting from diseases preventable by vaccination and from diarrhea, top priority has been granted to the immunization and diarrheal disease control programs. In the **Expanded Program on Immunization** (EPI), which covers all the countries, training was intensified, the revolving fund strengthened to ensure the timely availability of vaccines, cold chain development continued, and a multidisciplinary evaluation methodology established. Despite these efforts and the coverage achieved, the Program's impact on morbidity indexes has not yet reached significant levels. There was an increase in the formulation of national programs for **diarrheal disease control**, including evaluation. Sixteen countries already produce oral rehydration salts, and thus the Region has achieved self-reliance. **Malaria** and other **vector-borne diseases** continue to represent serious problems in the countries of South and Middle America. To overcome obstacles to progress in the malaria program, research on drug and insecticide resistance was intensified, and a campaign strategy was adapted to the specific circumstances of each country. Epidemiological studies of **Chagas' disease** were expanded, including the testing of more effective insecticides. Economic and social factors, as well as inadequate sanitation conditions, contribute to the presence of **parasitic diseases**. In this area, PAHO has focused its cooperation on training in diagnosis and epidemiological studies. In the field of **tuberculosis**, control programs were evaluated, personnel training conducted, laboratories for bacteriological diagnosis strenghtened, and BCG vaccine produced. In the **viral diseases** group—viral hepatitis, hemorrhagic fever, and *Herpes simplex*—cooperation was provided in the improvement of diagnostic services and prevention and control techniques. The growing importance of noncommunicable diseases, particularly **cardiovascular disease**, **hypertension**, and **cancer**, required channeling resources and efforts to national programs in these areas, including the design of innovative strategies. Integrated prevention and control activities involving the reduction of risk for specific diseases were promoted throughout the health services system. Outstanding actions were the intensification of cancer research and expansion of the Latin American Cancer Research Information Project (LACRIP). Activities in **veterinary public health** were directed to cooperation in zoonoses control programs, with particular attention to the training and development of diagnostic laboratories, and to the production of needed vaccines for foot-and-mouth disease.

Significant advances in the **emergency preparedness and disaster relief** program included the dissemination of criteria on essential information for first aid personnel and donor agencies, guidelines for training, management of displaced persons, and

preparedness measures for hospitals. Technical cooperation was also provided during emergencies caused by floods in seven countries and following an earthquake in one other Member Country.

Mobilization of Technical and Financial Resources

The Region's socioeconomic situation and the magnitude of health problems have generated a new aspect in Country/PAHO activities—the mobilization of technical and financial resources. Underscoring the most outstanding activities in research, technology, information networks, national and regional centers, cooperation among countries, and the mobilization of external resources, PAHO seeks to draw together national centers of excellence to concentrate joint efforts on resolving critical national health problems. National and regional centers of excellence have contributed substantively in their specific areas, a notable example being the case of effective, low-cost technology for water treatment plants in small communities and the operation of rural water systems. The Pan American Centers have intensified the development of their research and cooperation as part of this effort, with the aim of contributing to the generation, dissemination, and application of new knowledge, and the mobilization of national institutional capacity. They include: the Latin American Center for Perinatology and Human Development (CLAP), Institute of Nutrition of Central America and Panama (INCAP), Caribbean Food and Nutrition Institute (CFNI), and Caribbean Epidemiology Center (CAREC), in the area of health services delivery; Latin American Center for Educational Technology in Health (CLATES) and Community Health Training Program for Central America and Panama (PASCCAP), in human resources; Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) and Pan American Center for Human Ecology and Health (ECO), in environmental health; and Pan American Zoonosis Center (CEPANZO) and Pan American Foot-and-Mouth Disease Center (PANAFTOSA), in veterinary public health.

The generation of knowledge incorporates research, the selective gathering of new discoveries and concepts, their critical evaluation and rational dissemination, and the effective and productive application of this new knowledge at the country level. PAHO cooperation in research has been directed to formulation and application of policies, identification of priority areas of study, incorporation of research activities into all health programs, and strengthening of national research institutions. The Pan American Centers and the WHO Special Program for Research and Training in Tropical Diseases (WHO/TDR) have received new priority, as part of the overall recognition of the importance of research in PAHO's cooperation.

Dissemination of knowledge. This area is the main responsibility of the Latin American Center on Health Sciences Information (BIREME) and the Latin American Health Information Network, and is a complementary priority for the Pan American Centers. Outstanding in their coverage and effectiveness are the Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA), and the zoonoses and foot-and-mouth disease information systems.

Mobilization of institutional capacity. The Pan American Centers have been a valuable instrument for developing national institutions and strenghtening linkage among them. In addition to the national centers in 12 countries that comprise the Latin American Health Information Network and the more than 50 national centers that form the Network of Sanitary Engineering, PAHO collaborates with networks of 23 national centers of educational technology, of national institutes of the Community Health Training Program for Central America and Panama (PASCCAP), and of inter-institutional networks of the TDR.

Technical Cooperation Among Developing Countries (TCDC). PAHO considers TCDC as a fundamental, and thus far all too little used, mechanism to share knowledge, generate resources, and build continuing alliances for health among the countries of the hemisphere. The subregional

groups in Central America and Panama, the Andean area, and the Caribbean are beginning to work together closely on joint programs. Six countries have carried out detailed studies to identify their national capacity for TCDC activities.

Mobilization of international, bilateral, and private resources. International resources are being mobilized toward the countries, and for that purpose PAHO strengthened its relations with the United Nations Development Program (UNDP), United Nations Fund for Population Activities (UNFPA), United Nations Children's Fund (UNICEF), United Nations Environmental Program (UNEP), United Nations Fund for Drug Abuse Control (UNFDAC), the World Bank, the Inter-American Development Bank (IDB), the Organization of American States (OAS), the Inter-American Institute for Cooperation on Agriculture (IICA), as well as with bilateral agencies and foundations such as the Agency for Technical Cooperation of the Federal Republic of Germany (GTZ), U.S. Agency for International Development (USAID), Canadian International Development Agency (CIDA), and the Kellogg Foundation.

Mobilization of external financial resources. PAHO reoriented its approach in this area in accordance with socioeconomic conditions in each country, national financing policies, and levels of indebtedness. Within the framework of national health policies and plans, PAHO is working to increase the national capacity to produce sector analyses which clearly identify those priority areas requiring external resources. In support of this strategy, a "Guideline for the Mobilization of Extrabudgetary Resources" was published, which includes comprehensive information on donor agencies, and on international economic cooperation in health. In the field of external financing, the Organization collaborated with the Governments in formulating and negotiating water and sewerage projects, developing the health service infrastructure, and promoting disaster preparedness and research. More than US$950 million, which is to be disbursed during the period 1983–1986, has resulted from these efforts.

Relevant Problems

Preliminary analysis has revealed a series of problems which affect the state of health for the people of the Americas. Equity and efficiency in the provision of health services and the allocation of health resources has yet to be achieved. The extension of service coverage to the entire population, which has been and remains one of the national and regional objectives of highest priority, is still moving far too slowly in many countries. A major factor is the economic crisis which has meant fewer new resources for the health sector. However, the more basic problem remains the inefficient allocation of resources within the sector. Of equal concern is the absence of adequate information systems so that each Government can determine the degree of its progress, measure the results of its efforts, and reorient the direction of its actions. The development of national and regional systems of monitoring and evaluation remains dependent, to a significant degree, on the strenghtening of those information systems. Both the Governments and the Organization recognize this need and are working to invigorate the system.

Actions of the Pan American Sanitary Bureau

The Management Strategy

The "Managerial Strategy for the Optimal Use of PAHO/WHO Resources in Direct Support of Member Countries" was formulated and implemented to support national processes for the attainment of health for all, to comply with resolutions of the Organization's Governing Bodies, and to cooperate with the Governments in countering the constraints outlined in the foregoing section. In addition to ensuring the effective use of resources, the Strategy serves as a guide to the PASB in the fulfillment of its obligations as the executive arm of the Organization.

The Strategy is based on five basic principles: the country constitutes the basic unit for the production of cooperative activities in health; the Governments are participants in the administration of PAHO

cooperation; technical cooperation should be flexible and capable of adapting to the changing conditions of the Countries and the Region; technical cooperation among countries should be promoted and used to the utmost; and, finally, linkages between the Organization and other national and international agencies should be intensified. In addition, the Strategy defines guidelines for action, which include: the generation, dissemination, and adequate utilization of knowledge; the mobilization of technological, human, institutional, and financial resources; development of national capacities; cooperation among countries; and the functional and operational restructuring of the PASB for optimal management of the Organization's resources in accordance with the basic principles of the Managerial Strategy. Finally, the Strategy defines mechanisms of operation, which are basically: internal coordination at all levels, so that the Organization can provide comprehensive and coherent cooperation to the countries; active participation of the Governments in programming and evaluating cooperation and in defining priorities; reorganization of the system of programming, budget formulation, and evaluation of cooperation; development of information and monitoring and evaluation systems; and, finally, administrative decentralization and procedural simplification.

The Strategy has already served as the guideline for the work of the PASB during 1983. Among the advances made were the definition of policy and guidelines in research and development of technology, the structuring of networks of national centers and their linkage with regional centers, the development of technical and scientific information networks, and the mobilization of extrabudgetary resources. That set of actions is described in Chapter 3 of this *Report* entitled "Mobilization of Technical and Financial Resources."

In addition, several other steps have been taken to implement the Strategy, including: structural and functional reorganization of the Bureau, which has been carried out with the definition of functions and responsibilities on a program basis; establishment of mechanisms of coordination and linkage at all levels of the Organization; strengthening of the Country Representations; study of administrative procedures with particular reference to decentralization and review of personnel policy; and, finally, creation of a unit with the responsibility for analysis of the socioeconomic situation, of health problems, and the formulation of proposals for adjustments in the policies and strategies of cooperation.

One of the most concrete applications of the Strategy has been the multidisciplinary analysis of national priorities and areas for PAHO cooperation. These joint Country/PAHO analyses were carried out in Bolivia, Brazil, the countries of Central America and Panama, Colombia, Cuba, Mexico, Peru, and Venezuela. In those countries, multidisciplinary groups, consisting of national and PAHO staff, examined the health situation, the national priorities and plans, and the need for PAHO cooperation. These actions facilitated the confirmation or readjustment of national programming and the reorientation of PAHO cooperation. Particular mention should be made of the decision of the Governments of Central America and Panama to concentrate efforts and resources on priority areas common to those countries. Similarly, a step in that direction was taken by the countries of the English-speaking Caribbean.

The program reorientation is shown in the new approach involving planning and strategic management in health, in the new dimension that has been given to the research program, and in the change of direction in the workers' health program. In addition, a complete examination was made of the Organization's information system and of national capacities for generating and using information. Relations with bilateral and multinational agencies were expanded as part of the effort to mobilize external resources and, at the country level, effective mechanisms were promoted for the coordination and programming of international cooperation. Finally, the American Region Programming and Evaluation System of PAHO cooperation known as the AMPES was revised to simplify its procedures, to increase its effectiveness, and to give it the flexibility needed to adapt to changing circumstances in the countries.

Perspectives and Trends

The actions that the Governments and the Organization have promoted and developed in the context of the national and regional strategies of health for all by the year 2000 have been and will continue to be conditioned by economic, social, and demographic factors, as well as by the characteristics of the health sector itself.

The Population Explosion and Urbanization

Over the next 15 to 20 years, the population of Latin America and the Caribbean is expected to increase by 220 million inhabitants, most of whom will be concentrated in urban areas. It is estimated that out of a population of 600 million people in the year 2000, 456 million will live in the large cities. Since the urban economies of the developing countries in the Region are not prepared to absorb these human groups, migrations to the cities will accentuate the phenomenon of extreme poverty. The dynamics of this situation will create enormous pressures on every institution in society. For the health sector, it means not only an increase in demand for services to cover the growing population, but also the need to extend coverage to existing poverty communities and to the new groups of urban immigrants. In addition to the phenomenon of urbanization, the population structure already shows a change in age distribution which will be accentuated each year. The number of people over 60 will double in the next 20 years. This change will alter epidemiological profiles, as well as the structure and cost of health services.

Although the population explosion represents the most significant threat to the future of health in the Americas, in the short term, the economic crisis is the most pressing problem for the countries of Latin America and the Caribbean. Preliminary data from a 1983 study on financial repercussions of the Strategies and the Plan of Action indicate that there has been a serious and sharp regression in the pattern of growth. Instead of an average increase of about 6% in the gross domestic product (GDP) during the 1970s, there was a decline of 2.8% in the GDP from 1981-1983. During this period, the GDP changed from 1.5% average growth in 1981 to a 3.3% decline in 1983. Meanwhile, the external debt increased considerably as did inflation, productive activities decreased, and unemployment increased. In addition, a trend toward mounting deficits has appeared in public budgets with direct negative impacts on the health sector. Reductions in real income and increases in unemployment have added to an already impossible burden on the poorest population groups and on unskilled workers. Moreover, to the extent that the fiscal crisis limits public expenditures, it inevitably affects the health services. The aforementioned study predicts that the economic crisis will continue for the remainder of the current five-year period. When it ends, the countries will find themselves in a totally different scenario. The concept of economic development will have to be geared to fulfillment of basic needs, participatory conduct of economic processes, and a profound revision of the principles, methods, and instruments for planning social and economic development.

Health Trends

Parallel to these demographic and economic trends, changes in epidemiological profiles will be evidenced in a gradual increase in chronic and degenerative diseases, even though the Region still has not yet succeeded in satisfactorily attacking the problems generated by extreme poverty, the diseases caused by man, or those that are endemic and preventable by immunization. The combination of these challenges will place added burdens on the health sector. A significant portion of the population continues to lack effective access to services, while, in contrast, institutions are concentrated in the major cities with a duplication of services directed to privileged groups. The various components of the sector lack the degree of coordination necessary for efficent delivery of health services. Administrative inflexibility, traditional procedures, and the indiscriminate use of excessively expensive technology not only limit operating capacity but also increase health expenditures. These

problems, together with socioeconomic and demographic trends, require an in-depth review of established priorities and approaches, the adoption of new strategies and innovative solutions, the use of appropriate technology, and more effective application of scarce sectoral resources.

Future Challenge

The environment of socioeconomic conditions, demographic trends and shifting epidemiological patterns requires an even greater commitment from the Countries and from the Organization than might have been perceived at Alma-Ata. Health for all by the year 2000 has become an even more complex and difficult goal than was visualized a few short years ago.

Translating the Regional Strategies and Plan of Action into concrete actions within each country is essential not merely to progress but to avoid retrogression. The Organization also has a more pressing need today than ever before to reshape its cooperation and respond more coherently to the priorities and needs of Member Governments.

During the past year, a beginning has been made in shifting the Organization's approach. New channels have been opened to the Governments, innovations pursued, and technical excellence stressed in work. Much remains to be done. Among the areas of future challenge are the following:

First, the Countries and the Organization must reach out to the existing resources within each nation, mobilizing those individuals and institutions in an allied attack on the obstacles to improved health.

Second, those national resources then must become a reservoir of talent, skills, and capabilities available for cooperation with other nations.

Third, the divisions that characterize most national health sectors today must be welded together through collaboration, coordination or integration. No nation can afford anything less than the most efficient and effective use of scarce human and material resources. The Organization itself must be an active participant in helping to transfer knowledge, to offer alternative models, and to provide technical counsel that can permit countries to find their own unique paths toward greater sectoral coherence.

Fourth, the need for greater intersectoral coordination is even more apparent today than in the past. The ever greater impact of socioeconomic conditions beyond the control of the health sector demands a more intense effort to build bridges to those sectors.

Fifth, the Organization can and must become a vigorous advocate of rational definition of external cooperation needs and a vigorous advocate of the Member Countries in obtaining those resources.

Finally, the Organization will see itself tested increasingly rigorously on whether it can offer technical excellence that multiplies the value to its own limited resources. There will be a clear need for the Organization to be able to work with the Governments in strengthening the national processes of planning, administration and managment, in mobilizing the institutional capacities of each country and linking them in networks of centers of excellence, in transforming into a reality the plans for joint production and control of essential drugs and assuring their availability to all those who need them, and in ensuring the accessibility of foods that can determine the difference between nutrition and health or malnutrition and death for millions of infants and children.

The past year has seen a series of changes occur in the way in which the Organization responds to these responsibilities. Much has been accomplished; but a far more difficult task lies ahead. The Organization formally has accepted the challenge. Now what remains is to demonstrate by concrete actions, within each Country Office, within every Center, within every Headquarters program, and from within each staff member, that we are capable of meeting that challenge.

Chapter 1. Development of the Health Service Infrastructure

1.1 In the context of the Regional Strategies of Health for All by the Year 2000 (HFA-2000), the Organization is applying its efforts to develop a more integrated approach to technical cooperation through increased flexibility in the use of resources and better internal coordination, which will make it possible to provide more comprehensive support to country programs.

1.2 In accordance with this approach, actions focused mainly on cooperating with the governments to strengthen the health systems infrastructure and to enhance the productivity of services, giving priority to the primary level of care in a system with levels of increasing complexity. Furthermore, efforts were made to link the components of the sector, especially in relations between the ministries of health and social security institutes; to promote development of the necessary human resources; and to relate health service delivery to actions for improving the environment.

1.3 This approach to technical cooperation singled out the importance of promoting: planning and strategic management as a precondition to assure that proposals for change are realistic and viable; an operational interpretation of the primary care strategy, which the countries are already gradually considering as a fundamental course of action that affects the whole system and the entire population, rather than as a vertical program with specific objectives; mechanisms for improving community participation, not only in rural areas but among the various social and political strata as well; and, finally, the formulation and management of projects, especially those with external resources that are critical to the conduct of priority areas of national activity.

1.4 The training and utilization of human resources gave priority to strengthening the integration of education and services in order to prepare and enlist the personnel needed to apply the primary care strategy. Emphasis has also been placed on areas such as the training of intermediate-level technical and auxiliary personnel, continuing education, development and application of educational technology, health education, and community participation.

1.5 Coordination between programs for improving the environment and other components of the health sector resulted in, among other achievements, important activities related to the goals of the International Drinking Water Supply and Sanitation Decade. Those efforts have emphasized the urgency of serving the less-privileged groups of the periurban and rural areas.

Development of the Health Service System

Situation and Trends

1.6 A general evaluation of the development of health services in Latin America and the Caribbean indicates that the governments, within the framework of the HFA Regional Strategies, have continued and intensified their efforts to provide access to health services for the entire population and to improve levels of health and well-being.

1.7 The governments, with the Organization's cooperation, are taking

various approaches to developing their health systems, bearing in mind: characteristics of the national population; socioeconomic, political, and administrative aspects of the country; and the situation of the national health sector. Some of these approaches are summarized below:

1.8 Strengthening of the health system by consolidating the installed capacity and increasing the productivity of services. This approach has been observed in countries where the coverage of the health and sanitation services has reached levels which, when compared to the regional average, may be considered satisfactory. Uruguay is a case in point: the national health establishment is focusing on renewal of the existing infrastructure, increased operating capacity, intrasectoral coordination, better utilization of sector services, and greater linkage with the private subsector. Argentina, Chile, and some of the countries of the Caribbean are likewise taking this approach, each in its own way.

1.9 Development of the system by linking components of the sector and systematically extending services to marginal populations in urban and rural areas. Some governments are undertaking joint actions of several sector institutions in order to pool resources, make better use of installed capacity, and extend the service network. Colombia has continued its studies on intrasectoral integration and coordination, especially of the Ministry of Health and the Social Security Institute, in order to cover the underserved population and rationalize the use of resources. Costa Rica, Mexico, and Panama, each with its own characteristics, are also adopting this approach.

1.10 Development of the system by concentrating resources in specific rural and urban areas whose populations are considered to be priority targets. Some governments are focusing on extending service coverage to the marginal population to promote administrative and logistical development of the system, while at the same time ensuring linkage among the levels of care, access, and availability of health services to underserved communities. These projects are allocated special national resources and in some cases also receive substantial external funding. This approach is being taken by Bolivia, Ecuador, Guyana, Haiti, Honduras, Nicaragua, Paraguay, and Peru. In Nicaragua, PAHO collaborated in defining an operational plan to strengthen the national health service, applying strategies of primary health care, decentralization, community participation, and intersectoral linkage. In Cuba, the national health system gave high priority to developing and strengthening a community medicine model at the level of all polyclinics, rural hospitals, and medical posts, i.e., within the regional network of primary care services to the entire population. PAHO continues to collaborate in developing the human and material resources necessary for the process.

1.11 These approaches to the development of health systems are not mutually exclusive. Moreover, in some cases problems have been identified that affect groups of countries, for which the governments have decided to combine their knowledge and efforts. Such is the case with the growing concern about neglected human settlements in large cities. Health authorities of Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela have joined in analyzing the most significant problems of marginal urban populations and intersectoral linkages in order to devise appropriate strategies, depending on the urban development characteristics of each country.

1.12 Thus, it is the governments, which, in accordance with national conditions, are determining the most desirable direction for development of their health service systems. As a result, the Organization's cooperation with the countries has been channeled toward

analysis of major problems and their respective approaches—with particular reference to the population at risk, the characteristics of and constraints on the system of services, and the use and availability of resources.

1.13 This broad range of national approaches demonstrates how the countries are directing the development of their health systems in the aim of extending service coverage to the population. No common method or process has been adopted, however, that would make it possible to diagnose the current extent of coverage and utilization of services, either in the countries or the Region as a whole. An understanding of the extent and utilization of services is a keystone to effectively identifying critical areas for international collaboration.

1.14 Cooperation with the countries in the development of health systems has been channeled to five principal areas: planning and management of the systems, organization and development of the service network, development of national information systems, linkage of the components of the sector, mobilization of external financial resources, and formulation and administration of projects.

Planning and Management

1.15 In their national strategies, the governments are giving priority to redesigning and strengthening national planning and management processes for the purpose of consolidating and extending coverage. In this respect, Belize, Costa Rica, Dominican Republic, Honduras, Trinidad and Tobago, and Uruguay are reformulating their health plans to incorporate components of the primary care strategy, as has been done in the plans of other countries.

1.16 National planning processes throughout the hemisphere are being readjusted. In Bolivia health authorities reviewed the national strategies and formulated the "Comprehensive Program for Development of the Health Areas and for Popular Mobilization," with emphasis on a new operational structure in the ministry. In the Bahamas efforts have focused on strengthening the administrative and operational structure of the system. In Costa Rica important steps have been taken to link the Ministry of Health with the Costa Rican Social Security Fund. In Dominica and Grenada the processes of planning, programming, and administrative reform are being consolidated. Honduras has emphasized regional and local programming and organization of services in reformulating the national process. In Mexico integration of the sector and administrative and functional decentralization toward the state services have been the aim. Nicaragua has stressed programming of specific areas and preparation for formulation of its next five-year health plan (1985-1989). Panama is formulating a project to redesign the service network. Paraguay initiated a second stage of the project for extending coverage in rural areas. Uruguay analyzed the status of the service system and prepared a first draft of the national health plan.

1.17 The need to revise and update planning and management approaches and methodologies has arisen from changing socioeconomic situations in the countries, evolving problems in the health sector, and increasing demands of a growing population. To meet this need, the experiences of several countries were analyzed in cooperation with the School of Public Health of the University of Antioquia, Colombia; later they were reviewed in a meeting of representatives of the schools of public health of Buenos Aires, Mexico, and Rio de Janeiro and the Latin American Institute of Economic and Social Planning (ILPES). These analyses led to formulation of an approach known as "Planning and Strategic Management in Health," which has served as the basis for a course in planning and management at the School of Public Health of Antioquia. The approach was subsequently analyzed in a workshop held in Mérida, Mexico, which was attended by 27 national staff members in planning and management from Brazil, Colombia, Dominican Republic, Honduras, Mexico, Nicaragua, and Panama; it was also attended by educators from the schools of public health of Colombia and Mexico. This new concept of health planning and management, which offers promising perspectives, is undergoing continuous

analysis and adjustment, is being used in the development of methodologies and instruments, and has served as educational material in the schools of public health of Buenos Aires, Mexico, Rio de Janeiro, and Medellín. In support of these activities, the Organization authorized grants to the four institutions by means of an agreement, the purpose of which was to establish a network of collaborating institutions. ILPES is also collaborating in the development of this approach, which will continue to be discussed in future national and international workshops and courses. Cooperation has targeted the strengthening of the technical and institutional capability of the countries for the formulation of priority projects in order to develop the physical infrastructure and the managerial capability of health institutions. For this purpose, Barbados, Bolivia, Brazil, Costa Rica, Ecuador, Nicaragua, Panama, and Uruguay have completed basic projects for the development of the health service systems.

Organization and Development of the Service Network

1.18 Expansion and consolidation of service networks with the primary care strategy remained a priority of technical cooperation in an effort to ensure access of the population to these services. Bolivia, Colombia, Dominica, Dominican Republic, Ecuador, Guatemala, Honduras, Jamaica, Mexico, Paraguay, and Peru continued working on the development of basic health services for unserved rural and urban populations. In Honduras a study was carried out on the socioeconomic and health situation of marginal urban communities, which focused on analysis of health risks and problems and identified feasible strategies for their solution. In Jamaica support was provided for the completion of an audit of the primary care level that identified needs and priorities for the provision of services, strengthening of intermediate levels of the system, and development of mechanisms of linkage between peripheral basic services and hospital services. Collaboration in Nicaragua was geared to defining an operational plan, within the framework of strategies of primary care, decentralization, community participation, and intersectoral linkage. In Uruguay there was collaboration in formulating a plan for outpatient care in Montevideo based on studies of the location of the population and patterns of service utilization.

1.19 The increased concentration of population in urban areas has required more attention to the implementation of the primary health care strategy, particularly in large metropolitan areas and intermediate-sized cities. Visits were made to various provinces of Argentina to study the means for adapting the primary health care strategy that has been developed in rural areas in order to extend it to urban and periurban areas. In Honduras a study was made of the socioeconomic and health situation of the marginal districts of the metropolitan region, focusing on the analysis of risks and health problems, and feasible strategies were identified for their solution. For example, the possibility was studied of extending the work schedule of health centers to include evening hours. PAHO collaborated in Uruguay in the preparation of the ambulatory care plan of Montevideo, based on the study of population location and patterns of health service utilization. This plan will serve as the basis for preparing a project proposal to the Inter-American Development Bank (IDB). PAHO continued to support case studies on the development of health services prepared by work groups in Bogotá, Buenos Aires, Caracas, Lima, and Mexico City. In collaboration with the United States Agency for International Development (USAID) and the London School of Public Health, a survey was initiated, at the community level, on the perception of needs and the utilization of health services in Antigua, Dominica, St. Kitts-Nevis and Saint Lucia, the results of which should facilitate the process of extending and organizing health services in these countries.

1.20 Within the framework of extending coverage of services to the entire population, governments are channeling their actions toward overall strengthening of the health service network at its different levels of complexity. In countries that have achieved a high degree of coverage and complexity of services—among others, Argentina, Brazil,

Costa Rica, and Uruguay—activities focus on coordinating local programming schemes, consolidating administrative processes, making efficient use of resources, and analyzing financing. In Colombia, Dominican Republic, Ecuador, Guatemala, Honduras, Jamaica, Paraguay, and Peru, the service infrastructure is undergoing a period of expansion based on external financial resources. This influx of funding has had an impact on the complexity of administrative functions and has led to adjustments in national actions and in the nature of the Organization's cooperation. Finally, in countries such as Bolivia, where repercussions of the economic crisis have been most severe, cooperation has aimed at improving basic services, once priority needs at the level of the health areas have been defined.

1.21 Specific areas of technical cooperation to the governments, in study and analysis of the service network, have been diverse in the various countries. In Argentina, research was done in Rosario, Santa Fé Province, that made it possible to quantify the resources invested in the health service network and their operating and production costs. In Dominica and Saint Lucia studies were initiated to determine the viability and feasibility of projects for the construction of polyclinics annexed to the main hospitals, which will serve as the third level for case referral from outlying areas and will strengthen hospital outpatient and emergency departments. A study in the Dominican Republic aimed at defining the levels of care and determining the areas of influence of hospitals in Santo Domingo. Guatemala inaugurated the Hospital of San Juan de Dios in the capital and conducted a study on the need for hospital beds in the country over the next 10 years. Nicaragua continued the study and design of solutions for expansion of installed capacity in services of intermediate complexity (health centers with and without beds) within the schemes for regionalization. Panama continued its study of the hospital network, which includes remodeling of seven hospitals in the interior of the country, as well as eventual construction of new hospitals in the metropolitan area of Panama City. A computerized model developed in Uruguay for the regionalization of services is based on the origin and flow of the demand for services and the need to define the levels of care. A working group on the organization and delivery of health services according to levels of care met in July in Montevideo, Uruguay. The participants—from Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Peru, Uruguay, and Venezuela—reviewed the conceptual and operational aspects of the levels-of-care approach, to analyze selected experiences in having applied it and to agree on a basis for methodological development of the concept as a mechanism for making better use of resources and improving the population's access to services.

1.22 The establishment and implementation of nursing standards formulated by interdisciplinary groups in the sector continued at all levels of care in the countries. The Ministry of Health in Chile designated the health service of Viña del Mar, Quillota, as a model area and nursing demonstration center for implementation of the standards. Participants from 14 of the English-speaking countries of the Caribbean attended a workshop to evaluate and adjust standards for hospitals and peripheral services. Argentina, Bolivia, Ecuador, Mexico, Panama, and Peru are continuing to implement the standards formulated by national groups in an effort to improve comprehensive care to the communities, which has increased the efficiency of nursing resources in rural and urban areas. In Chile, Mexico, Panama, and Peru nursing personnel participated in multidisciplinary groups working on the design and implementation of the supervisory systems necessary to the process of decentralization toward state and provincial services.

1.23 Activities in the area of medical records continued to focus on the organization and operation of record-keeping and the training of personnel. Dominica developed a plan for reorganizing the medical record service in its main hospital. Honduras opened a new area headquarters hospital that made it possible to better define the functions of medical records in that area, integrate those functions with hospital

activities, and prepare manuals on standards and procedures for this type of establishment. Trinidad developed a plan for reorganizing the medical records of all secondary and tertiary care hospitals. In Jamaica actions continued to be carried out in cooperation with USAID and PAHO, for development of health records for all health centers with primary care activities. In Colombia a study was initiated on the content, management, and use of health records in marginal urban and rural areas. There was collaboration in Bolivia on the design of a manpower training course at the intermediate level. In Venezuela an evaluation was made of the three-course program offered in Caracas, Maracaibo, and Mérida.

1.24 Extension, consolidation, and maintenance of the physical infrastructure continue to be an area of considerable concern for health authorities. The Dominican Republic developed an architectural plan for rural health clinics and subcenters with 20 and 40 beds, including equipment; also a program was developed for rehabilitation of five establishments and formulation of projects to improve 46 hospitals in the interior, as well as outpatient and emergency services in the hospitals of Santo Domingo. Ecuador was carrying out a project financed by the Inter-American Development Bank (IDB) for development of the infrastructure, with construction of health posts and centers, in combination with institutional development and comprehensive care by levels. In El Salvador cooperation continued on execution of an IDB-funded project for hospital maintenance, specifically in the areas of management and logistics, medical equipment, basic equipment, installations, and buildings maintenance. In Guatemala support was provided for strengthening maintenance through installation of units at the regional level throughout the country. In Honduras equipment was purchased for distribution to the health centers. In Nicaragua the Division of Engineering and Maintenance was created and expected to begin operations in 1984; plans were also initiated for the National Engineering Center, and the design of 23 workshops on hospital maintenance was completed—including the draft of a medium-term plan for health establishment maintenance. Panama drafted an agreement to carry out studies and prepare drafts for improving the national hospital network. As part of the first phase of an IDB-financed project, Paraguay completed construction of 81 health posts, 9 centers, and 1 regional center, more than half of which are already in operation; there was also collaboration in a review of the architecture, construction, and equipping of establishments that will be built during the second phase of the project. In Trinidad and Tobago cooperation was given to the National Hospital Administration Corporation for preparation of operational guidelines for the central warehouse, distribution of supplies, and management of inventories. In Uruguay support was provided in defining medical-architectural standards for principal establishments of the Ministry of Public Health. Collaboration in Venezuela focused on organizing a committee on physical and equipment development of the Ministry of Health and Social Welfare/Ministry of Urban Development. At the subregional level, in compliance with Resolution V of the XXVII Meeting of Ministers of Health of Central America and Panama (1982), reformulation began of the subregional project for the training of technicians in health equipment operation and maintenance, which implies strengthening national training units and establishing a center for technical training in one of the countries. At the regional level, guidelines were drawn up for evaluation of the physical infrastructure of establishments with less than 50 beds, and these were applied experimentally in Colombia, Honduras, Nicaragua, and Venezuela.

Development of National Information Systems

1.25 In the area of national health information systems, activities focused on the development of methods and procedures and the training of personnel. Development of methods and procedures entailed identifying groups according to socioeconomic, geographic, and demographic criteria to

analyze the effectiveness, progress, efficiency, and equity of health systems. A method was designed for the qualitative evaluation of certain activities of the service system—with emphasis on the extension of coverage—and methods were developed for selecting indicators to monitor and evaluate lower levels of the system. In the training of personnel in information systems, two workshops were held: representatives from Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama attended the first one, and the second had representatives from Bolivia, Colombia, Ecuador, Peru, and Venezuela. Both workshops focused on information as an integral part of planning, programming, managing, monitoring, and evaluating activities in the health service system.

Intrasectoral Coordination

1.26 In the area of intrasectoral coordination, some of the governments continued to work on structuring their national health systems so as to interrelate components of the sector, especially ministries of health and social security agencies. The goal is to achieve equity in the provision of health services and coordinated and effective utilization of sector resources. The approaches vary according to the individual characteristics of each country in terms of national policy, areas of responsibility, management, and financial schemes. PAHO stepped up efforts to promote and support coordination between ministries of health and social security agencies. During the year, it participated in meetings of subregional offices of the social security agencies, carried out for this purpose, in Colombia and Panama, and in the XXI General Assembly of the International Social Security Association in Geneva, Switzerland.

1.27 The Organization is cooperating in carrying out studies and analyses, collecting and disseminating technical information, and providing advisory services, so that the countries will have criteria for making decisions on inter-institutional coordination and linkage. It is also cooperating in strengthening institutional management and programming at operational levels in the field. In this respect, numerous activities have been carried out. Colombia began execution of a plan of operations with the Social Security Institute that focused on development of basic administrative units as support for the process of regionalization and the local programming of services to extend their coverage. Costa Rica continued to work on the organization and integration of sector institutions, and PAHO collaborated with the Social Security Fund in developing systems for supplies, finance and accounting, maintenance of installations, and provision of medications. The Dominican Republic carried out research on operations of the health services of the Social Security Institute, as an initial step toward strengthening its installed capacity and institutional development; based on this study, and in collaboration with the International Labor Organization (ILO), support was given in the area of medical care management in social security. Guatemala devised a scheme for regionalization of medical services in the Social Security Institute, and support was provided in organizing and managing a new 260-bed hospital in the capital. In Honduras a tripartite agreement was signed by the Ministry of Health and Social Welfare, the Social Security Institute, and PAHO for developing technical cooperation activities in aspects related to: the coverage, content, and quality of services; adaptation of the structure of the Social Security Institute, taking into account the primary care strategy; rationalization of the use of human resources and critical supplies; and strengthening of relations with both the Mexican Social Security Institute and the Ibero-American Social Security System. In Panama collaboration with the Social Security Fund and the Ministry of Planning and Economic Policy targeted defining terms of reference for a study of the health sector; a general supply catalog was also prepared for the Ministry of Health and the Social Security Fund.

Mobilization of External Financial Resources and Formulation and Administration of Projects

1.28 In the programming of external financial resources, PAHO cooperated with

the countries in strengthening the technical and institutional capability of sector agencies to formulate and execute projects for development of the physical infrastructure and institutional capacity. A seminar was held on the formulation and execution of development projects with international cooperation, that brought together decision-makers from Bolivia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Paraguay, and representatives of eight international development agencies—USAID, IDB, World Bank, the Getulio Vargas Foundation, the Latin American Institute of Economic and Social Planning (ILPES) of the Economic Commission for Latin America (ECLA), the Central American Institute of Public Administration, the United Nations Development Program (UNDP), and the United Nations Children's Fund (UNICEF). A directory of technical reference materials was prepared for formulating and managing development projects and for training activities in project management; the directory resulted from a survey conducted in the principal areas of development at the hemispheric and global levels. An accelerated program was organized for the exchange of experiences in critical aspects of the project cycle; it was to begin in 1984, with Bolivia, Dominican Republic, Ecuador, Guatemala, Honduras, Nicaragua, and Panama participating. Completion of basic sector studies will provide orientation in the formulation of policies and programs to develop health systems and services that will eventually result in the design of concrete development projects in health. Sector studies were carried out in Barbados, Bolivia, Brazil, Costa Rica, Ecuador, Nicaragua, Panama, and Uruguay; in some of these cases PAHO participated along with other international development agencies. This process has culminated in direct cooperation in formulating specific development projects for health systems and services with external financial cooperation in Costa Rica, Dominican Republic, Nicaragua, Panama, Paraguay, and Peru; of these, three projects resulted in loans and grants approved during the year, totaling about US$40 million.

1.29 PAHO also collaborated in the execution of projects—especially implementation of institutional development programs that have extrabudgetary resources—in Bolivia, Colombia, Dominican Republic, Ecuador, El Salvador, Honduras, Panama, Paraguay, Peru, and Uruguay. The projects in which PAHO participated represent US$44.5 million in loans for the development of the physical infrastructure, in addition to approximately US$6 million in grants for technical cooperation, of which PAHO executes approximately 85%.

Development of Human Resources

1.30 The planning, training, and utilization of human resources has been a major focus of PAHO technical cooperation as part of the HFA Regional Strategies and in accordance with the needs and priorities defined by the governments. Actions aimed at developing human resources take into account health service requirements and are based on the concept of the "health team." The major areas of technical cooperation in this program consist of promotion of policies and planning, education in priority areas, training of basic personnel, development of educational technology, health education and community participation, and administration of fellowships.

Promotion of Policies and Planning

1.31 The international course on health manpower planning held in Lima, Peru, in 1981, led to holding of national courses in Ecuador and Uruguay in 1982, and in Brazil and Paraguay in 1983. Cooperation with Jamaica included incorporating human resource programming into the overall development process of the Ministry of Health and strengthening the manpower planning capability of that Ministry. Cuba and Ecuador received support in analyzing and improving the information systems of their Ministries of Health for manpower planning.

1.32 The PAHO publication of *Techniques for Determining the Supply and Demand for Human Resources* contained a chapter on methods for planning utilization of these

resources for primary care in the developing countries. Other activities involved cooperation with the University of the West Indies in designing modules for the planning and management of human resources within the public health program.

Education in Priority Areas

1.33 **Medical education.** The Pan American Federation of Associations of Faculties (Schools) of Medicine (FEPAFEM) and PAHO, under the auspices of the Kellogg Foundation, joined efforts to evaluate the integration of education and services programs underway in Brazil, Colombia, and Mexico. Results of the evaluation were analyzed in meetings held in each of these countries, and their programs were subsequently revised. The Colombia program was transformed into a nationally coordinated network of projects that will increase the exchange of information and experiences and give greater consistency and breadth to each of the projects. The *Guideline for the Evaluation of Schools of the Health Sciences* was modified with the view to preparing a profile of each school for comparison with an ideal profile; Guatemala requested use of the guideline to evaluate the School of Medicine of the University of San Carlos.

1.34 In Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, PAHO is cooperating in the development of educational technology. The School of Medicine of the National Autonomous University of Honduras is establishing a center for educational technology that will serve the departments of medicine and nursing. The Ministry of Health of Guyana requested that a study be initiated on the creation of a health sciences school, for which purpose representatives of the University of Guyana visited schools of medicine with innovative programs in Canada, Colombia, Cuba, and Mexico and prepared a draft plan for institutional and program development. Technical and financial support was provided to the two schools of medicine in Nicaragua, where the National Department of Education of the Ministry of Public Health is also developing an information and documentation center, as well as one for educational technology. PAHO cooperated with Peru in the areas of educational planning, curriculum design; and educational technology in the schools of medicine of San Marcos and Cayetano Heredia Universities. During the year, most of the countries received PAHO collaboration in regard to medical residencies in specialties—for example, Guatemala in defining the content and regulations of residencies, and Brazil in strengthening the Directorate of Medical Residencies within the Department of Higher Education of the Ministry of Education.

1.35 **Nursing education.** Year-end data show that four levels of nursing training exist in Latin America: auxiliary, intermediate and/or high-level technician, general nurse, and graduate nurse. Of the training programs that are given, 512 are for nursing auxiliaries, 243 for general nurses, 56 for intermediate and/or high-level technicians, and 163 for graduate nurses. The approximate number of graduates per year is 23,000 auxiliaries and 17,000 nurses, of which 4,000 are intermediate-level technicians, 7,000 are general nurses, 2,000 are high-level technicians, and 4,000 are registered nurses.

1.36 A group of 15 nurse-educators from Latin America and the Caribbean and three from Spain met in Washington, D.C., in May, for the purpose of analyzing the training and utilization of human resources in nursing. They pointed out the necessity to revise the educational modules for nursing at all levels and to adapt them to the reality of each country. The group suggested that technical cooperation should emphasize: development of a network of nursing information and documentation linked to other networks in the health sector; establishment of collaborative networks on teaching, service, and research for the exchange of experiences; periodic analysis of the training, utilization, and development of personnel; and expansion of the textbook program. This meeting resulted in two subregional meetings—one in Costa Rica and the other in Ecuador—which analyzed critical areas in nursing education and service delivery and presented proposals for subregional cooperation (between Central America and Panama and the countries of

the Andean Group).

1.37 The Regional Program on Advanced Training in Health Administration (PROASA) sponsored a workshop in April to analyze the practice and teaching of management in undergraduate programs in nursing, continuing education in management, and teaching in graduate programs.

1.38 Researchers from several countries met in Washington, D.C., in December, to analyze trends and perspectives for nursing research in Latin America. They proposed a draft program for research on nursing practices to be undertaken with five countries in the areas of practice, health problems affecting large sectors of the population, service delivery, and human resource development.

1.39 **Dental education.** Technical assistance during the year emphasized integration of education and service programs and extension of this concept within the countries—among others, Argentina, Brazil, the Dominican Republic, and all the Central American countries. The program on innovations in dental education and services, which was initiated in 1976 as a cooperative effort of PAHO and the Kellogg Foundation, came to a close with a meeting in Costa Rica, that included representatives of approximately 18 countries and projects that had been participating in the program. With PAHO assistance, the first English-speaking Dental School in the Caribbean is being developed in conjunction with the University of the West Indies in Mount Hope, Trinidad and Tobago.

1.40 The development of manuals and materials for dental students and institutions in the Region was a major area of activity. The sale and utilization of dental textbooks was studied and will begin in 1984. A set of 14 basic dental hand instruments was made available through PAHO for use by dental students, universities, and health service programs. The Organization also provided the Oral Pathology Center in Santiago, Chile equipment and materials to better serve future fellows in Latin America, the Dental Association of Argentina assistance in developing and making available information and reference materials in Spanish, and the Dental College of Peru advisory services in developing programs for community education and the continuing education of dentists.

1.41 **Education in veterinary medicine.** Two PAHO-sponsored seminars aimed at strengthening veterinary public health education and placing greater emphasis on primary health care. The first, held in La Plata, Argentina in September, was attended by 22 professors from 14 Latin American countries, who reviewed the teaching of epidemiology, sanitation, hygiene in food technology, program administration, the role of veterinary public health educators in the community, and primary health care. The second seminar, held in Lima, Peru in November, was attended by 25 deans and professors from schools of veterinary medicine of Bolivia, Colombia, Ecuador, Peru, and Venezuela, who recommended promoting cooperation and academic exchanges among the schools to strengthen veterinary public health education in the Andean area and to increase participation by the schools and veterinary doctors in primary health care.

1.42 The Regional Education Program for Animal Health and Veterinary Public Health Assistants in the Caribbean (REPAHA)—with headquarters in Georgetown, Guyana, and serving the countries of the English-speaking Caribbean—graduated its seventh class, for a total of 212 graduates.

1.43 **Public health education.** The training of public health personnel, which is necessary in developing the health services system, continues to be a priority area for the countries. In Bolivia PAHO provided advisory services for the establishment of a one-year public health training program, to be initiated in 1984. A special grant to Costa Rica for the National University for Education by Correspondence (UNED) would make it possible to develop a program for training intermediate-level health administrators by correspondence. Technical support provided to Ecuador targeted a graduate program in public health at the School of Medicine of the Central University of Quito. In Nicaragua the Organization collaborated with the Ministry of Public Health in developing a modular master's degree program in public health. In Panama

it cooperated with the National University and the Ministry of Health in preparing for establishment of either a school of public health or a program at the master's degree level. Cooperation with Peru included evaluation of the School of Public Health of the Ministry of Health, with a view to restructuring and reorienting it.

1.44 During the XXVII Special Meeting of Ministers of Health of Central America and Panama (1982), the Community Health Training Program for Central America and Panama (PASCCAP) was entrusted with the task of promoting development of public health education in that subregion. The Program is collaborating directly with the Ministry of Public Health and Social Welfare of Honduras in training intermediate-level health workers. Also, promotion of the training of personnel in epidemiology was a subject of a meeting held in November in Buenos Aires, Argentina, the aim of which was to set up a broad training program for different levels and categories of personnel to be implemented in selected countries as a collaborative effort.

1.45 During a special meeting on public health education programs held in December in Washington, D.C., education coordinators from schools of public health and graduate programs in preventive and social medicine discussed the importance of incorporating disaster preparedness into their curricula. They also discussed training for strategic health planning and reviewed educational needs of the Expanded Program on Immunization.

1.46 **Education in health services administration.** The year saw completion of the first stage of the Regional Program of Advanced Training in Health Administration (PROASA), which PAHO is carrying out in Latin America and the Caribbean with support from the Kellogg Foundation, in the interest of increasing access to health services based on comprehensive, continuous, permanent care of the highest quality at both the individual and community levels. Toward that end, operational objectives have been established for training in management, research, communication, and information, and for development of networks of collaborating centers. These objectives were behind PROASA support for 58 regular refresher courses in health administration for educational personnel from 35 institutions in Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Jamaica, Mexico, Peru, the United States (Puerto Rico), Uruguay, and Venezuela. Working meetings, to analyze regional educational programs and establish a basic educational plan for them, as well as to set up a permanent system of bibliographical references for educational personnel and health administrators, were held in Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Peru, Uruguay, and Venezuela. Other activities included laying the foundations for a continuing health education program and preparing textbooks and anthologies.

1.47 PROASA contributed to forming a collaborative network of educational institutions and programs in health service admininistration in Argentina, Brazil, Colombia, Dominican Republic, and Peru. Programs for Chile, Costa Rica, Mexico, Uruguay, and Venezuela have also been proposed. Two other areas of technical cooperation were the preparation of teaching modules for health service admininistration oriented toward primary health care and the development of research proposals on health service delivery in educational institutions.

1.48 With a view to improving communication and information, an update began of the Directory of Regular Programs of Education in Management in Latin America and the Caribbean.

Training of Basic Personnel

1.49 **Training of intermediate-level technical personnel.** The particular characteristics of the development of health programs and services in the countries of the Region have led to a proliferation of various types of intermediate-level technical personnel. These individuals differ as to their training, qualifications, employment, and level of performance. PASCCAP, at the request of the Ministers of Health of Central America and Panama, has undertaken to update the study on the training of intermediate-level technical personnel. The

production of bibliographical material and manuals for these personnel, through the PAHO Expanded Program of Textbooks and Instructional Materials (PALTEX), was reviewed.

1.50 **Training of auxiliary personnel and community workers.** PAHO collaborated with the countries in training the auxiliary personnel needed for coverage extension programs, as well as in analyzing their training and utilization within the national context and their interrelationship with other members of the health team. The educational role of community health workers was the subject of a study conducted in Colombia, in conjunction with Valle University in Cali.

1.51 **Training in supervision.** The Organization cooperated in consolidating programs for the training of health service supervisors being developed by Bolivia, Costa Rica, Cuba, El Salvador, Honduras, Nicaragua, Panama, and Peru. The Brazil

Table 1. **Fellowships awarded in the Americas, by country of origin and type of training, 1983**

Country of origin of fellows	Type of training			
	PAHO/WHO-organized or assisted group courses	Long-term fellowships	Short-term fellowships	Total
Antigua and Barbuda	3	—	3	6
Argentina	33	3	49	85
Bahamas	1	4	11	16
Barbados	5	6	20	31
Belize	1	9	3	13
Bolivia	10	9	13	32
Brazil	38	6	114	158
Canada	—	—	2	2
Chile	16	7	55	78
Colombia	33	—	62	95
Costa Rica	6	6	15	27
Cuba	24	7	52	83
Dominica	2	3	8	13
Dominican Republic	28	2	53	83
Ecuador	24	8	19	51
El Salvador	14	11	6	31
Grenada	3	—	3	6
Guatemala	36	30	33	99
Guyana	1	3	10	14
Haiti	9	9	7	25
Honduras	23	13	37	73
Jamaica	3	19	23	45
Mexico	41	9	34	84
Nicaragua	16	4	53	73
Panama	29	6	34	69
Paraguay	16	6	8	30
Peru	38	8	38	84
Saint Lucia	5	1	1	7
St. Vincent and the Grenadines	1	2	4	7
Suriname	—	2	25	27
Trinidad and Tobago	4	5	9	18
United States of America	—	—	18	18
Uruguay	16	—	9	25
Venezuela	15	9	38	62
British Territories	4	5	18	27
French Antilles, Guiana	—	—	1	1
Total	**498**	**212**	**888**	**1,598**

— None.

program focused on the states, with special attention to São Paulo State. Uruguay continued research on the need for supervision within its programs for extension of coverage, the results of which will be used for creation of a national supervision model. In Cuba efforts included evaluation made by supervisory personnel of the performance of intermediate-level health technicians, especially nursing personnel. In Peru supervisor training continued at the national level through use of self-instruction and supervision modules; the latter has been tested in two regions of the country. The Department of Public Health and Population of Haiti requested collaboration in holding a course on supervision, in which the Peruvian supervision module served as an educational tool.

1.52 The coordination of joint continuing education and supervision programs was analyzed in Washington, D.C., in September, in a meeting of national staff involved in these programs in 14 countries. Each of the countries represented gave a report on the activities carried out from 1978 to 1983 in training in supervision—including educational materials produced and supervision modules established at the national level—during which time more than 175,000 supervisors were trained.

1.53 **Continuing education.** A six-year old regional project sponsored by the Canadian International Development Agency (CIDA) and executed by PAHO for the purpose of strengthening the infrastructure necessary to provide continuing education for health personnel included at year-end participation of Bolivia, Colombia, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, and Nicaragua, as well as PASCCAP. Among the activities carried out as part of this project were: establishing an infrastructure adapted to continuing education programs in six countries; determining priorities and providing the basis for implementing programs in countries in accordance with their available resources; conducting training activities; preparing and producing educational materials and a generic model for preparing work modules for technical and auxiliary health personnel. The project also made it possible to evaluate the existing administrative structure and teaching methods used, determine the health team's need for continuing education, and understand the increasing importance and need, at the national level, of allocating adequate human and financial resources for continuing education programs at all levels.

Table 2. **Average cost per fellowship, by country of study and type of study, 1983**

Type of fellowship	Place of study	No. of fellows	Dollar amount obligated	No. of fellowship/ months	Average cost per fellowship	Average duration in months
Long-term fellowships	USA/Canada					
	Puerto Rico	44	803,200	595	18,254.50	13.5
	All Others	173	1,178,831	1,851	6,814.10	10.7
	Total	**217**	**1,982,031**	**2,446**	**9,133.80**	**11.3**
Short-term fellowships	USA/Canada					
	Puerto Rico	151	620,284	214	4,107.80	1.4
	All Others	728	1,439,789	776	1,977.70	1.1
	Total	**879**	**2,060,073**	**990**	**2,343.70**	**1.1**
Group course fellowships	USA/Canada					
	Puerto Rico	29	141,060	34	4,864.10	1.2
	All Others	473	912,812	666	1,929.80	1.4
	Total	**502**	**1,053,872**	**700**	**2,099.30**	**1.4**
Total, all types	USA/Canada					
	Puerto Rico	224	1,564,544	843	6,984.60	3.8
	All Others	1,374	3,531,432	3,293	2,570.20	2.4
	Total	**1,598[a]**	**5,095,976**	**4,136**	**3,189.00**	**2.6**

[a]Of these, 10 are interregional fellowships.

Table 3. **Fellowships awarded in the Americas, by field of study and country of origin, 1983**

Field of study	Country of Origin of Fellows																		
	Antigua and Barbuda	Argentina	Bahamas	Barbados	Belize	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominica	Dominican Republic	Ecuador	El Salvador	Grenada	Guatemala	Guyana
Health Organization																			
Public Health Administration	—	1	2	5	—	9	9	—	3	—	3	1	1	7	10	6	1	27	2
Hospital and Medical Administration	—	—	—	—	—	—	—	—	—	—	—	7	—	5	4	1	—	5	—
Other PHA Sub-fields	—	13	5	8	3	4	47	—	12	56	4	9	1	16	4	5	1	12	2
Sanitation																			
Sanitary Inspection	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Sanitary Engineering	—	—	—	1	—	—	2	—	—	—	—	—	—	—	—	2	—	—	—
Other Specialized Fields	—	8	1	6	1	3	6	—	8	9	5	—	1	11	6	2	—	18	3
Nursing																			
Nursing Education	—	5	—	—	2	—	—	1	—	—	—	1	1	—	2	—	—	—	—
Public Health Nursing	—	1	—	1	2	—	—	—	—	—	—	—	1	1	1	2	—	—	—
Nursing Services	—	1	1	—	—	1	—	1	2	2	—	—	2	—	—	—	—	6	—
Other	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Maternal and Child Health	—	22	—	—	—	3	9	—	3	2	—	—	—	—	—	—	—	1	—
Other Health Services	2	6	2	—	—	—	6	—	3	2	5	3	—	4	1	—	—	5	2
Mental Health	3	3	—	2	—	—	11	—	—	—	1	—	2	1	—	—	2	—	—
Health Education	—	—	—	—	—	—	3	—	—	—	—	—	—	1	1	—	—	—	—
Occupational Health	—	—	—	1	—	1	—	—	—	1	—	2	—	5	—	—	—	—	—
Nutrition	—	—	—	—	—	—	7	—	1	4	—	1	—	—	—	—	—	2	—
Health Statistics	—	—	—	—	—	—	2	—	1	—	—	—	1	—	—	2	—	—	—
Dental Care	—	—	1	1	—	—	4	—	4	—	—	—	—	3	—	2	—	—	—
Rehabilitation	—	—	—	—	—	—	—	—	2	1	—	—	—	—	—	—	—	—	—
Control of Pharmaceutical Preparatives	—	—	—	—	—	—	2	—	—	—	1	1	—	—	1	—	—	1	—
Communicable Diseases																			
Malaria	—	1	—	—	1	1	7	—	—	—	—	—	—	—	—	—	—	1	—
Tuberculosis	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Zoonoses	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Foot-and-Mouth Diseases	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leprosy	—	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Communicable Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Laboratory Services	—	3	—	—	—	2	7	—	2	2	—	9	—	1	1	1	—	—	1
Veterinary Public Health	—	3	—	—	—	3	8	—	9	7	3	1	—	8	3	5	—	3	—
Other	—	6	4	3	—	2	23	—	9	9	3	14	1	5	9	1	1	6	—
Medical Education and Related Sciences	—	8	—	—	—	2	3	—	11	—	1	31	1	14	8	2	—	12	3
Clinical Medicine	1	1	—	3	3	—	2	—	8	—	1	3	1	—	—	—	—	—	—
Total	**6**	**85**	**16**	**31**	**13**	**32**	**158**	**2**	**78**	**95**	**27**	**83**	**13**	**83**	**51**	**31**	**6**	**99**	**14**

— None.

Table 3. **Continued**

Field of study	Country of Origin of Fellows																	
	Haiti	Honduras	Jamaica	Mexico	Nicaragua	Panama	Paraguay	Peru	Saint Lucia	St. Vincent and the Grenadines	Suriname	Trinidad and Tobago	United States of America	Uruguay	Venezuela	British Territories	French Antilles, Guiana	Total
Health Organization																		
Public Health Administration	9	8	2	13	4	10	4	6	—	—	1	3	—	—	—	1	—	148
Hospital and Medical Administration	—	1	1	—	—	—	—	—	—	—	—	—	—	—	2	—	—	26
Other PHA Sub-fields	4	9	4	16	11	16	2	15	—	—	9	1	1	5	13	7	—	315
Sanitation																		
Sanitary Inspection	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	3
Sanitary Engineering	—	1	—	3	—	1	—	1	—	—	—	—	—	—	—	—	—	11
Other Specialized Fields	2	2	3	4	1	3	4	8	—	2	—	5	2	1	1	—	—	126
Nursing																		
Nursing Education	—	1	7	—	1	—	—	—	—	—	4	—	2	—	—	—	—	27
Public Health Nursing	—	—	1	—	—	—	—	—	—	2	—	—	—	—	—	2	—	14
Nursing Services	—	—	2	—	2	1	—	—	—	—	6	2	2	—	1	2	—	34
Other	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	3
Maternal and Child Health	—	6	1	3	3	7	4	15	—	—	—	—	1	1	2	—	—	83
Other Health Services	1	4	7	5	7	—	7	1	—	—	1	1	1	—	2	—	—	78
Mental Health	1	6	2	-	1	—	—	5	5	1	—	3	—	1	2	4	—	56
Health Education	1	—	—	—	14	—	—	—	—	—	—	—	—	—	1	—	—	21
Occupational Health	—	—	—	1	1	2	—	—	—	—	—	—	—	—	3	—	—	17
Nutrition	—	3	—	1	1	1	—	1	—	—	1	—	—	—	3	—	—	26
Health Statistics	1	2	—	4	2	4	2	2	—	—	—	—	—	1	4	—	—	28
Dental Care	—	2	—	1	2	1	—	3	—	—	—	—	1	—	3	—	—	28
Rehabilitation	—	—	1	—	1	—	—	—	—	—	1	—	1	—	2	—	—	9
Control of Pharmaceutical Preparatives	—	1	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	9
Communicable Diseases																		
Malaria	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—	1	15
Tuberculosis	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	—	—	4
Zoonoses	—	—	—	—	—	1	—	2	—	—	—	1	—	—	—	—	—	4
Foot-and-Mouth Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2
Leprosy	—	—	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—	8
Other Communicable Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Laboratory Services	—	3	3	8	3	3	—	2	—	—	3	—	—	3	5	1	—	63
Veterinary Public Health	2	5	—	8	6	8	1	7	—	—	—	2	—	1	3	—	—	96
Other	3	6	4	9	2	4	4	10	1	1	1	—	—	5	6	5	—	157
Medical Education and Related Sciences	1	7	4	4	9	6	1	4	—	—	—	—	7	6	6	—	—	151
Clinical Medicine	—	6	—	1	—	—	—	—	—	1	—	—	—	—	1	4	—	36
Total	25	73	45	84	73	69	30	84	7	7	27	18	18	25	62	27	1	1598

— None.

Educational Technology

1.54 An evaluation of the Latin American Center of Educational Technology for Health (CLATES) in Rio de Janeiro, carried out for the XX Pan American Sanitary Conference, demonstrated the significant role that that Center has played in its field. Promoting utilization of traditional processes and educational methods, facilitating training in modern technology, and encouraging innovations to make teaching and learning more efficient and effective—including development of methodologies and materials appropriate for all users—are among CLATES contributions. The greatest success of the Center may well be the degree of self-reliance achieved by the Nucleus for Educational Technology in Health (NUTES) in Brazil (counterpart of CLATES) and the existence of 23 other national centers that were established with the direct support of CLATES or based on its model. Since the CLATES objectives had been fulfilled, the XXIX Meeting of the PAHO Directing Council resolved to terminate the Center's program at year-end 1983 and to continue the Organization's support to NUTES and for educational technology activities at the regional and national levels.

Administration of Fellowships

1.55 The PAHO fellowships program continues to provide the financial and administrative means for nationals of Member Countries to further their academic development and obtain practical training in all fields of study and endeavor related to human health. Since the program's inception in 1946, fluctuations have appeared, but it has remained a strong, integral part of the Organization's total program promoting health in the Americas. During the year, the Organization published an evaluation of the PAHO fellowships program in the Caribbean (1970–1979), which showed that most of the fellows had returned to their countries and were working in the health field.

1.56 The number of fellowships awarded (1,598) in 1983 in the Americas (Table 1) exceeded the previous high set in 1979 (1,351). These awards represented 4,136 months and US$5,095,976 (Table 2), or an average cost of US$1,232 per month, 11% more than in 1982. An additional US$108,226 was used to extend awards made in previous years, for a total of US$5,204,202 obligated in 1983.

1.57 Of the fellowships awarded in 1983, those in public health administration and related fields rose to 31% from 25% in 1982. Communicable disease studies increased from 18% in 1982 to 20% in 1983. All of the others decreased—environmental health from 12% to 9%, nursing from 6% to 5%, maternal and child health from 7% to 5%, health services from 20% to 17%, medical education and related sciences from 10% to 9%, and clinical medicine from 3% to 2% (Table 3).

1.58 The percentage of fellowships awarded to teachers and administrators of educational institutions in the health fields remained at 8%. It is noteworthy that, although nursing as a field of study has dropped to an insignificant level, the number of nurses awarded fellowships increased from 164 in 1982 to 203 in 1983.

1.59 Group fellowship awards increased for the first time in a number of years from 28% in 1982 to 31% in 1983. Long-term fellowships decreased to 13%, resuming the downward trend broken slightly in 1982. Short-term fellowships remained almost the same, 55% in 1983 to 56% in 1982.

1.60 In 1983, 653 fellowships were awarded to women (41%). Although higher than 1982 (39.6%), the number has not attained the high of 1981 (43%). Efforts are being continued to encourage nomination of women for fellowships, particularly in administrative and educational fields (Table 4). In addition, a *Fellowships Analysis and Policy Report* in connection with the Five-Year Regional Plan of Action on Women in Health and Development (1981–1985) was prepared and distributed to all Member Governments. An evaluation of fellowships awarded to women from 1976 to 1980 was initiated, that will serve as a means of evaluating fellowships awarded to women during the five-year plan.

1.61 Within the subregions, places of study show that the proportion of fellows staying within Spanish America and Brazil for training increased from 69% in 1982 to 74% in 1983, an excellent growth of technical

Table 4. **Fellowships awarded to women in the Americas, by country of origin and field of study, 1983**

Country of origin of fellows	Field of study								
	Health organization	Sanitation	Nursing	Maternal and child health	Other health services	Communicable diseases	Medical education and related sciences	Clinical medicine	Total
Antigua and Barbuda	—	—	—	—	2	—	—	—	2
Argentina	8	2	7	6	2	8	5	—	38
Bahamas	5	—	1	—	2	3	—	—	11
Barbados	6	—	—	—	1	—	—	1	8
Belize	—	—	5	—	—	—	—	1	6
Bolivia	2	—	1	1	—	1	1	—	6
Brazil	24	2	—	4	10	14	—	1	55
Canada	—	—	2	—	—	—	—	—	2
Chile	9	2	2	1	3	4	2	3	26
Colombia	39	3	2	2	8	8	—	—	62
Costa Rica	2	—	—	—	4	—	1	—	7
Cuba	2	—	1	—	4	20	21	1	49
Dominica	1	—	4	—	1	—	—	1	7
Dominican Republic	10	4	1	—	8	4	4	—	31
Ecuador	1	4	3	—	1	4	1	—	14
El Salvador	1	2	2	—	2	1	2	—	10
Grenada	1	—	—	—	1	—	—	—	2
Guatemala	10	3	6	—	4	3	5	—	31
Guyana	4	—	—	—	3	1	1	—	9
Haiti	5	2	—	—	—	1	—	—	8
Honduras	6	1	1	2	10	7	1	2	30
Jamaica	4	1	9	1	9	5	3	—	32
Mexico	7	—	—	—	6	6	3	—	22
Nicaragua	7	—	4	2	12	5	—	—	30
Panama	8	1	1	4	2	3	2	—	21
Paraguay	1	—	—	4	8	3	—	—	16
Peru	4	4	—	6	3	5	3	—	25
Saint Lucia	—	—	—	—	1	—	—	—	1
St. Vincent and the Grenadines	—	—	2	—	—	—	—	—	2
Suriname	6	—	8	—	1	2	—	—	17
Trinidad and Tobago	1	1	2	—	2	1	—	—	7
United States of America	—	—	3	1	1	—	—	—	5
Uruguay	1	—	—	1	—	3	5	—	10
Venezuela	8	1	1	1	11	7	2	1	32
British Territories	6	—	5	—	3	2	—	3	19
French Antilles, Guiana	—	—	—	—	—	—	—	—	—
Netherlands Antilles	—	—	—	—	—	—	—	—	—
Total	**189**	**33**	**73**	**36**	**125**	**121**	**62**	**14**	**653**

— None.

cooperation among developing countries. On the other hand, the proportion of fellows remaining within the English/Dutch-speaking Caribbean for studying dropped from 62% in 1982 to 40% in 1983, reflecting a major reversal of the trend begun in 1976 under the Commonwealth Caribbean Project for Education and Training of Allied Health Personnel.

1.62 The number of fellows placed in the Americas by other WHO Regional Offices increased from 401 in 1982 to 446 in 1983. Africa continued its long-term trend with an increase of 31%, as did the Western Pacific

with a 19% increase and Southeast Asia with 14%. The others declined—the Eastern Mediterranean by 35% and Europe by 14%. There were no particularly remarkable changes in the pattern of fields of study, but Africa increased significantly the long-term fellowships, those over 6 months, and Southeast Asia made most of its increase in short-term fellowships.

1.63 Relatively few fellows went to other regions from the Americas. These included 135 to Europe, 4 to the Western Pacific, and 1 each to Africa, the Eastern Mediterranean, and Southeast Asia.

Health Education and Community Participation

1.64 The Organization provided technical cooperation during the year aimed at strengthening health education units, in Belize, British Virgin Islands, Dominica, Grenada, Saint Lucia, and Uruguay, including the drafting of written plans in several of those countries. El Salvador, Guatemala, Honduras, and Peru also received assistance to promote development of national health education services. Cooperation with Jamaica targeted strengthening the management and operation of the Health Education Bureau.

1.65 PAHO collaborated with WHO in preparing and implementing the 36th World Health Assembly Technical Discussions on "New Policies for Health Education in Primary Health Care" and in exploring development of collaborating centers in schools of public health in Brazil, Jamaica, and Puerto Rico. Case studies were conducted to review community participation strategies and experiences in urban and rural settings in Barbados, Brazil, Colombia, Costa Rica, Cuba, Ecuador, Guyana, Jamaica, and Mexico. In Ecuador, PAHO helped promote introducing health education information into the national adult literacy program, which is particularly effective in reaching the indigenous population. Active, ongoing community participation was a key factor in establishment of a health center in eight underserved urban communities surrounding Duhaney Park in Jamaica—a project that received support from PAHO, the United Nations Fund for Population Activities (UNFPA), and the Swedish Government.

1.66 The Organization provided cooperation to Jamaica in developing a national strategy for training health personnel and community members. In Mexico, assistance was given to the Social Security Institute to develop a plan for community participation in health, to be tested in a pilot district and eventually applied throughout the country. PAHO and the University of São Paulo, Brazil, helped Uruguay design a national training program for health education auxiliaries. Representatives of ministries of health and women's organizations from throughout the Region met in Washington, D.C., in April to develop strategies to integrate primary health care into the activities of women's organizations.

1.67 Strengthening of health education at schools is a principal concern of the Eastern Caribbean countries, and technical advisory services were rendered to Antigua, Dominica, Grenada, St. Kitts, Saint Lucia, and St. Vincent and the Grenadines in reviewing and implementing health and family life education curricula in schools. An intercountry survey was undertaken to assess the status of health and family life education in teachers' colleges in the Eastern Caribbean, and PAHO, USAID, and the University of the West Indies (UWI) hosted an intercountry workshop on the subject in that area. PAHO and UWI also collaborated in developing and distributing 10 new health readers for testing and use in primary schools in nine countries.

1.68 A list of producers of educational audiovisual materials related to primary health care subjects was developed, with special emphasis on those in Spanish. PAHO also assessed the health education and community participation components of UNFPA-funded projects on maternal and child health/family planning in Bolivia, Brazil, Guatemala, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, and Peru; representatives from those countries met in Washington, D.C., in December to discuss the results of the assessment and make recommendations to improve the situation.

1.69 A course in marketing approaches was held by PAHO and CLATES/NUTES to train health educators working in diarrheal disease control programs from 10 countries. Small projects developed in each of these countries were then reviewed and supported by PAHO. Follow-up activities, including a second workshop for the original 10 countries, are planned for 1984. The Caribbean Food and Nutrition Institute (CFNI) and the Institute of Nutrition of Central America and Panama (INCAP) have developed work plans that emphasize nutrition education.

Environmental Health

Drinking Water Supply and Excreta and Wastewater Disposal

1.70 Access to drinking water supplies and adequate sanitation is one of the principal targets of the Regional Plan of Action and represents the primary goal of the International Drinking Water Supply and Sanitation Decade (IDWSSD), which focuses particular attention on the least privileged groups in periurban and rural areas.

1.71 Data obtained in 1980 for the purpose of establishing a baseline to monitor the International Decade in 21 countries and territories—which total 333 million inhabitants or 95% of the population of Latin America and the Caribbean—show that:

1.72 Of 218 million urban inhabitants in those 21 countries, 170 million (78%) had access to drinking water through house connections or public sources at a distance no greater than 200 meters from their place of residence.

1.73 Of 115 million inhabitants in rural areas (defined differently in each of the countries, with limits of from 100 to 5,000 inhabitants), 48.7 million (42.2%) had access to drinking water.

1.74 Sewerage and sanitary excreta disposal services were provided to 56.3% of the urban and 12.7% of the rural population.

1.75 Following guidelines set forth for the Decade, technical cooperation with the countries during the year emphasized planning for drinking water and sanitation. The cooperative program between the Agency for Technical Cooperation of the Federal Republic of Germany (GTZ) and PAHO/WHO targeted development of national plans in Bolivia, Haiti, Honduras, and Paraguay. As a result, some projects were identified in Haiti, and the World Bank was to finance one aimed at improving the drinking water supply of Port-au-Prince, while GTZ and WHO collaborated in defining a pilot rural water supply project in a selected area that would serve for the extension of services to the rest of the country. In Bolivia, a project to provide rural drinking water services and sanitation in the Department of Oruro was identified and presented for consideration of funding by the German Development Bank (KfW). The Decade plan prepared by Guatemala identified a number of necessary water supply projects, some of which the World Bank expressed interest in supporting. Peru initiated planning for the drinking water and sanitation sector, with cooperation from GTZ and PAHO, and held the first National Seminar on Planning for Basic Sanitation. The Second Advisory Meeting of the Hipólito Unanue Agreement, held in Caracas in September, recommended support for the preparation and development of national Decade plans and the strengthening of actions to improve water supply and sanitation.

1.76 An additional phase of GTZ/PAHO cooperation in rural water supply and sanitation system construction focused on evaluation of sector plans and prospects for their execution given current economic and financial constraints in most of the countries, as well as on support to Bolivia, Haiti, Honduras, and Peru in formulating projects to be submitted for external financing; for this phase, which will continue in 1984–1985, GTZ contributed about US$270,000. GTZ and PAHO signed an agreement to develop a three-year project for training intermediate-level personnel in water supply and sanitation programs in Central America and the Dominican Republic, with GTZ contributing US$485,000; the Inter-American Development Bank (IDB) had already signed an agreement to participate in that initiative. A survey of drinking water

and sanitation sector needs in the countries of the Eastern Caribbean served as a basis for making an inventory of proposals for financing during the Decade. A cooperative agreement between IDB and PAHO led to the identification of project proposals in Costa Rica and Honduras, that would be considered for financing by IDB. PAHO and the Caribbean Development Bank (CDB) organized and sponsored a Caribbean meeting on financing of the drinking water and sanitation sector, with participants from 17 countries and territories and from bilateral and multilateral agencies.

1.77 PAHO collaborated with USAID in providing assistance to Ecuador in matters related to water supply following the floods that occurred in that country at the beginning of the year. Advisory services were provided to Brazil, Chile, and the Dominican Republic on their respective national plans for water fluoridation. A workshop held in Washington, D.C., in December, on the transportation and international disposal of sludge, evaluated the potential risks to environmental health posed by sludge as compared to the benefits it offers for agriculture.

1.78 The Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS), in Lima, Peru, continued to implement four regional programs in the area of water supply and excreta disposal, each of which included components of human resource development, technology and research, information, and direct technical cooperation: technical and institutional development of rural water and sanitation agencies; improvement of the quality of water for human consumption; extension of coverage through reduction of unaccounted-for water losses; and low-cost technology for wastewater collection and disposal in urban, marginal, and rural areas. Details of these regional programs appear in Chapter 3. "Mobilization of Technical and Financial Resources."

Solid Waste Management

1.79 Solid wastes continue to be a serious problem in the countries—particularly in cities and, within these, in poor slum areas where in most cases no appropriate systems exist to meet the challenges posed by the ever-increasing generation of refuse, the amount of which is expected to triple between now and the year 2000. Moreover, industrialization has resulted in the inadequate disposal of special and dangerous wastes that represent a potential risk for health. PAHO technical cooperation in this area concentrates on formulating national policies, plans, and programs for the management of solid wastes; identifying and formulating public sanitation projects for metropolitan areas and cities; preparing guidelines and criteria; developing human resources; and cooperating in technology and research in the countries.

1.80 Promotion of national planning was exemplified by Bolivia, which began to prepare its plan, and Brazil which drafted national guidelines for urban sanitation. PAHO collaborated with Colombia and Peru in formulating and promulgating regulations and laws concerning solid wastes and urban sanitation, which stress community participation and the organized recovery of some trash—such as paper and glass—aimed at reducing the amount of refuse to be collected and saving energy through recycling.

1.81 In the identification and formulation of projects and the improvement of urban sanitation services, PAHO has collaborated with Guatemala to improve the public sanitation service of Guatemala City—an effort that includes market sanitation, collecting sizable amounts of refuse from public thoroughfares, transforming the present open dump into a sanitary landfill, mounting a system for equipment maintenance, and strengthening and developing the service itself. In El Salvador cooperation with the Sanitation Service of Metropolitan San Salvador has already resulted in improvement of that city's sanitary landfill. Collaboration in Panama targeted the final study, design, and future implementation of Panama City's sanitary landfill. In Peru, an urban sanitation project was reviewed for the city of Chimbote. Improvement of solid waste management was the focus of cooperation with the Caribbean islands of Antigua, Dominica, Grenada, and St. Vincent and the

Grenadines, where health authorities are encouraging the municipalities to develop their urban sanitation agencies technically, administratively, and financially through the identification, formulation, and execution of specific projects.

1.82 The development of technology and research has been a major cooperative effort in the area of solid waste management. A public sanitation project was prepared for El Alto, a satellite city outside La Paz, Bolivia, that involved special technological solutions owing to its marginal urban nature, topographical and geological characteristics, the altitude, and climate. Promotion and support of applied research continued in respect to: acquisition and use of methane gas from sanitary landfills as fuel for diesel vehicles, with experiences in Brazil and Chile; use of mechanical agricultural equipment in smaller sanitary landfills in Chile and Mexico; studies on percolated liquids in Mexico; selective collection of solid wastes in Brazil; and social research on participation of women in the public sanitation services of Bolivia. Other areas of promotion aimed at including technological development and research in national plans for solid wastes as a means of improving technical and economic effectiveness in the management of the respective services, identifying priority areas for research, holding meetings for exchanges on technological progress and achievements, promoting horizontal cooperation between agencies that carry out these actions, and disseminating the findings and results obtained.

Sanitary Control of Housing

1.83 The adequate sanitation of human settlements is a major influence on the health and well-being of people. In the large cities of the Americas, it is common to find settlements located in the interior of the cities, where the housing is deteriorated. Settlements in marginal urban areas are built without any regard for even the most elementary standards of safety and access to basic public services. These areas are characterized by trash accumulated along the public thoroughfares, stagnant wastewater, and lack of police protection.

1.84 In the interest of cooperating in the improvement of housing conditions, PAHO brought together at CEPIS in 1983 a group of professionals with experience in the field of housing, for the purpose of analyzing and discussing the sanitary aspects of housing in the human settlements of Latin America and the Caribbean and of recommending a plan of action for the countries. Subsequently, the Organization's technical cooperation was to concentrate on promoting the improvement of housing sanitation; establishing intersectoral and institutional linkages; formulating guidelines for minimum sanitary aspects; strengthening community participation, especially through mutual assistance and self-help; proposing sanitary solutions for temporary human settlements; and developing human resources.

Prevention and Control of Environmental Pollution

1.85 Industrialization, the modernization of agriculture, and accelerated urbanization in the countries of Latin America and the Caribbean have contributed to increasing deterioration in the quality of the environment. The location of most industrial complexes in or near large cities, and frequently along the coast, constitutes a major threat to human health and the ecology. The utilization of fertilizers, pesticides, and herbicides as means of increasing agricultural productivity has had a detrimental impact on the environment. The inappropriate disposal of domestic wastewater continues to be a principal cause of water pollution. In these and other ways, the interaction of environmental pollution with the population is giving rise to serious risks to human health. In view of this situation, PAHO technical cooperation aimed to promote the prevention and control of environmental pollution.

1.86 In the summer of 1983, an evaluation was carried out of the Pan American Center for Human Ecology and Health (ECO) that entailed a review of the Center's program and visits to a number of countries to determine the needs and perspectives for cooperation in the areas under ECO's responsibility. It concluded—and the Directing Council subsequently

recommended—that the Center should concentrate on providing information, advisory services, and technical cooperation in the areas of toxicology, environmental epidemiology, and the safe use of pesticides in light of the growing health problems in the Region caused by the effects of industrialization, including agroindustry. It was recommended that the Center act through national institutions and strengthen them in a manner conducive to the development of national self-reliance; promote and coordinate research projects through a network of collaborating national institutions; and develop an effective information system through greater integration with the Pan American Network of Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA). The activities of ECO in 1983 are detailed in Chapter 3. "Mobilization of Technical and Financial Resources."

Development of Environmental Health Institutions

1.87 Extension of service coverage and optimization of the installed capacity of environmental health institutions require that their managerial and operational functions and their human resources be developed and strengthened. Toward that end, PAHO cooperation included holding two subregional workshops on implementation of water supply and sanitation information systems for the process of evaluation and monitoring of the IDWSSD/HFA-2000 aimed at strengthening national information systems; developing the countries' capacity for analysis, decision-making, and management; and laying the groundwork for PAHO technical cooperation in support of national efforts. The first workshop was held in Panama City in July, in collaboration with the National Water Supply and Sewerage System Institute of Panama (IDAAN), with 29 participants from Costa Rica, Dominican Republic, Guatemala, Honduras, Nicaragua, and Panama in attendance. The second was held in Bogotá, Colombia, in October-November, with the support of the Ministry of Public Health and of the National Planning Department (DNP), with 41 participants from Argentina, Bolivia, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela.

1.88 In collaboration with the Economic Development Institute (EDI) of the World Bank, and with the sponsorship of the Secretariat of Urban Development and Ecology (SEDUE) and the Ministry of Agriculture and Water Resources (SARH) of Mexico, a seminar on Planning of Drinking Water and Sanitation Systems, with 45 participants from Dominican Republic, Ecuador, Mexico, and Nicaragua, was held in Mexico City in November, to discuss concepts and methodologies for planning drinking water and sanitation projects, including analysis of the technical, economic, financial, institutional, and human resource aspects. PAHO collaborated with Argentina and Ecuador in holding seminars on managerial development that targeted the development of sector institutions and their human resources. As a result of the latter seminar, the Ecuadorian Institute of Sanitary Works (IEOS), with PAHO collaboration, prepared a proposal for technical cooperation in that Institute's development, which is to be presented to the World Bank for financing. During the year, Brazil concluded the diagnostic stage of its project for evaluating the operational portfolio of the financial system for sanitation (COSAN) of the National Housing Bank (BNH), which will serve as the basis for improving the financial system's capacity for information, evaluation, contracting, and supervision, and which is supported by the National Sanitation Plan (PLANASA). A PAHO/BNH evaluation of their technical cooperation agreement to implement the program for institutional development of drinking water and sanitation agencies (PRODISAN)—which served as a conduit for an expected US$68 million of BNH's resources during 1983—concluded that PLANASA's efforts should be continued, strengthened, and reoriented to accelerate institutional development of state water and sanitation agencies so as to lower operating costs and attain the goals of the Decade.

1.89 An agreement was signed with the Dominican Republic for institutional development of the National Drinking Water

and Sewerage Institute (INAPA), which includes a human resource development component and is to be financed as part of a loan from the IDB to INAPA. A technical cooperation project with the National Water and Sewerage Institute (INAA) of Nicaragua, that included operation of water distribution networks and design and operation of drinking water treatment plants, came to a close; a second project was carried out to develop the national water rate system of Nicaragua, under the responsibility of INAA and financed as part of a loan from the World Bank. In Paraguay technical cooperation to execute the investment program in the area of water supply to rural communities of the National Environmental Health Service (SENASA), financed by the World Bank, continued the activities programmed for strengthening the operating and managerial capacity of SENASA.

Chapter 2. Development of Health Programs

2.1 The governments of the countries of the Americas, on agreeing to the Regional Strategies and the Plan of Action for attaining the goal of Health for All by the Year 2000, adopted minimum regional goals and objectives, included among them that:

> No country in the Region will have a life expectancy at birth of less than 70 years.
>
> No country in the Region will have an infant mortality rate of more than 30 deaths per 1,000 live births.
>
> No country in the Region will have a mortality rate higher than 2.4 deaths per 1,000 in children aged 1–4 years.

2.2 The level of health and the health structure of communities are conditioned not only by efforts to extend health service coverage and to protect the environment but also by socioeconomic and political factors. An analysis of the situation in the developing countries of the Americas in respect to the minimum regional goals, undertaken in 1983, reveals some important findings.

2.3 **Life expectancy at birth.** Table 5 shows life expectancies at birth for 34 countries and other political units of Latin America and the Caribbean, which represent 99.8% of the population. Twelve countries and political units (7.1% of the population) have attained the minimum regional goal of a life expectancy of 70 years or more. Eleven (35.1% of the population) have values ranging from 65.0 to 69.9 years. Six countries (47.9% of the population) show life expectancies between 60.0 and 64.9 years. Only five countries (9.7% of the population) have values lower than 60 years; of these, two have values between 50 and 53 years, and the other three have values higher than 57.

2.4 **Infant mortality.** Table 6 shows data on infant mortality in 44 countries and other political units of Latin America and the Caribbean, which represent 99.9% of the total population. Eighteen countries and political units (5.7% of the population) have attained the regional goal of reducing infant mortality to rates of less than 30 deaths per

Table 5. **Life expectancy at birth in Latin America and the Caribbean, 1980–1985***

Life expectancy at birth	Number of countries/ political units	Population (*in thousands*)	
		Number	%
70 or more	12	25,868	7.1
From 65.0 to 69.9	11	127,543	35.1
From 60.0 to 64.9	6	174,141	47.9
Less than 60	5	35,428	9.7
Total	**34**[a]	**362,980**	**99.8**

*Source: *World Population Prospects as Assessed in 1980.* ST/ESA/SER.A/78. United Nations, New York, 1981.
[a]12 others had no available data.

Table 6. **Infant mortality in Latin America and the Caribbean, 1980–1985***

Rate per 1,000 live births	Number of countries/ political units	Population (*in thousands*)	
		Number	%
Less than 30.0	18	20,704	5.7
From 30.0 to 39.9	8	21,207	5.8
From 40.0 to 49.9	5	42,202	11.6
From 50.0 to 69.9	5	108,829	29.9
From 70.0 to 79.9	3	135,138	37.2
From 80.0 to 99.9	3	24,049	6.6
100.0 or more	2	11,379	3.1
Total	**44**[a]	**363,508**	**99.9**

*Source: *World Population Prospects as Assessed in 1980.* ST/ESA/SER.A/78. United Nations, New York, 1981.
[a]2 others had no available data.

1,000 live births. Eight countries (5.8% of the population) are near the goal with rates between 30.0 and 39.9. Five countries (11.6% of the population) show rates between 40.0 and 49.9. Another five countries (with 29.9% of the population) have rates between 52 and 68 per 1,000 live births, and eight other countries (with almost half of the population, 46.9%) show rates between 71 and 124 per 1,000 live births; of the latter, only two countries have rates higher than 100. These data indicate that more than three-fourths of the population of Latin America and the Caribbean live in socioeconomic conditions that result in infant mortality rates higher than 50 per 1,000 live births. Considerable progress must be made, therefore, to attain the regional goal.

2.5 **Mortality in children 1–4 years of age.** Table 7 shows data for 36 countries and other political units of Latin America and the Caribbean, which represent 96% of the total population. Nineteen countries (21.1%) have attained the goal of reducing the death rate in children 1–4 years of age to rates lower than 2.5 per 1,000 children in this age group. More than half the population of Latin America and the Caribbean (56.4%) lives in 10 countries with death rates of from 2.5 to 3.9 per 1,000 children 1–4 years of age. The rest (18.5%) in seven countries, register death rates from 4.0 to 12.4 per 1,000 children 1–4 years of age. The ranking of the countries in regard to mortality rates in children 1–4 years of age does not coincide with the order for infant mortality or life expectancy.

2.6 This information is of a preliminary nature and therefore subject to subsequent adjustments. To a great extent, nevertheless, it represents the baseline for national and regional monitoring and evaluation for

Table 7. **Mortality in children 1–4 years of age in Latin America and the Caribbean, around 1980***

Rate per 1,000 children	Number of countries/ political units	Population (*in thousands*)	
		Number	%
Less than 1.0	6	761	0.2
From 1.0 to 1.4	6	27,224	7.5
From 1.5 to 2.4	7	48,825	13.4
Total under 2.5	**19**	**76,810**	**21.1**
From 2.5 to 3.9	10	205,042	56.4
4.0 or more	7	67,308	18.5
Total	**36**[a]	**349,160**	**96.0**

*Source: *World Population Prospects as Assessed in 1980.* ST/ESA/SER.A/78. United Nations, New York, 1981.
[a]10 others had no available data.

attainment of the world goal. An important condition is imposed on that evaluation by the regional objectives agreed upon in that they require not only that the levels of health and well-being be raised but also that a just distribution of social benefits be achieved. Accordingly, evaluation should not only be made in terms of national health level averages but also in terms of the extent that differences are reduced in the levels of health and well-being of the population in general and of certain priority population groups who live in less satisfactory conditions.

2.7 In accordance with the classification of programs adopted by the PAHO/WHO Governing Bodies, this Chapter consists of two main sections: health promotion and care, and disease prevention and control. It is important to emphasize that the new PAHO Management Strategy considers research to be an essential component of all the technical cooperation programs of the Organization. This strategy also qualifies the Pan American Centers as fundamental and inseparable resources of the corresponding regional programs. Nevertheless, research and the Centers are also basic factors in the generation, dissemination, and application of knowledge. For this reason, the respective activities are analyzed under Chapter 3. "Mobilization of Technical and Financial Resources."

Health Promotion and Care

2.8 The Organization cooperates with the countries in their efforts to raise levels of health in the communities through the solution of fundamental problems such as those of food and nutrition, and health care for priority groups in the population, as well as by means of improving mechanisms of diagnosis, treatment, and rehabilitation.

Food and Nutrition

2.9 PAHO cooperated in the development of national strategies and broad-based programs in the area of food and nutrition, specifically, the analysis of problems and their causes, from both the environmental and institutional points of view, in order to ensure the adequate availability, consumption, and utilization of basic foods for the entire population, through incentives for production, development of efficient distribution systems, and improvement of dietary habits. By emphasizing the primary health care approach, targeting priority groups—particularly low-income populations and mothers and children—and developing preventive and rehabilitative actions, the aim has been to reduce and control the most prevalent problems—protein-energy malnutrition, iron-deficiency anemia, hypovitaminosis A, and endemic goiter—and to address other health problems related to inadequate dietary practices—obesity, diabetes, arteriosclerosis, arterial hypertension, and certain forms of cancer. This program area included resources and contributions from the Institute of Nutrition of Central America and Panama (INCAP) and the Caribbean Food and Nutrition Institute (CFNI), whose activities appear in Chapter 3. "Mobilization of Technical and Financial Resources."

2.10 In the area of developing policies and strategies on food and nutrition, PAHO collaborated with Brazil, specifically the National Institute of Food and Nutrition and the National Center for Human Resources of the Ministry of Planning, in initiating an evaluative study of two programs of food distribution to low-income urban populations—the program for the supply of basic foods and the program for nutrition in health. The study results will make it possible for the Organization to collaborate with other countries in reviewing their strategies, policies, and programs for improving consumption of basic foods through subsidies and/or transfers of food to poor populations and high-risk nutritional groups. PAHO participated in the consultative meeting of Food and Agriculture Organization (FAO) experts, held in Bogotá in April, on intensive urbanization and its repercussions on food and nutrition in Latin America.

2.11 In the area of research, study of the progress achieved in infant feeding through encouragement of breastfeeding and application of the International Code on Marketing of Breast-Milk Substitutes revealed the need for increased use of these

approaches in the countries. PAHO collaborated with the National Institute of Nutrition of Mexico, the Department of Medicine of the University of the West Indies in Jamaica, and the Department of Nutrition of the School of Medicine of Ribeirão Prêto, Brazil, in conducting field tests of a methodology for the study of contrasting communities under the program for the contribution of dietary and pharmacological intervention in the prevention and control of chronic cardiovascular diseases. The V Meeting of the PAHO/WHO Technical Group for Control of Endemic Goiter and Cretinism was held in Lima, Peru, for the purpose of examining the current status of research on these problems, as well as the diagnosis, prevention, and control of endemic disease; it included participants from countries where the problem is still highly prevalent and salt iodization programs are not effectively controlled. The PAHO/WHO-supported project for action-oriented research in nutrition (Guayabal de Síquima, Colombia), made it possible to identify gaps in the training of primary health care workers, revise the content and methods of training programs, and incorporate appropriate methodologies for diagnosis and surveillance of the nutritional status of children, dietary and nutritional education, and integration of these activities into maternal and child health care at the community level.

2.12 Collaboration with the World Food Program (WFP) involved analysis of new projects for dietary assistance in support of national health programs, rural development, community participation, and basic food production; in addition, joint WFP/PAHO missions evaluated a number of ongoing projects. A Joint WHO/UNICEF Nutritional Support Program was initiated with financial assistance from the Government of Italy. PAHO collaborated with the authorities of Dominica, Haiti, Nicaragua, Peru, and St. Vincent and the Grenadines in the preparation of preliminary proposals for the development of five-year projects (1984–1988), aimed at strengthening comprehensive, multisectoral activities in food and nutrition, based on the primary health care strategy. Within the Joint WHO/UNICEF Program, a five-year program (1983–1987) was approved that is to channel US$1 million for the eradication of endemic goiter and cretinism in the Andean area countries and was initiated in Bolivia, where the Government will install several salt iodization plants and promote organization of small producer cooperatives.

2.13 A subregional seminar on the teaching of food and nutrition education in the Schools of Nutrition and Dietetics of Latin America was held in Barranquilla, Colombia, with professors from 10 universities of Argentina, Bolivia, Colombia, Mexico, and Peru participating. A PAHO multiprofessional group met to review the Organization's strategies in support of community food and nutrition education and formulated a medium-term workplan. PAHO published the Spanish version of *WHO Guidelines for the Teaching of Nutrition to Community Health Workers* as part of its Scientific Publication series.

Maternal and Child Health and Family Planning

2.14 One of the most important problems of the Region is the health of children and women of childbearing age, who are a priority group in that they represent around 70% of the population in most of the countries and are particularly vulnerable to diseases, their sequelae, and death. Although most of the countries have registered declines in death rates for mothers, infants, and children 1–4 years of age, problems still persist, as a consequence of adverse social, economic, cultural, and environmental conditions. During 1983, fertility rates continued to decline, but they remained high for many of those who have problems getting access to services. PAHO cooperation in this area emphasized generation and dissemination of knowledge about the problems, extension of coverage of services to mothers and children, and adaptation of services to the needs and particular characteristics posed by human reproduction, growth, and development.

2.15 A 10-country study of the status of health education and community participation in maternal and child health care programs was the subject of analysis and

the basis for formulation of short- and medium-term strategies at a regional meeting of directors of maternal and child health care programs and projects and directors of health education and community participation programs, held in Washington, D.C., in December. PAHO/WHO and the United Nations Fund for Population Activities (UNFPA) sponsored four subregional workshops during the year (one in Argentina, one in Costa Rica, and two in Brazil) on the risk approach in maternal and child health, which resulted in the training of more than 100 national and PAHO staff. This WHO-developed approach is being modified to reflect realities and experiences of the countries of Latin America and the Caribbean and the operational concept of primary health care adopted by the Region. PAHO/WHO has supported national research resulting from those workshops and undertaken in Brazil, Cuba, Jamaica, Mexico, and Nicaragua. Similarly, PAHO/WHO/UNFPA have funded continuation of risk studies in Argentina, Barbados, and Saint Lucia.

2.16 The International Conference on Early Identification of Risks in the Child—organized by the Rocky Mountain Center for Growth and Development of Denver and sponsored by PAHO/WHO, the Grant and Kellogg Foundations—was held in Aspen, Colorado (USA) in September; it presented and discussed the latest knowledge and experience regarding studies to identify children at risk of suffering alterations in their psychoneurological and motor development, with participants from 30 countries including Argentina, Bermuda, Brazil, Canada, El Salvador, Mexico, and the United States. Activities are being carried out to establish a regional network of institutions involved in child growth and development that would consist of the three PAHO/WHO Collaborating Centers designated in this area—the Institute of Health Development in Havana, Cuba, the Institute for Research on Nutrition and Child Health in Mexico, and the Specialized Hospital of the Area of La Plata, Argentina—as well as other institutions in the Region, such as the Children's Institute in São Paulo, Brazil, the Center for Special Education and the Children's Hospital of Panama, and the Health Program of the Department of Valle del Cauca in Cali, Colombia.

2.17 Cooperation in the area of health of schoolchildren included compiling a bibliography and analyzing country activities for the purpose of planning future collaboration.

2.18 The health of adolescents continued to be the subject of technical cooperation, as was the case of collaborative activities initiated in Brazil, Cuba, Jamaica, Mexico, Panama, and Venezuela in support of the International Year of Youth in 1985. The sexual and reproductive behavior of adolescents was given special importance, in light of the sociocultural and health problems of teenage pregnancy.

2.19 The dissemination of information on maternal and child health to enable the countries to assess, adjust, or reformulate their family care strategies targeted the exchange of existing information in this field, particularly regarding national experiences gained in the Region. A record of such experiences was compiled and was to be published under the title *Maternal and Child Health: Facts and Trends*. PAHO and the University of North Carolina (USA) collaborated on bibliographic research on the subject of health, population, and family planning in Latin America, and its results were to be published in 1984. Also published were Spanish translations of the WHO Technical Reports on oral contraceptives, intrauterine devices, and injectable hormones.

2.20 Cooperation in training in maternal and child health and family planning included continued support of regional courses given in Buenos Aires, Argentina; Cali and Medellín, Colombia; Santiago, Chile; Havana, Cuba; and the Latin American Center for Perinatology and Human Development, as well as the previously mentioned risk-approach workshops. Country and regional projects funded by UNFPA, the Kellogg Foundation, WHO, PAHO, and others have resulted in the training of over 10,000 lay midwives, community agents, nursing auxiliaries, laboratory technicians, nurses, physicians,

specialists, and administrators. PAHO collaborated in 18 Kellogg Foundation-financed projects for integrated education and services with emphasis on maternal and child health in Argentina, Brazil, Colombia, Dominican Republic, Ecuador, Mexico, Paraguay, and Peru; a meeting held during the year to evaluate those projects concluded that they contributed to strengthening maternal and child health care programs in the countries, adapting manpower training, and developing technologies appropriate to different local situations.

2.21 Direct technical cooperation through country and intercountry activities and resources included support of project design, negotiation and execution, continuous monitoring and evaluation, development of information systems and operations research, training of human resources, and provision of equipment and supplies. The Latin American Center for Perinatology and Human Development carried out 40 missions in the field of standardization, perinatal records, and organization of care by levels of risk. PAHO was executing agency for 24 country and three regional UNFPA-financed projects, which combined exceeded US$7.6 million, aimed at extending coverage to unprotected groups, improving the quality of comprehensive services, increasing knowledge of maternal and child health and its determinants, and selecting the most effective types of intervention; countries and territories benefitting from these projects were Antigua, Barbados, Belize, Bolivia, Brazil, the British Virgin Islands, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Paraguay, Peru, St. Kitts-Nevis, Saint Lucia, St. Vincent and the Grenadines, and Uruguay.

2.22 In addition to its important relationship with UNFPA, PAHO coordinated and collaborated with a number of other international and bilateral cooperation agencies, included among them the International Institute of the Child in Paris, the Inter-American Children's Institute in Montevideo, the Inter-American Commission of Women, and the Organization of American States (OAS). Named to the Executive Committee of the 1984 International Population Conference, organized by the Economic Commission for Latin America (ECLA) and the Population Division of the United Nations, PAHO attended preparatory meetings held in Cuba in November.

Workers' Health

2.23 Technical cooperation in the area of workers' health was expanded from the traditional approach of identifying and controlling occupational hazards in work areas to the strategy of focusing on workers as a group in the community and on the integrated delivery of health services. This strategy aims to protect, on a priority basis, those still underserved by occupational health programs: workers in small companies, agricultural workers, workers in the informal sector, migrants, temporary workers, women of childbearing age, and working minors and children. A consultative group of experts from Brazil, Canada, Colombia, Mexico, the United States, and Venezuela, meeting in Washington, D.C. in August, examined the strategy, defined doctrinary bases and mandates, analyzed the current status of workers' health in the Americas, identified possible actions for the health sector in this field, and defined the program objectives and content for the workers' health program, as well as relations with other PAHO technical cooperation programs.

2.24 Linkage with national institutions was promoted as the basis for establishing a network of cooperating centers in the Region, for which purpose contacts were reactivated with the Department of Occupational Health of the Institute of Public Health of Chile, in Santiago, a long-standing center for the training of human resources in this field; the Institute of Occupational Health of Cuba, in Havana; the National Institute of Occupational Health of Bolivia, in La Paz; the Bureau of Occupational Health and Environmental Laboratories of Peru, in Lima; the Occupational Health Nucleus of the National Public Health School, University of Antioquia, in Medellín, Colombia; the National School of Public Health, in Rio de Janeiro, the Department of Preventive and

Social Medicine of the State University of Campinas, and the Jorge Duprat de Figueiredo Foundation of Safety and Occupational Health in São Paulo, Brazil. The training of health personnel in occupational health in both health ministries and social security institutes, as has been the case in Colombia, appears to be becoming a trend in the Region, and for that reason was selected to be the subject of a forthcoming PAHO-sponsored regional seminar-workshop. Of related interest, Colombia created an Interinstitutional Committee on Occupational Health during the year as an instrument for facilitating coordination of activities carried out in this field by different agencies, especially the Ministry of Health, the Social Security Institute, and the Ministry of Labor. Similarly, in Venezuela, the Interinstitutional Committee on Occupational Respiratory Diseases was to become a mechanism for coordinating occupational health activities carried out by different institutions, while the Ministry of Health and Social Welfare and the Venezuelan Social Security Institute were collaborating in occupational health training activities, in cooperation with the School of Malariology and Environmental Sanitation in Maracay and the School of Health Sciences of the University of Carabobo (Aragua Nucleus), among others. In the Dominican Republic, the Social Security Institute stepped up efforts to develop occupational health programs based on a concept of clearly defined interinstitutional coordination. Chile promoted occupational health in the health regions for workers and companies not covered by the "mutual" system (a cooperative, privately run system regulated by the State). Bolivia prepared to introduce similar activities into the health programs of the Ministry of Social Service and Public Health, supplementing those of the Social Security. Some states in Brazil are also doing so on an experimental basis. In conjunction with the efforts of PAHO in this direction, the Hipólito Unanue Group convened the IV Meeting of its Advisory Committee on Occupational Health in Bogotá in November, to analyze, discuss, and promote these new approaches to workers' health in the Andean area.

2.25 In Bolivia PAHO collaborated in an IDB-financed study of the problem of silicosis, in a review of the problem of pesticide intoxication of agricultural workers, in a detailed proposal for an epidemiological surveillance system, and in an analysis, together with the Institute of National Occupational Health, of the technical cooperation plan for 1984–1985. In Colombia PAHO provided advisory services to the Colombian School of Medicine on structuring a graduate-level occupational health curriculum, assistance to the Center for Health Administration Education course on occupational health, and collaboration in promotion activities of the Institute of Social Security with occupational health personnel in Barranquilla, Bogotá, Cali, and Medellín. In Cuba areas for future PAHO cooperation in workers' health were identified, as were areas in which the Institute of Occupational Health and the Ministry of Public Health's Department of Care for the Worker can offer cooperation in the Region. In Peru PAHO assisted the Ministry of Health's General Bureau of the Environment in evaluating and reformulating occupational health programs. Brazil, Costa Rica, Dominican Republic, Mexico, and Venezuela received PAHO advisory services in human resource development activities in occupational health. Finally, the Organization collaborated with the International Development Research Center (IDRC) of Canada in a seminar-workshop on occupational health research in Latin America and the Caribbean, held in Bogotá, in November-December.

Health of the Elderly

2.26 Changing social and epidemiological conditions and circumstances in the countries of the Region have dictated that the governments and PAHO pay greater attention to the specific needs and problems of the elderly, which in turn has required that information be collected to determine the need for establishing adequate health service programs. The Organization attended to requests from the countries for technical cooperation in evaluating existing programs for protection for the elderly, recommending specific actions (Barbados,

Chile, Colombia and Costa Rica), and providing orientation and technical support in activities to train personnel in gerontology (Cuba). PAHO, together with the Institute of Gerontology of Wayne State University (Detroit, Michigan), completed preparation of a study protocol on the needs of the elderly aimed at obtaining the basic information necessary for structuring the corresponding medical and social programs. The study—to be conducted in 1984 in Argentina, Barbados, Chile, Colombia, Costa Rica, Cuba, El Salvador, Guyana, Honduras, and Jamaica, with the financial assistance of the United Nations Trust Fund—was discussed at a meeting in Washington, D.C., in December, by 30 representatives from those countries, the Advisory Committee of the PAHO Program for the Health of the Elderly, and several institutions concerned with gerontology.

Health of the Disabled

2.27 The Organization continued to collaborate with the countries in the preventive and care programs for the disabled. At the request of the Government of Brazil, an analysis was carried out of the situation of disabled schoolchildren in Belo Horizonte that was expected to result in the design of a comprehensive program. Plans were completed and preliminary activities performed in connection with studies to be conducted in 1984 for the establishment of community-based rehabilitation services in Mexico City; in Jujuy and La Rioja Provinces in Argentina; and in Santiago, Chile; that project was to involve training community health workers in simple rehabilitation. For that and similar activities, the PAHO/WHO Manual for the Training of Community Health Workers underwent continuous revision and application in the field. The use of thermoplastics in prosthetics and orthotics was the subject of courses held in Argentina, Chile, Colombia, and Uruguay, and in Ecuador plans were made to set up training activities on prosthetics in Guayaquil. PAHO and WHO collaborated in holding a consultative meeting for teachers of community-based rehabilitation in Saint Lucia, in November–December, with the participation of Barbados, Guyana, Honduras, India, Nigeria, Philippines, Somalia, Saint Lucia, Sri Lanka, Sweden, and Switzerland. The 25-year-old PAHO disability prevention and rehabilitation program was evaluated in May by a consultative group that urged implementation of the respective policies set out in the Regional Plan of Action for health for all and suggested new approaches in the areas of research, training, information, and services.

Women in Health and Development

2.28 The urgent need to improve the situation of women in health and development (WHD) was recognized by the United Nations General Assembly when it declared 1976–1985 as the U.N. Decade for Women, and by the PAHO XXVIII Directing Council in 1981 when it adopted a Five-Year Regional Plan of Action on Women in Health and Development 1981–1985. The main goal of the Plan is to help Member Governments and PAHO successfully integrate women into continuing and new health and development activities in the hemisphere. In 1983, PAHO published the Five-Year Plan as part of its series of Scientific Publications and distributed it widely throughout the Region. Also published and widely distributed was the document *Mandate for Change: Women, Health and Development in the Americas*, which summarizes the Five-Year Plan, lists PAHO activities underway, and suggests areas needing further action.

2.29 PAHO sponsored a technical working group meeting in Washington, D.C., in April, in which representatives of nongovernmental organizations and Ministries of Health from Colombia, Honduras, and Peru, together with PAHO and WHO staff examined the roles community women's groups can play in developing primary health care activities at the local level. On the basis of information presented on the types and roles of community groups that work with women in public health activities, the participants identified key problems and constraints, as well as possible solutions for increased involvement of nongovernmental organizations in primary health care at the

national and local levels. The Special Subcommittee of PAHO's Executive Committee on Women, Health, and Development met in June to review progress made toward the Plan's implementation and reiterated the need for countries to establish more effective mechanisms for the promotion and recognition of women's roles in health and development, and to strengthen national policies and programs for the protection and improvement of women's health, particularly in regard to the health and safety of women in the workplace. At its XXIX Meeting in September, the PAHO Directing Council urged the governments to strengthen programs for the prevention, early detection, and treatment of female-specific diseases such as breast and cervical cancer. The Council also emphasized the need to increase the participation of nongovernmental organizations and community groups concerned with women's issues in the formulation of national health goals, priorities, and programs. As 1983 was the Inter-American Year of the Family, PAHO collaborated with the Inter-American Commission of Women in developing a regional seminar held in Santiago, Chile in September. PAHO held the first of two seminars on women, health and development in December to accelerate the development of national projects in this area; national focal points for women, health, and development from Brazil, Colombia, Cuba, Mexico, and Panama and key PAHO staff discussed women's health problems in those countries and outlined workplans for 1984 integrating activities that address those problems into their national health plans and programs.

Oral Health

2.30 The planning and programming of dental programs in the Region and the implementation of programs to meet the goals of HFA-2000 target the need for adequate information reflecting the status of dental diseases, their impact, and resources available to prevent and control them. As part of a process to improve reporting systems and collecting of pertinent information, PAHO convened a meeting in Los Angeles, California, in December of representatives from Brazil, Canada, Dominican Republic, New Zealand, Peru, United Kingdom, the United States, and Venezuela. The definition of primary health care in dentistry for the Americas was the subject of a meeting held in Costa Rica in May, with participants from Argentina, Brazil, Colombia, Costa Rica, Cuba, Guatemala, Mexico, Panama, Peru, the United States, and Venezuela. A meeting for the Southern Countries of the hemisphere, held in Buenos Aires in October, identified goals and discussed primary care strategies and targets for Argentina, Brazil, Chile, Paraguay, and Uruguay, as well as areas of mutual collaboration. Development of dental care programs in the Caribbean, including use of auxiliary personnel, was the basis of a meeting on dental preventive and care services for children held in Havana, Cuba in September, with participants from eight Spanish- and English-speaking countries and islands.

2.31 PAHO continued to emphasize the need to utilize fluorides for preventing dental caries in the manner most appropriate to the countries of the Region. Fluoridation of water supplies was encouraged and notable advances made, especially in Brazil. Consultations with country health authorities reviewed and discussed improved methodology for fluoridation of salt and technical aspects of these procedures and identified areas of future technical cooperation. Likewise, review of the potential use of salt as a vehicle for fluorides in those areas, where water fluoridation has either been long delayed or would be difficult to implement, was the subject of meetings held with representatives from the Eastern Caribbean and of technical assistance provided to Barbados, Brazil, Costa Rica, Dominica, Peru, St. Kitts, and Saint Lucia. Preliminary results of the evaluation of the Bermuda fluoride tablet program indicated considerable reduction in dental caries in children.

2.32 Human resource development, human performance in dentistry, and new techniques for the provision of dental services were subjects of PAHO activities and a meeting with WHO.

2.33 As part of the approach for

community participation, traditional practices in dental health, particularly in dental hygiene and pain relief, were the subject of activities conducted with a view to future interregional collaboration. Analyses were made of the habits, procedures, and materials used for prevention of dental caries, tooth-cleaning, and oral hygiene by rural and native populations in Colombia and Peru. A meeting was held in Panama in April to address the problems of and solutions to prevalence of periodontal diseases, not only in view of long-term effects on the dentition of most of the population, but also of the appearance of severe stages of the diseases at an early age in children in the Region.

2.34 Technical cooperation in dental program development was provided to Argentina, Belize, Brazil, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela. Rural programs in the Dominican Republic directed particular attention to the use of simplified equipment and approaches in the provision of dental care. Assessments in Paraguay and Uruguay aimed at developing dental disease prevention programs to implement new and improved systems for the delivery of dental care. Development of simplified equipment and dental operatory designs continued to be stressed.

Mental Health

2.35 The Regional Mental Health Program targeted prevention or reduction of psychiatric, neurological, and psychosocial problems, including those related to alcoholism and drug abuse, and increased cooperation with general health services through utilization of the behavioral sciences and mental health knowledge in the development of prevention, treatment, and rehabilitation strategies. A WHO global coordinating group reviewed the program and stressed the importance of psychosocial factors in the promotion of health and human development; prevention and control of alcoholism and drug abuse; and prevention and treatment of neurological and mental disorders.

2.36 **Psychosocial factors in the promotion of health and development.** Promotion of research on behavior of the adolescent mother and the family nucleus during the perinatal period was proposed at the XXIII Meeting of the Advisory Committee on Medical Research, held in Mexico City in July. A workshop on the psychosocial aspects of primary care, held at PAHO Headquarters in September, likewise proposed that research be promoted on the psychosocial aspects of pregnancy and delivery, psychological intervention in families, and prevention of accidents and of adolescent behavior conducive to physical and psychological risks. A course on transcultural psychiatry sponsored by the Department of Mental Health of the U.S. Virgin Islands, Howard University (Washington, D.C.), and PAHO, and attended by health workers from the English-speaking Caribbean, studied the sociocultural factors that influence the mental health of the individual and the family in that subregion. In Barbados, PAHO assisted in giving a course on the mental development of children, and in Chile it collaborated with the National University in evaluating and reviewing a community program on the mental health of the mother and child. The importance of psychosocial factors for health has been widely recognized in Canada and the United States, where the psychosocial approach has been incorporated into general health programs. PAHO cooperated with mental health departments in the ministries of health and in universities of Brazil (Rio Grande do Sul and Santa Catarina States), Chile, Cuba, and Honduras on the adoption of this approach. The World Federation for Mental Health and the World Psychiatric Association collaborated with the Organization in the dissemination of technical information on psychosocial factors.

2.37 Drug and alcohol abuse is the fastest growing health problem in the Region. PAHO has made vigorous efforts to meet the increasing demands from the countries for technical cooperation, particularly in prevention. Assistance to Brazil, Colombia, Ecuador, and Peru concentrated on developing country project proposals for extrabudgetary financing through the United

Nations Fund for Drug Abuse Control (UNFDAC). In Peru, an UNFDAC-supported project provided fellowships, consultantships in drug control, drug abuse prevention, and epidemiology, as well as equipment for computerizing drug control and surveillance. In cooperation with the Association for Medical Education and Research in Substance Abuse, PAHO assisted in developing alcohol and drug abuse curricula for medical schools. The Organization participated in a regional seminar on drug abuse rehabilitation sponsored by the International Labor Organization in Costa Rica. For the fourth consecutive year, PAHO provided technical cooperation to the South American Agreement on Narcotic and Psychotropic Drugs, which met in Lima, Peru, to discuss new demand and supply reduction strategies. Collaboration with the Institute on Alcoholism Research of the University of Alabama (USA) included joint planning of an industrial alcoholism seminar in Guatemala. The U.S. National Institute of Alcoholism and Alcohol Abuse (NIAAA) was designated as a WHO Collaborating Center in research and training in alcoholism, bringing the number of those Centers in the field of alcohol and drug abuse to a total of five in the Region. Representatives from eight Caribbean countries attended a seminar in Barbados in December on the safe use of psychotropic drugs that aimed at identifying national and subregional priorities, particularly in the prevention area; it received financial support from UNFDAC and the cooperation of CARICOM, the American Medical Association, and the Committee on Problems of Drug Dependence.

2.38 **Prevention and treatment of neurological and mental disorders.** PAHO collaborated with national authorities of Brazil, Chile, Guatemala, Honduras, Panama, and Venezuela in reviewing their mental health programs. The role of the psychiatric hospital was redefined, and guidelines were established for developing community mental health services. Field tests in Panama of the manual on psychiatry for primary health workers, produced by the PAHO Textbooks Program, showed its usefulness to non-professional health agents. New strategies for extending mental health services to the communities that lack them were examined during the Caribbean Conference on Mental Health, held in Kingston, Jamaica, and during the XIII Latin American Congress of Psychiatry in Pôrto Alegre, Brazil. The Organization collaborated with schools of nursing and mental health services in Argentina, Barbados, and Jamaica in reviewing mental health curricula and designing and executing intermediate courses. In the Dominican Republic and Venezuela, cooperation with psychiatric centers continued to focus on rehabilitating chronic patients and the mentally handicapped. The Mexican Institute of Psychiatry and the School of Public Health of Mexico, in cooperation with PAHO, organized a course on mental health services administration, attended by 42 students from Argentina, Brazil, Dominican Republic, Honduras, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela. Six neurological centers in Bolivia, Chile, Ecuador, Mexico, Peru, and Venezuela participated in neuroepidemiological research, sponsored by the Organization. This research was preceded by two courses on neuroepidemiology held in Caracas and Quito with the collaboration of the U.S. National Institutes of Health. Neuronal aging and the treatment of senile dementia were the topics of a symposium held in Buenos Aires, with participating scientists from Argentina, Brazil, Ecuador, Mexico, and the United States.

Accident Prevention and Control

2.39 A comparative study of data in 15 of the countries with 62% of the population of the Region, carried out from 1969 to 1980, made it possible to determine that the ratio of vehicles to inhabitants (motorization index) showed percentage increases in 14 of the 15 countries; death rates per 100,000 inhabitants experienced percentage increases in eight countries; while death rates per 10,000 vehicles showed percentage reductions in 10 countries (Table 8).

2.40 A 1980 comparison of the death rates per 100,000 inhabitants and per 10,000 vehicles (the indicators most frequently used

Table 8. **Death rates from motor vehicle accidents in selected countries of the Region of the Americas and their percentage variations, 1969 and 1980***

Country	Death rate per 100,000 inhabitants			Death rate per 10,000 vehicles		
	1969	1980	Variation (%)	1969	1980	Variation (%)
Argentina	14.9	14.3	- 2.0	20.0	8.9	- 55.5
Canada	27.4	21.7[a]	- 20.8	7.0	...	...
Chile	17.8	13.1	- 26.4	66.0	17.3	- 73.8
Colombia	10.2	8.5	- 16.7	70.0	27.4	- 60.9
Costa Rica	12.3	16.6	35.0	39.0	17.0	- 56.4
Cuba	11.3	12.4	9.7	32.0	32.6	1.9
Dominican Republic	7.1	6.7	- 5.6	56.0	17.0	- 69.6
El Salvador	9.1	7.7	- 15.4	63.0	25.5	- 59.5
Guatemala	5.5	14.7	167.3	49.0	53.6	9.4
Panama	8.3	20.0	141.0	21.0	26.4	25.7
Peru	10.5[b]	11.8	12.4	44.0[b]	43.3	- 1.6
Trinidad and Tobago	14.5	19.9	37.3	8.0	15.2	90.0
United States of America	28.3	22.2[c]	- 21.6	6.0	3.1[c]	- 48.3
Uruguay	6.3	14.0	122.2	8.0	15.2	90.0
Venezuela	24.2	37.4	54.5	28.0	20.6	- 26.4

*Source: Information received from the countries.
...Data not available.
[a]1978.
[b]1967.
[c]1981.

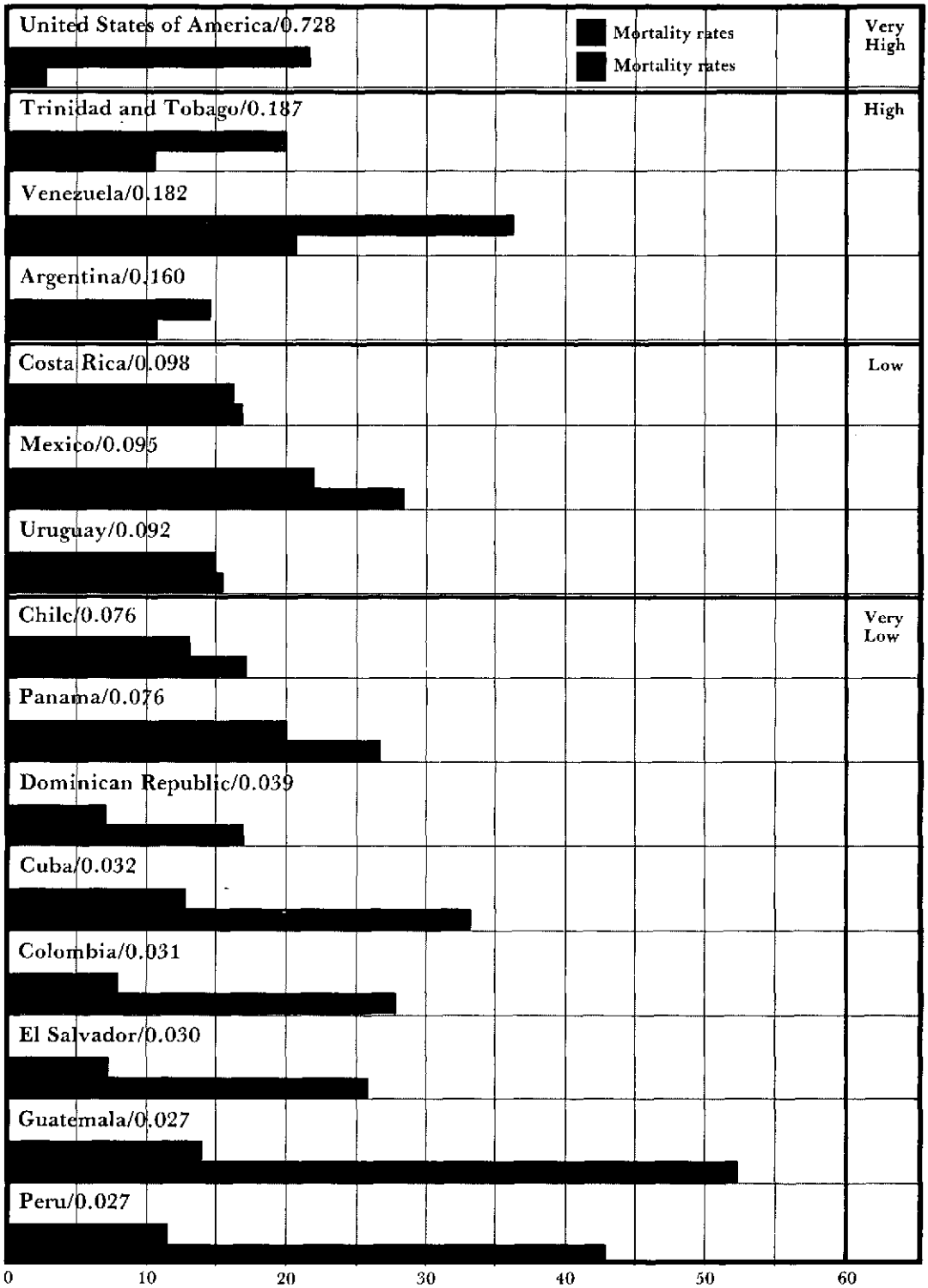
in measuring the extent and seriousness of the problem) indicates that in countries where the motorization index is very high (United States), the death rate per 10,000 vehicles is approximately 25% of the value of the death rate per 100,000 inhabitants. In countries with a high motorization index (Argentina, Trinidad and Tobago, and Venezuela), the death rate reaches 50–75% of the population rate; in countries where the index is low (Costa Rica, Mexico, and Uruguay), the two rates are equal or close; and where very low (the rest of countries selected) the death rate per 10,000 vehicles is one or more times higher than the value of the death rate per 100,000 inhabitants (Figure 1). It should be noted that the categorization of the countries according to the value of the motorization index is a conventional one and is only an attempt to explain the numerical phenomenon observed.

2.41 As a basis for planning accident prevention and control programs, PAHO promoted the importance of collecting, analyzing, and interpreting epidemiologically relevent information using a common system of nomenclature and definitions to facilitate comparisons among countries. During 1983, personnel from seven countries of the Region attended a WHO-sponsored course on accident prevention and control in developing countries at the Johns Hopkins University, School of Public Health (USA). A seminar for the Caribbean was planned to be held in 1984 in Barbados on this subject.

Laboratory Services

2.42 PAHO cooperated with the countries in improving their central laboratories, strengthening intermediate laboratories, and creating peripheral ones, as part of an effort to establish national laboratory networks. The effectiveness and efficiency of laboratory services have been increased by extending their coverage, as a result of projects financed by the United Nations Development Program (UNDP), the U.S. Agency for International Development (USAID), the Canadian International Development Agency (CIDA), the Inter-American Development Bank (IDB), and other multinational and bilateral agencies. With assistance from UNDP and the Ministry of Health of Chile, a regional seminar was held in October in Santiago, with participants

Countries/Motorization Index[a]



[a] Vehicles per inhabitants.

Source: Table 8

Figure 1. **Relation between the mortality rates per 100,000 inhabitants and those per 10,000 vehicles according to the motorization indexes, in selected countries of the Region of the Americas, 1980**

from 19 countries, to analyze the current situation, identify the substantive problems, and formulate recommendations aimed at reorienting laboratory programs to better contribute to the health for all goal. The success of the project for strengthening the Central Laboratory of Chile, initiated with UNDP cooperation, has permitted its extension to regional and local laboratories and resulted in the creation of an efficient national network that provides total coverage. The Institute of Public Health of Chile, the central laboratory of the network and a WHO Collaborating Center, provided cooperation to other countries in the form of services, training, research, and information exchange.

2.43 UNDP financed a project for strengthening hospital laboratories in the countries and territories of the Eastern Caribbean; services were organized for histopathologic and cytologic diagnosis, including establishment of quality control programs in clinical chemistry and microbiology located at the Caribbean Epidemiology Center (CAREC) in Trinidad. Manuals on standards and procedures have been prepared and adopted by directors of laboratories in the countries and territories. Courses held included those on quality control in clinical chemistry and immunohematology for blood bank and hematology programs. After the first phase of strengthening hospital laboratories, a program for rural laboratories was initiated.

2.44 The program for regional laboratories in Mexico began its work with courses for the training of personnel on the topics of automation in hematology, determination of mycotoxins in grains, and production and control of biological reagents. Design of a rigorous program for the training of human resources and for research on virology, bacteriology, and production and control of biological reagents was to be followed by its execution in 1984–1985. PAHO provided technical cooperation to laboratory systems in Argentina, Brazil, Chile, Ecuador, Mexico, Uruguay, Venezuela, and the countries of the Caribbean. It assisted Brazil in planning and carrying out a broad program for the establishment of a national laboratory service that was to make it possible to support the programs in epidemiology and environmental control; for that purpose standards were implemented, manuals prepared, and reference centers designated for different aspects of the laboratory sciences, along with a program for the training of personnel that included holding a course in August for those working in the network. The Dominican Republic was the site of another training course in September.

2.45 Occupational risks implicit in work with biological, chemical, and physical agents have increased as a result of expanded laboratory program activities. In order to prevent those risks, courses were organized on biosafety for supervisory personnel in laboratories of the Caribbean and other countries. PAHO, with the cooperation of the U.S. Centers for Disease Control (CDC) and the U.S. National Institutes of Health (NIH), gave one such course at the Pan American Zoonoses Center (CEPANZO) in Buenos Aires, Argentina in November, with representatives from most of the countries of the Region attending. Other cooperation consisted of establishing quality control programs in different areas of the laboratory sciences. Regional courses with participants from 25 countries resulted in added impetus to the 20-year-old program to guarantee the quality of serologic tests for syphilis and to the initiation of a new one for clinical chemistry. A similar program is being carried out in microbiology for mycobacteria and viral agents.

2.46 The lack of reliable reagents is a problem that exists throughout the Region. To overcome this situation, four institutions have been designated to constitute an initial laboratory network for the production and distribution of reagents to the countries upon request. PAHO held a regional course in Caracas, Venezuela for the purpose of identifying the etiology of diarrheal diseases, with assistance from the Ministry of Health and Social Welfare and CDC. A regional program for the surveillance of bacterial resistance organized by PAHO and in cooperation with the Brigham and Women's Hospitals of Boston, Massachusetts, with the participation of Argentina, Brazil, Chile, Mexico, and Venezuela aimed at exploring

the problem of strains that are multiresistant to antibiotics. A proposed program for the virologic surveillance of dengue was expected to make it possible for the countries to predict and prevent the occurrence of outbreaks. A program initiated in cooperation with CDC in El Salvador, Guatemala, and Mexico targeted improving aspects of virologic diagnosis.

2.47 To ensure the transfer of technology PAHO, in cooperation with the Government of Mexico, organized a regional course on the production and use of monoclonal antibodies for diagnosis. Along with the Government of the Netherlands, the Organization cooperated in establishing a network of immunology laboratories in the Caribbean (Cuba, Jamaica, Suriname, and Trinidad and Tobago) which, after training 28 scientists, developed technology for providing the support necessary for national health plans. This experience has awakened interest in creating a similar arrangement for training and research in immunology in Central America, for which Costa Rica has offered to act as host country.

Radiation Health

2.48 The lack of access to diagnostic radiologic services by most people in rural and urban-fringe areas of the Americas has prompted PAHO to promote the development of a basic radiology system, primarily for use in health centers and front-line hospitals. This system consists of an essential x-ray machine, plus training material for darkroom technique, operation of the x-ray unit, and evaluation of radiographs by general medical personnel not trained as radiologists. In cooperation with the Ministry of Health of Colombia, such systems were installed at four sites in the Department of Antioquia, on a field trial basis. Belize received assistance in organizing and rationalizing radiologic diagnostic services on a nationwide basis, including selection of appropriate x-ray machines and repair of damaged ones. Cooperation was provided to Chile for a feasibility study concerning the incorporation of a basic radiology system within the Health Ministry's radiologic diagnostic services program.

2.49 Efforts concentrated on improving the quality of radiation therapy services since an estimated one-half of all cancer patients in a well-developed program require radiation therapy and treatment doses must be extremely accurate to be effective. Evaluation of intercomparison studies on radiation therapy dosimetry carried out in the Americas by PAHO in cooperation with WHO and the International Atomic Energy Agency (IAEA) over the past 12 years, using thermoluminescent dosimeters, showed that the number of participating radiation therapy centers would have to be drastically increased if those studies are to have an impact on improving radiation therapy. The results of the studies for cobalt-60 radiotherapy units, expressed as percentage deviations from the quoted dose, are shown below:

Deviation	−5% to +5%	−5.1% to −10% +5.1% to +10%	−10.1% to −20% +10.1% to +20%	Less than −20% or Greater than +20%
Percentage of participating centers with indicated deviation	59%	24.4%	11.8%	4.8%

These studies include approximately 300 dosimetric measurements in 180 radiation therapy centers in 22 countries during the period 1969–1982. The percentage of deviation is calculated as:

$$deviation = 100\,\frac{(Measured\ dose - quoted\ dose)}{quoted\ dose}$$

Extension of these studies in the Region to cover every megavoltage radiation therapy unit on a yearly basis was considered essential to any quality assurance program.

2.50 During 1983 efforts to improve the quality of radiation therapy included participation in an IAEA advisory group meeting on the future of the dose intercomparison service for radiation therapy, which endorsed the key elements, mentioned previously, and recommended

means to improve coverage such as inclusion of orthovoltage x-ray machines and linear accelerators in addition to the cobalt-60 units presently included. The First International Symposium on Quality Assurance in Radiation Therapy: Clinical and Physical Aspects, was cosponsored by PAHO and the American College of Radiology, National Cancer Institute, Center for Devices and Radiological Health, American Society of Therapeutic Radiologists, American Association of Physicists in Medicine, American Cancer Society, American Society of Radiologic Technologists, American Association of Medical Dosimetrists, Circle of Ibero-Latin American Radiotherapists, Inter-American College of Radiology, International Society of Radiation Oncology, and the IAEA. The symposium reviewed international experience in quality assurance in radiation therapy and reached a concensus concerning optimal and minimal standards for quality assurance.

2.51 In the area of nuclear medicine, PAHO cosponsored and hosted the International Symposium on Single Photon Ultrashort-Lived Radionuclides in Medical Practice, in cooperation with the American College of Nuclear Physicians, the Society of Nuclear Medicine, the U.S. Department of Energy/Office of Health and Environmental Research, and the U.S. Food and Drug Administration's Center for Devices and Radiological Health. The Symposium had as its objective to define the current role and state-of-the-art of development and clinical application of generator-produced single photon ultrashort-lived (from 2 minutes to 2 hours half lives) radionuclides and was the first major forum to assemble and disseminate information on a worldwide basis regarding applications of such radionuclides for the diagnosis of heart and lung disease, which are particularly important in children because of the lower radiation dose. PAHO also disseminated the *Newsletter* of the Radiopharmacy Committee of the Association of Latin American Societies of Biology and Nuclear Medicine to nuclear medicine specialists throughout the Region.

2.52 In the radiation protection area, PAHO cooperated with national health authorities of Argentina in training and efforts to extend and strengthen provincial radiation protection services. Technical cooperation to Brazil included participation in a meeting on radiological protection and dosimetry held at Itaipava in March and assistance in organizing and strengthening the Radioprotection and Dosimetry Institute in Rio de Janeiro, a WHO Collaborating Center for Secondary Standard Radiation Dosimetry. An advisory group of radiation protection specialists met in Mexico City in October to begin preparation of the second volume of a basic radiology protection manual being produced by the governments of Argentina, Colombia, and Mexico, with PAHO collaboration. Information on radiologic technology and protection was provided to Argentina, Brazil, Chile, Colombia, Cuba, Honduras, Mexico, Paraguay, and Trinidad and Tobago. A monthly bibliography of recent publications, with information on radiological sciences from 16 journals, was distributed to specialists throughout the Americas. PAHO hosted a meeting of the main commission of the International Commission on Radiological Protection (ICRP) in October and participated in the International Conference on the Long-Term Worldwide Consequences of Nuclear War in Washington, D.C. in October–November.

Essential Drugs

2.53 Field observations in Latin America and the Caribbean show that the delivery and extension of health care is severely restricted by inadequate supplies of essential drugs in public sector institutions, particularly in health centers and posts located in rural and urban marginal areas, and by ever-increasing stocks of pharmaceutical brand-name products in private sector pharmacies. Ineffective, toxic, or obsolete products represent not only a threat to the consumer's health but also an unnecessary expenditure of much needed hard currency, since most of the countries import the finished drug products and their ingredients. The Technical Discussions, held in September 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 that urged the governments to develop intersectoral drug policies linked to health needs and to evaluate and improve present production, marketing, quality control, and supply practices; that resolution provided the framework for the PAHO Expanded Program on Essential Drugs.

2.54 The importance of a national drug policy and the legal, administrative, and technical aspects of pharmaceutical supply systems were highlighted at a regional working group on essential drugs held in Lima, Peru in April—the last of three such meetings aimed at promoting the concept and role of essential drugs in health policy and programs and at encouraging the development of country programs. In the Andean subregion a proposal was drafted and funds allocated for PAHO cooperation with the Hipólito Unanue Agreement in drug policy formulation, information systems, and training, to be carried out jointly with national institutions in the subregion. In Central America, an agreement signed between the Central American Bank for Economic Integration and the Organization for Technical Cooperation aimed at promoting financing and implementation of the Bank-sponsored regional program for production and distribution of priority drugs. The subject of essential drugs was included as a major programmatic component in a document proposing wide-ranging initiatives to improve health conditions in Central America and Panama.

2.55 In human resources a regional consultation held in Washington, D.C., in November, developed a core curriculum for training by national institutions in drug supply management. PAHO and the Pharmaceutical Center of Brazil signed a letter of understanding to train national staff responsible for the storage, distribution, and supervision of pharmaceutical products provided by that Center, for which the manual *Managing Drug Supply*, which is being published in Spanish under USAID/PAHEF sponsorship, would be used. Two UNDP-funded country projects in Brazil and Guatemala aimed at ensuring the quality of marketed products were underway. In Brazil, PAHO collaborated in strengthening the technical infrastructure of the National Health Quality Control Institute, which is responsible for food, drugs, and biologics control. In Guatemala, a two-year project to establish a national drug control program included technical assistance to develop a computerized drug registration system, update drug regulations, and improve organization of the official laboratory responsible for drug analysis. PAHO supported a drug utilization study in Barbados to evaluate prescribing practices and to identify critical areas for the continuing education of physicians. The Barbados Drug Service was named a WHO Collaborating Center for Essential Drug Management. Collaboration with Dominica and St. Vincent and the Grenadines resulted in improvement of their pharmaceutical supply systems. PAHO and WHO worked with Nicaragua in developing an essential drug program.

Vaccine Production

2.56 In September, the PAHO Directing Council at its XXIX Meeting, adopted a resolution that proposed that the vaccine production capacity of the Member Countries be studied for possible use in the Expanded Program on Immunization (EPI). Recent assessments of production by the countries of the DPT vaccine have indicated that it is not always efficient in that the potency of the pertussis component varies in quality. Among the reasons for this situation are managerial, financial and staffing shortcomings common to many laboratories in the Region, costly production methods, and poor or nonexistent regulatory mechanisms. In Latin America, of all the vaccines used in the EPI, the BCG vaccine is perhaps the only one that could be available for exchange purposes. A preliminary appraisal of production and control laboratories in Brazil, Cuba, and Mexico to ascertain whether they met criteria for participation in the vaccine procurement scheme established by the Revolving Fund concluded that it was necessary to strengthen them, document their procedures, field test

the vaccines manufactured, and confirm their stability.

2.57 In the area of vaccine surveillance the national health laboratories in Colombia, Ecuador, Honduras, Peru, and Venezuela qualified during the year in titrating viral vaccines, which brought to 10—the other five being in Argentina, Brazil (2), Chile, and Cuba—the number of laboratories that have become self-reliant in testing the stability of oral polio and measles vaccines used in the national immunization program. Laboratories in Brazil (Oswaldo Cruz Foundation) and Colombia (National Institute of Health) developed the plaque-formation technique for virus titer assay. Titration of trivalent measles, mumps, and rubella vaccines was introduced in laboratories in Colombia, Ecuador, Mexico, and Venezuela. PAHO supported the National Institute of Virology of Mexico in the preparation of reagents used in titration or viral infectivity and in the identification of tests of live poliomyelitis (oral) and live attenuated measles vaccines. The Organization awarded grants to the Clodomiro Picado Institute (Costa Rica) and the Oklahoma State University (USA) for characterization of the venom and antivenom of *Bothrops atrox*, a poisonous snake common in the Andean countries, Brazil, and Central America.

2.58 Argentina and Cuba are the only countries in Latin America that produce interferon on a commercial scale. The Center for Biological Research in Havana, recognized by WHO as a National Collaborating Center in Interferon, manufactures human alpha interferon for export purposes and has also developed the technology for production of beta and gamma interferon.

2.59 Standards, reference reagents, and seed prototype strains used in the production and control of biologics were distributed to Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Honduras, Mexico, Peru, Uruguay, and Venezuela. The Organization prepared and distributed a list of available human and veterinary vaccines produced in Latin America, which was expected to prove useful when the exchange of vaccines is instituted.

2.60 **Blood Program.** The XXI Pan American Conference (1982) set 1990 as the target year by which all the countries of the Region would establish efficient blood transfusion services. With a view to studying alternative strategies to achieve this goal, PAHO/WHO and the League of Red Cross Societies (LORCS) cosponsored a meeting in Washington, D.C., in February of experts from Brazil, Canada, Colombia, Haiti, Jamaica, the United Kingdom, and the United States. They stressed the importance of formulating national policies on the collection, processing, and use of blood, blood components, and blood derivatives in the organization of efficient blood banking and blood transfusion services. Subsequently, the PAHO Directing Council in its XXIX Meeting in September approved a regional project to strengthen blood transfusion services in Latin America and the Caribbean by technical cooperation among countries in national program formulation, planning managerial processes of evaluation, operations research, training, and production of reagents and standards for ABO and Rh blood group systems. PAHO promoted establishment of a network of collaborating laboratories to increase international and regional cooperation in support of the development of blood transfusion services: Brazil, Cuba, Jamaica, and Uruguay were among the very few examples of countries with coordinated systems in the public sector, and in the nonprofit private sector, Costa Rica, Nicaragua and Panama stood out. Training courses in blood banking and blood transfusion services continued to be held regularly in Argentina, Brazil, Costa Rica, Cuba, Jamaica, and Venezuela, among other countries. PAHO assisted in evaluation of blood transfusion services in El Salvador, Guatemala, and Honduras and of blood banks in Belize. A preparatory consultation in Guyana identified the needs to upgrade the Hematology Department in the Central Medical Laboratory and to train technicians at the Faculty of Health Sciences. PAHO provided advisory services to El Salvador, Guatemala, and Honduras, and in the establishment of a model system for servicing the public sector hospitals in these three countries based on voluntary, unpaid blood

donations and a central blood bank to coordinate all operations.

Disease Prevention and Control

2.61 A priority area of the Organization's program of technical cooperation continued to be the prevention and control of diseases, both communicable and noncommunicable, in the context of the Plan of Action for implementation of the regional strategies for health for all. Diarrhea and diseases preventable by vaccination are leading causes of infant morbidity and mortality, and in that light the Expanded Program on Immunization (EPI) and the diarrheal disease control program were major areas of activity. Malaria and other vector-borne diseases, which represent significant problems in a number of the countries, also continued to be stressed. The growing importance of noncommunicable diseases—particularly cardiovascular disease, hypertension, and cancer—has necessitated the bolstering of PAHO's efforts and resources in support of the respective national disease control programs. The strengthening of national and regional epidemiology services, including epidemiological surveillance, continued to be emphasized.

Epidemiology

2.62 PAHO technical cooperation in the field of epidemiology targeted increasing the countries' capacity to analyze their health problems, prescribe solutions, formulate, and evaluate disease prevention and control programs; maintaining epidemiologic surveillance of diseases of national and international importance; diagnosing the health situation and its trends as a precondition of planning; and emphasizing application of epidemiologic methods for monitoring and evaluation, with particular reference to priority human groups.

2.63 A regional seminar held in Buenos Aires in November on uses and perspectives for epidemiology discussed current epidemiologic practice and explored possible approaches for regional and intercountry cooperation. Among the findings and conclusions reached at the seminar, which will serve as a basis for planning PAHO regional and country level activities in this field, were: the importance of epidemiology in understanding the distribution of diseases and in identifying those population groups most at risk of disease and death; the methodologic challenge implicit in the study of noncommunicable chronic diseases, occupational diseases, and accidents because of their complex etiology and the many control measures involved; the requirement of multidisciplinary groups that participate in continuous analysis of the health situation and needs at each level of the service system as a basis for effective planning; and the importance of establishing national research policies, creating mechanisms that contribute to their implementation, and defining priority areas of research.

2.64 Support to epidemiologic surveillance systems in Argentina, Brazil, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, and Mexico included evaluation of epidemiologic information systems, promotion of continuing education programs, and redesign of systems, with an emphasis on the development of self-reliance of the countries. CAREC concentrated its activities in the countries of the English-speaking Caribbean.

2.65 Teaching modules for training continued to be an important training tool in most of the countries of the Region. In 1983, 2,000 copies of these modules were used, with new versions in English, Portuguese and French. Special interest was shown in the use of these teaching tools in Brazil, Haiti, and Honduras. CAREC collaborated in training programs on epidemiology in the Member Countries. In regard to dissemination of information, PAHO's *Epidemiological Bulletin* has continued to be published bimonthly in English and Spanish, presenting articles on health problems and their trends in the Region and in the countries as well as original articles on uses of epidemiology for disease control, health planning, and evaluation of health situations. The *Bulletin* also provides information on courses, seminars and meetings related to epidemiological surveillance and epidemiology. Technical information

(reprints of articles and bibliographies) on specific diseases or health problems was also distributed by PAHO to health professionals and public health institutions in the Region.

Immunization

2.66 All countries in the Region are committed to the implementation of the Expanded Program on Immunization (EPI) as an essential strategy to achieve HFA-2000. The five major areas of PAHO's technical cooperation are related to training, purchase of vaccines and related supplies through the operation of a revolving fund, the development and implementation of the cold chain, development of immunization information systems and dissemination of information, and comprehensive program evaluation.

2.67 During 1983, over 1,000 health workers were trained in program formulation, implementation and evaluation through workshops held in Argentina, Brazil, Cuba, El Salvador, and Uruguay. From the time EPI training activities were launched in 1979 through 1983, more than 10,000 health workers had attended these workshops (Table 9). Over 8,000 EPI modules have been distributed in the Region, either directly by the EPI Program or through the PAHO Textbooks Program.

2.68 Additionally, in 1983 the Cold Chain Regional Focal Point established by PAHO in collaboration with CIMDER (Multidisciplinary Development Research Center) and the Universidad del Valle in Cali, Colombia, held special training workshops for cold chain maintenance and repair in Bolivia and Nicaragua. Over 100 technicians in the Region have been trained. As the EPI enters the phase of full implementation, the challenge is to transfer the focus of program development and stimulation from PAHO staff at regional and country levels to national staff operating within the context of national institutions. With this change, program development and enrichment through training, evaluation, and operational research can occur continuously as staff within these institutions are charged with solving the myriad of technical and managerial problems that might hamper the accomplishment of program goals. The EPI training activities of all schools of public health were reviewed at a meeting held in Washington, D.C. in the latter part of 1983. It was noted that, since the first meeting with these institutions in 1980, they are all highly motivated to continue EPI training activities and are using EPI training materials; these materials have been adapted to meet national needs. New materials, particularly in the area of EPI disease surveillance, were produced by the National School of Public Health in Rio de Janeiro, Brazil, and five national courses were held in 1983 in that country. Participants from Bolivia and Peru also attended one of these courses.

2.69 In the field of cold chain research and development, the Regional Focal Point in Cali embarked on a global testing program to identify the proper equipment for use within the cold chain. Several cold boxes from within the Region were tested and the tests results reported to the countries. Studies were also conducted on time-temperature indicators to monitor the handling of vaccines during transportation and storage. The Focal Point also developed a 0.5 liter container that has a cold life of 28 hours at +43°C or 37.5 hours at +32°C. This container was specifically developed for use in health establishments and by vaccinators who work in urban areas and require a

Table 9. **National and local EPI courses in the Americas, 1979–1983**

Subregion[a]	National courses	No. of participants	Local courses	No. of participants
Caribbean	20	404	9	241
Continental Middle America	8	309	31	1,073
Tropical South America	10	542	109	5,727
Temperate South America	2	104	101	2,470
Total	**40**	**1,359**	**250**	**9,511**

[a]See Table 11 for list of countries included in each subregion.

container that is small, lightweight and provides a full working day's cold life. Assistance was also given to the Ministry of Health of Venezuela in the production of two sizes of ice packs. In addition, an evaluation was made of the different cold rooms in use in Argentina, Bolivia, Brazil, Colombia, Mexico, and Venezuela. As part of this review, a set of guidelines was prepared to assist program managers in the procurement of cold rooms.

2.70 By the end of 1983, the Focal Point was in a position to offer the following technical cooperation: provide technical advice on the sizing of solar refrigeration systems and assist in their installation; provide ice-pack molds in two different sizes and assist in production of the ice packs; provide training and necessary materials for countries interested in preparing personnel in the diagnosis and repair of domestic refrigerators; provide technical advice on the design and construction of cold rooms used for the storage of vaccines; and provide technical advice on the adaptation and/or conversion of equipment for use in the cold chain.

2.71 In the latter part of 1983, UNICEF strongly supported PAHO's EPI Revolving Fund by contributing US$500,000 to its capitalization. This amount is the first installment of a larger contribution to the Fund's total capitalization, which has been authorized to reach US$4 million. Due to the economic crisis and to the heavy currency devaluations experienced by many countries in the Region, the Fund could not accept local currencies for payment of vaccine orders from several countries. Despite these financial problems, the Fund's procurements helped to control vaccine costs during a time of rapid inflation and continued to provide good quality vaccines at low prices. Figure 2 shows the number of doses of each of the five vaccines procured through the Revolving Fund for the period 1979–1983. As can be seen, the amount of vaccines purchased over the 5 years has been increasing.

2.72 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 5 years of operation, the EPI Revolving Fund placed vaccine orders worth over US$15 million (Table 10).

Table 10. **Dollar value of vaccines purchased through the EPI Revolving Fund, 1979–1983**

Year	Value (US$) F.O.B.[a]
1979	2,259,064
1980	3,250,178
1981	3,981,343
1982	3,367,639
1983	2,763,235
Total	**15,621,459**

[a]Free on Board (represents the price at originating shipping point).

2.73 In November 1983 the EPI program managers from 17 English-speaking Caribbean countries met in Port of Spain, Trinidad, to set their 1985 targets for immunization coverage and disease reduction. This meeting was organized in response to a resolution of the XXIX Meeting of the PAHO Directing Council that urged accelerated progress toward achievement of the 1990 EPI goals. Most countries are gearing their activities toward the increase of immunization coverage, particularly to the high-risk groups of children under 1 year of age and pregnant women. In order to evaluate these programs, PAHO has developed and tested a comprehensive multidisciplinary methodology for this purpose. This evaluation methodology calls for the participation of a multidisciplinary team from each health ministry, which works jointly for 2 weeks. The results of the analysis and the recommendations are organized under the following topics: programming, strategies and tactics, supervision, vaccine supply and cold chain logistics, community promotion and participation, coordination, training, information systems, epidemiologic surveillance, and financing. A detailed plan of work is then prepared that identifies all the recommended activities and the unit within the Ministry of Health responsible for carrying them out. During 1983 evaluations were carried out in Bolivia, Brazil, Guatemala, Jamaica, and Nicaragua. Colombia and Ecuador performed follow-up evaluations, including analysis of the degree

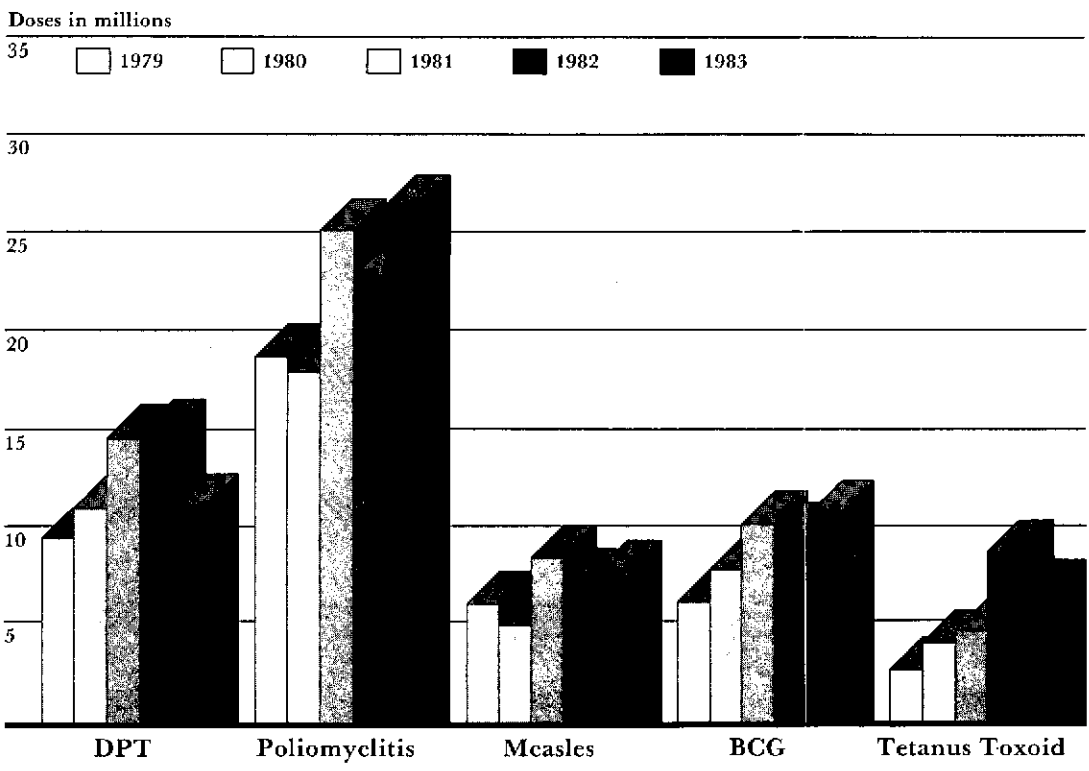


Figure 2. **EPI Revolving Fund vaccine procurements, in doses, 1979–1983**

of implementation of previous recommendations and work plans. These evaluations show that most countries have made substantial progress, particularly in the areas of staff training, vaccine supply, cold chain procedures, program planning, and administration. In most countries, however, the levels of immunization in children under 1 year of age remain low. Table 11 shows the 1982 vaccination coverages in each country for which data are available. An important factor affecting coverage in this age group is the very high dropout rate from the first to the third dose of multiple-dose vaccines such as DPT and poliomyelitis. Available data from some subregions indicate that dropout rates are over 50%, probably resulting from a lack of follow-up systems and community participation in immunization activities. Table 11 shows the dropout rates for those countries that have reported both first- and third-dose coverage. Of great concern is the coverage with tetanus toxoid vaccine in pregnant women, to protect the newborn against neonatal tetanus. These data are not available for most of the countries, and most of those for which data have been collected report levels below 10%. The downward trend in disease occurrence shown in Figure 3, particularly in the last 4 years, may reflect progress made by some countries in improving immunization coverage.

2.74 Dissemination of information is another key to program development at all levels. The main vehicle for this purpose is the "EPI Newsletter," which is distributed bimonthly to workers at all levels of the health system. This newsletter publishes information on program development in the countries as well as epidemiologic information and new technologies. It also includes information on new technologies available for program implementation. Over 6,000 health workers receive this publication, which is distributed in English and Spanish. In addition, PAHO periodically distributes other materials, such as abstracts of articles related to the EPI diseases and vaccines, educational aids aimed at disease surveillance, and flipcharts to aid training of local health workers in cold chain logistics and maintenance. A comprehensive review of the EPI vaccines was published and distributed in 1983 as PAHO Scientific

Publication 451, *Recent Advances in Immunization: A Bibliographic Review*. This publication covers a wide range of questions frequently asked about the EPI vaccines and vaccination schedules, and defines the current state-of-the-art and its implications for the EPI.

Diarrheal Diseases

2.75 At the end of the year, 16 countries of the Region had prepared complete plans of action on diarrheal disease control (DDC) and six had formulated partial plans of action. Of 29 countries that participate actively in the program, 13 were carrying out programs according to integrated plans of action, and 16 were carrying out diarrheal disease control activities on an ad hoc basis. Technical assistance was given to five countries for the formulation of national programs to control these diseases in 1983. Eight countries (Argentina, Brazil, Colombia, Costa Rica, Mexico, Peru, the United States, and Venezuela) are locally

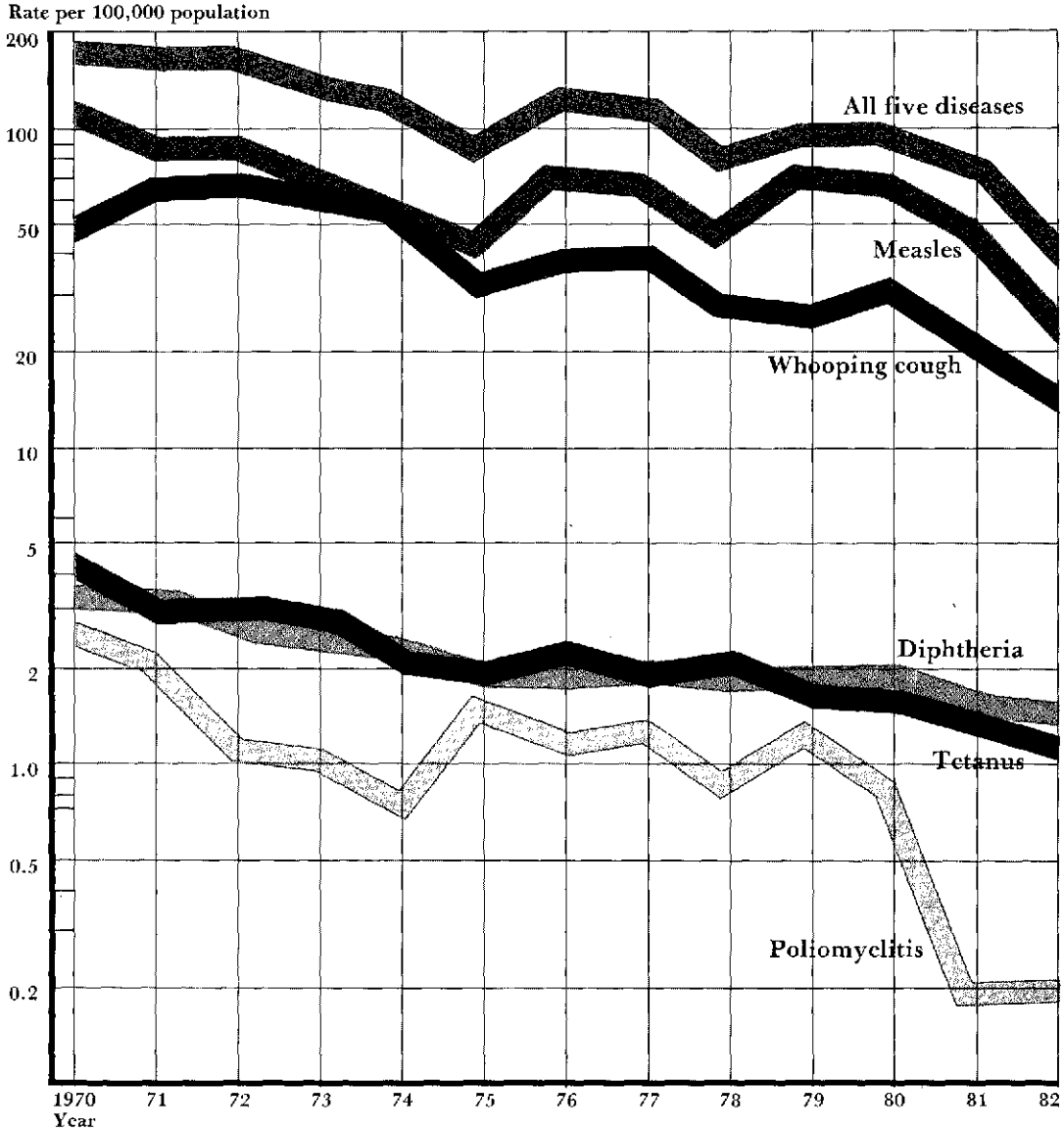


Figure 3. **Incidence of five vaccine-preventable diseases, in the Region of the Americas,* 1970–1982 (provisional data)**

*Excluding Bermuda, Canada and the United States of America.

Table 11. **Percent of vaccination coverage in children under 1 year of age, by vaccine**

Subregion and country	Population under 1 year	Coverage (%) in children under 1 year of age		
		DPT		Dropout rate
		1st dose	3rd dose	
North America				
Canada	390,000	...	...	...
United States of America	3,911,000	...	...	...
Caribbean				
Antigua and Barbuda	1,161	...	78.9	...
Bahamas	5,506	...	68.7	...
Barbados	4,346	...	62.2	...
Belize	5,867	...	49.7	...
Cuba	161,169	83.1	67.0	19.4
Dominica	1,648	...	100.0[b]	...
Dominican Republic	182,000	75.3	30.1	61.0
Grenada	2,400	...	56.0	...
Haiti	192,000	...	...	...
Jamaica	65,859	...	33.8	...
Saint Lucia	3,800	...	79.1	...
St. Vincent and the Grenadines	3,118	...	67.3	...
Trinidad and Tobago	26,300	...	53.8	...
Continental Middle America				
Costa Rica	64,000	100.0[b]	88.2	11.8
El Salvador	192,000	55.7	43.9[a]	...
Guatemala	312,198	75.7	45.8[a]	...
Honduras	160,000	94.8	53.0	44.0
Mexico	2,847,000	41.7	22.7	45.6
Nicaragua	119,000	98.7	26.8	73.0
Panama	54,129	...	62.8	...
Tropical South America				
Bolivia	216,000	40.7	12.4	70.0
Brazil	3,811,116	...	53.4	...
Colombia	940,000	47.7	21.0	56.0
Ecuador	334,000	65.3	26.1	60.0
Guyana	20,500	...	53.3	...
Paraguay	122,000	...	39.0	...
Peru	661,000	46.5	21.6	54.0
Suriname	10,000	...	60.8	...
Venezuela	496,000	93.7	70.6	25.0
Temperate South America				
Argentina	555,000	100.0[b]	66.1	34.0
Chile	274,000	98.1	93.7	5.0
Uruguay	56,000	97.8	63.1	36.0

...Information not available.
[a] 2nd dose.
[b] Estimated data. Reported number of doses exceeded estimated target population.

producing oral rehydration salts (ORS) on a large scale, and five countries have begun production on a small and medium scale (Dominican Republic, El Salvador, Haiti, Honduras and Paraguay). PAHO continued to support the activities related to acquiring ORS, namely: maintaining reserves in Barbados, Peru, and Trinidad; acquiring ORS packages from several intra-regional sources; and preparing an inventory of ORS suppliers in the Region, for distribution to all Member Countries. A meeting was held in June of 13 national diarrheal eradication program directors and representatives from the International Development Research Center (IDRC), Canada, UNICEF, and PAHO/WHO. Experience gained, obstacles blocking development of the programs, and

type and dose, including dropout rates, in the Region of the Americas, 1982

	Coverage (%) in children under 1 year of age				
	Poliomyelitis		Dropout rate	Measles	BCG
	1st dose	3rd dose			
North America					
Canada	...	...	...	...	...
United States of America	...	...	...	...	...
Caribbean					
Antigua and Barbuda	...	85.9	...	...	...
Bahamas	...	67.3	...	64.8	...
Barbados	...	62.6	...	53.1	...
Belize	...	52.3	...	42.8	75.2
Cuba	81.3	82.0[a]	...	54.3	95.9
Dominica	...	72.8	...	42.6	48.4
Dominican Republic	93.7	38.7	59.0	26.4	51.6
Grenada	...	61.1	...	5.2	...
Haiti	...	...	...	...	...
Jamaica	...	72.0	...	12.0	26.6
Saint Lucia	...	81.2	...	43.3	59.5
St. Vincent and the Grenadines	...	99.1	...	40.2	...
Trinidad and Tobago	...	58.5	...	...	...
Continental Middle America					
Costa Rica	100.0[b]	100.0[b]	...	97.0	...
El Salvador	56.7	43.9[a]	...	44.5	47.3
Guatemala	73.8	45.4[a]	...	12.2	28.0
Honduras	95.0	54.1	43.0	55.7	57.4
Mexico	100.0[b]	73.2	26.8	8.3	25.4
Nicaragua	...	71.9	...	40.2	81.8
Panama	...	63.2	...	66.3	86.3
Tropical South America					
Bolivia	43.2	13.1	70.0	15.9	33.1
Brazil	100.0[b]	100.0[a,b]	...	64.0	60.8
Colombia	48.8	21.7	56.0	22.4	53.2
Ecuador	64.6	25.9	60.0	33.1	77.0
Guyana	...	73.1	...	67.5	77.5
Paraguay	...	43.0	...	34.0	47.0
Peru	46.6	21.5	54.0	29.3	59.5
Suriname	...	58.1	...	...	...
Venezuela	63.7	42.5	34.0	35.8	...
Temperate South America					
Argentina	100.0[b]	100.0[b]	...	11.2	82.6
Chile	97.8	82.5[a]	...	92.5	93.9
Uruguay	94.8	70.0[a]	26.2	56.8	30.9

... Information not available.
[a] 2nd dose.
[b] Estimated data. Reported number of doses exceeded estimated target population.

resources available to countries from bilateral and multilateral sources were discussed. Among other regional initiatives related to providing services for diarrheal disease control, PAHO cooperated in the preparation of projects financed with extrabudgetary funds for Dominica, Haiti, and Jamaica.

2.76 Manpower training activities continued to receive technical assistance from PAHO. To date 164 participants from 34 countries have attended the course on management and planning of programs for DDC. Practical testing was applied to a new intermediate level course on supervisory skills for DDC programs in Cuba, Ecuador, and Jamaica. PAHO provided limited support for the 10 countries participating in

the third modular training course on communications and the control of diarrheal diseases, supported by the Latin American Center for Educational Technology in Health (CLATES), that prepared DDC-related health education and communications projects as part of the follow-up strategy. Clinical oral rehydration therapy (ORT) demonstrations were given in five countries, and systematic training of health personnel was continued in five others. Two training courses were given in June: one on rotaviruses in Havana, Cuba, and one on enteric microbiology in Caracas, Venezuela.

2.77 Using the experience acquired in the evaluations of national programs for the control of diarrheal diseases carried out in 1982 in Ecuador and Honduras, a working group met at PAHO Headquarters in March to improve the evaluation methodology, applied to simultaneously analyze DDC programs and the EPI in Jamaica. An evaluation was made of the program in Belize in December. Most of the problems encountered were administrative, others will require operations research to determine the optimum program structure appropriate for each country and culture. There is an evident need for new methods to improve the management of national programs. Given the irregularity or absence of specific information, it has not been possible to establish reliable rates of morbidity, mortality, or coverage in many countries. Sampling surveys therefore offer a means of generating the figures on the bases required to establish goals and later to evaluate national DDC programs. Using an integrated method would result in information not only on diarrhea but also on other areas of maternal and child primary health care, such as immunization, nutrition and acute respiratory infections, among others.

2.78 The Steering Committee of the Regional Scientific Working Group in Diarrheal Diseases held a meeting in Colombia, in April where 21 proposals prepared by scientists on operational research in the drive to eradicate diarrheal diseases were examined and funds were approved for six of them. At the Committee's October meeting held in Cuba, 10 projects were considered and seven were approved for financial support. PAHO is using a computerized information system to disseminate information on the regional components of DDC research, as well as promoting coordination with other bilateral and multilateral agencies. PAHO awarded diarrheal research grants to investigators in 15 countries of the Region, which came to a total of US$233,108 during 1983. PAHO also cooperated in: an etiological study in several centers; an international study on rotaviruses in collaboration with WHO and with the Centers for Disease Control in Atlanta, Georgia (USA); the designation of other WHO Collaborating Centers in the Region to provide training to investigators; and the preparation of model research protocols on identifying the impact of health education on water and sanitation, effectiveness of early ORT application, and the effect of breastfeeding on morbidity from diarrheal diseases.

Malaria

2.79 The malaria situation observed in the Region in 1983 has not shown any improvement since 1982, when it was already declining. The number of malaria cases registered in 1983 was 793,073, although the data from some countries are incomplete. This situation calls for urgent application of the recommendations adopted in 1978, by the 31st World Health Assembly (WHA31.45) designed to reorient antimalarial activities so that they become an integral part of national health programs. The Organization provided technical cooperation so that the available methodologies for control could be applied, according to the local epidemiological situation and the institutional and financial conditions of the countries. This includes analyzing the factors that make the development of programs for the prevention and control of malaria difficult. The list includes the following: a shortage of funds to meet needs adequately; the increase of operational costs; massive and disordered migratory movements; vector resistance to insecticides in Central America and parasite resistance to drugs in South America; and

social and political instability present in some subregions. Natural disasters such as the floods that affected extensive regions in Bolivia, Ecuador, and Peru at the beginning of the year can be added to these factors. The foregoing problems have obliged governments to adapt the campaign strategy to the specific circumstances that they each face. In order to facilitate adapting the strategy, PAHO promoted using the process of stratifying the malarious areas, according to specific epidemiological conditions as well as social and economic aspects that predominate in the areas where the problems are greatest. The efforts in this regard were most apparent in Brazil, Colombia, the Dominican Republic, El Salvador, and Mexico. PAHO continues to carry out coordination activities with other international financing agencies such as USAID, IDB, World Bank, CIDA, UNICEF, UNDP, and with governments interested in supporting programs for the Americas such as Canada, West Germany, the Netherlands, and Japan.

2.80 The IV Meeting of Directors of the National Malaria Eradication Services (NMES) in the Americas in Brasília reviewed and analyzed the political, socioeconomic, and epidemiological situation that countries face. There was insistence on the need to study the determinants of transmission and the variables affecting control more thoroughly, and bases were presented for restructuring the programs. Special emphasis was placed on the fact that, in light of the growing seriousness of the situation, new approaches to control should be given strong support through the mobilization of all national resources, including those of the health sector, in order to work within a truly intersectoral context. Special mention was made of the need to increase manpower training and update existing human resources in regard to the new approaches. The need to make the strategy of technical cooperation among developing countries truly effective in the search for solutions to common problems was stressed. Great importance was placed on strengthening the entire health infrastructure and to including disease control within the primary care strategy, with active community participation in seeking solutions.

2.81 The Organization has continued to cooperate with the countries in strengthening malaria programs: in Haiti, for example, meetings were held with the Dominican Republic to prepare proposals to refinance the program throughout the island of Hispaniola. A review was made of the situation in Peru and the bases established for executing a new integrated program at the level of the health regions. Steps were taken in Mexico to strengthen the process of decentralizing the executive authority. The countries in Central America convened the annual meeting of Ministers and Directors of the National Malaria Eradication Services (NMES), which served to strengthen the coordination of epidemiological surveillance activities, especially in common border areas. Panama carried out a review of its epidemiological situation and found that transmission had been interrupted in extensive areas. Belize restructured its field operations program. Some countries of the Andean area face what is considered an emergency condition, thus a special program was developed to strengthen the epidemiological surveillance mechanisms in the affected areas, financed in part with UNDP funds earmarked for disaster situations. Similarly, steps were initiated to respond to the special needs of the Central American and Caribbean countries.

2.82 Antimalarial activities carried out in 1983 in most countries of the Region continue to be based on the use of residual insecticides, applied inside dwellings in those areas where transmission is greatest. The use of DDT has continued to decline, but in some countries it has been replaced by other insecticides such as fenitrothion, propoxur, malathion, clorfoxim, and synthetic pyrethrines. Some programs used insecticide fogging to combat the vectors. Antimalarial engineering activities were not carried out on a large scale; however, the use of antimalarial drugs showed a significant increase, especially in countries where vector resistance to insecticides is more apparent.

2.83 Annual courses for training of malariologists were held in Mexico and Venezuela, and one was held in Colombia as well. PAHO initiated the preparation of teaching modules to train health service

Figure 4. **Status of the malaria program in the Americas, by groups of countries, in accordance with the magnitude of the problems and progress achieved, 1983**

personnel in the epidemiology and control of malaria, which were tried in the Dominican Republic. The University of South Carolina (USA) gave courses on comprehensive vector control in Spanish, attended by students from Latin American countries.

2.84 Antimalarial research continued to receive support in the areas of immunology, entomology, applied social sciences, epidemiology, and vector control. The Mexican Center for Malaria Research in Tapachula, continued to study the biology and etiology of the vector, as well as new control methods and the evaluation of new insecticides. Tests were initiated in several countries to evaluate the effectiveness of the *Bacillus thuringiensis* H-14 as a control measure. Chemotherapy research continued with the evaluation of the effectiveness, tolerance and pharmacodynamics of

mefloquine in Brazil. Studies have also continued on the possible use of vaccines.

2.85 To summarize the malaria situation in the last 4 years, 33 political units with malarious areas were classified into four groups according to the advances made, problems posed, and plans for improvement. (Table 12 and Figure 4). *Group I* included 30.1% of the originally malarious population of the hemisphere, or 75 million inhabitants in 12 countries or territories where the disease has been eradicated. There was no local transmission demonstrated in this group, and most infections were classified as imported. *Group II*, which represents those countries with good evolution in regard to transmission, includes eight countries with a total of 15.9 million inhabitants (6.4% of those corresponding to the originally malarious area). *Group III* comprises five countries where malaria programs have advanced but the foci of transmission persist, with technical problems that were difficult to solve. This group included 112.5 million inhabitants in originally malarious areas. *Group IV* includes eight countries, with a total population in the malarious area of 45.8 million people, in which a marked deterioration is observed in the epidemiological situation.

2.86 It has been observed that there are countries where the number of cases

Table 12. **Reported cases of malaria in the Americas, 1980–1983**

Group	Population in originally malarious areas, 1983 (*in thousands*)	Cases reported			
		1980	1981	1982	1983
Group I					
12 countries or territories in which malaria eradication has been certified	75,080[a]	2,249	1,599	972	809[b]
Group II					
Argentina	3,656	341	323	567	535
Belize	159	1,529	2,041	3,868	4,595
Costa Rica	697	376	168	110	245
Dominican Republic	5,922	4,780	3,596	4,654	3,801
French Guiana	73	831	769	1,143	1,051
Guyana	836	3,202	2,065	1,700	2,102
Panama	1,923	310	340	334	341
Paraguay	2,635	140	73	66	49
Subtotal	**15,901**	**11,509**	**9,375**	**12,442**	**12,719**
Group III					
Brazil	55,623	169,871	197,149	221,939	297,687
Ecuador	5,126	8,748	12,745	14,633	51,606
Mexico	40,247	25,734	42,104	49,993	61,725[c]
Suriname	281	4,445	2,479	2,805	1,943
Venezuela	11,264	3,901	3,377	4,269	6,077[d]
Subtotal	**112,541**	**212,699**	**257,854**	**293,639**	**419,038**
Group IV					
Bolivia	2,172	16,619	9,774	6,699	14,441
Colombia	18,101	57,346	60,972	78,601	105,360
El Salvador	4,683	95,835	93,187	86,202	65,377
Guatemala	3,002	62,657	67,994	77,375	64,024
Haiti	4,729	53,478	46,703	65,354	53,954
Honduras	3,756	43,009	49,377	57,482	30,784[e]
Nicaragua	3,165	25,465	17,434	15,601	12,907
Peru	6,193	14,982	14,812	14,613[d]	13,660[d]
Subtotal	**45,801**	**369,391**	**360,253**	**401,927**	**360,507**
Grand Total	**249,323**	**595,848**	**629,081**	**708,980**	**793,073**

[a]Estimated data. [b]Incomplete data. [c]Up to November. [d]Up to September. [e]Up to October.

discovered in 1983 was very small, which did not constitute a risk for the return of transmission. The problems of transmission in the Caribbean are limited to the Island of Hispaniola. Haiti and the Dominican Republic are the only countries where transmission is exclusively of *Plasmodium falciparum*. The Dominican Republic experienced the return of practically endemic disease in areas where transmission had been interrupted. The greatest increase in Mexico was registered specifically in the southeastern part of the country.

2.87 Almost one-third of the cases registered in the Americas were concentrated in an area of approximately 200,000 km^2, which includes three countries of the Central American isthmus: El Salvador, Guatemala, and Honduras. Costa Rica and Panama were able to maintain the favorable situation of previous years, due to the duly strengthened surveillance systems that they maintain as part of their programs. Nicaragua succeeded in stopping the increase of cases observed in previous years.

2.88 Progressive deterioration in South America was observed in parts of Bolivia, Colombia, and Ecuador, previously classified as having favorable evolution. The areas of the Amazon basin in the process of colonization showed an increase in morbidity compared to that observed in previous years.

Disease Vector Control

2.89 The vector control operation continues to be the backbone of programs against dengue, malaria, and Chagas' disease. Vaccines solved part of the jungle yellow fever problems. The increased cost of new insecticides, equipment, and manpower continued. With these problems in mind, PAHO technical cooperation was channeled in the following areas:

2.90 ***Aedes aegypti* eradication.** One of the major constraints in this field continues to be the lack of a united effort to eradicate *Aedes aegypti*, the yellow fever and dengue vector. Although health priorities differ, a new approach to maintain all international sea and air ports free of the mosquito is essential. Work continued in 1983 on a plan of action compatible to countries seeking eradication or with resources only for control. *Aedes aegypti* larvae from several countries have been sent to the University of California at Riverside for insecticide resistance screening. Fortunately, the larval or adult mosquitoes were found not to be resistant to organophosphorous compounds. No major dengue outbreaks were reported in 1983. Several countries noted an increase in dengue serotype 2 activity. This could be significant since the Cuban dengue hemorrhagic fever epidemic of 1981 was reported to have come from serotype 2. Many countries become complacent when there is little dengue activity and *Aedes aegypti* eradication programs suffer, the exceptions being Brazil, Costa Rica, Cuba, Ecuador, Nicaragua, Panama, and Trinidad and Tobago; these countries are dedicated to eradication and maintain active eradication or surveillance programs. PAHO collaborated with national staff to provide in-service training for *Aedes aegypti* control in several Latin American countries. Although PAHO and WHO have stressed the need for developing career programs for professional entomologists and vector control specialists, these structures do not exist in most countries. The University of Panama initiated a Master of Science level program in medical entomology that can provide the training needed to achieve national self-reliance in these fields.

2.91 **Chagas' disease.** Through cooperation with the WHO Special Program for Research and Training in Tropical Diseases (TDR) many Member Governments are beginning to define the geographical distribution of Chagas' disease vectors and the epidemiology of the disease. Scientists in Bolivia, Colombia, and Ecuador have carried out control field trials with fenitrothion, and in northern Brazil deltamethrin is replacing hexachloro-cyclohexane (HCH) as the choice insecticide. Vector control activities in Argentina, Brazil, Chile, Uruguay, and Venezuela have been highly successful. Venezuela has been able to decrease insecticide treatments in some plains areas since there has been no indication of transmission for more than 10 years. Brazil is also beginning to undertake epidemiological studies in the southeast since transmission appears to have ceased there as

well. Insecticide screening as such was stopped at the PAHO Center in Maracay, Venezuela. However, individual countries such as Brazil and Venezuela retain excellent screening programs. The PAHO Center continues to evaluate the effect of housing sanitation on *Trypanosoma cruzi* transmission, and the study on community involvement in housing improvement has been expanded.

2.92 **Other vectors.** A survey of pest and vector control activities in some of the large urban areas in Latin American countries has been initiated in cooperation with WHO. This aspect of vector control is becoming increasingly important due to the continuous migration to urban areas. The Danish and Colombian Governments in collaboration with PAHO gave a course on biology and urban pest and rodent control in Bogotá in October. Entomologists from the British Museum (Natural History) serving as PAHO consultants have been working with their Ecuadorean counterparts on the study of the vectors of the foci of onchocerciasis in that country. Although not considered vectors, rodents are the subject of increasing interest. The PAHO Center in Maracay is screening rodenticides and has sent staff to the Cayman Islands, Colombia, and Trinidad to consult on rodent problems. PAHO, in cooperation with the Government of Trinidad and Tobago, gave a course for more than 50 participants from the English-speaking Caribbean from 24 May to 4 June 1983 in rodent biology and control.

Parasitic Diseases

2.93 Parasitic infections continue to be a health problem in the Americas basically due to economic, social, and development factors that result in inadequate environmental sanitation and education conditions in extensive rural and urban areas. PAHO's cooperation activities in 1983 focused on training national health service personnel in diagnostic methods and epidemiology, developing clinical, epidemiological, and control research, as well as on promoting activities for parasitic disease surveillance and control. Chagas' disease, discussed in the previous section, is notable in this group along with other diseases mentioned below.

2.94 The transmission of **leishmaniasis** increased in several countries of the Region, especially in endemic areas where rural development projects are present. PAHO provided technical cooperation to Paraguay and Peru in regard to epidemiological studies underway. In Paraguay there is also collaboration in structuring a surveillance system (identification and treatment of cases) within primary care activities and to design and develop a field research proposal in the most affected areas.

2.95 Three training workshops on the epidemiology and control of **schistosomiasis** were held in 1983. Two were held in Saint Lucia, the first in cooperation with the Government of that country and the University of the West Indies, and the second with financial assistance from the Government of Denmark, through the Danish Agency for International Development (DANIDA). Both were focused on increasing activities for epidemiological surveillance of schistosomiasis in the Caribbean, through cooperation among the health services in the countries of the area. The third workshop took place in Suriname with technical assistance from the Centers for Disease Control (CDC), Atlanta, Georgia (USA), and from the WHO/TDR and focused on designing a methodology to study and control the disease within primary care actions.

2.96 PAHO provides technical support to Ecuador for developing studies designed to evaluate the extent of the focus of **onchocerciasis** in the Province of Esmeraldas. There was also collaboration with the Amazon Center for Research and Control of Tropical Diseases (CAICET) in Venezuela, on the epidemiological study of onchocerciasis in the Amazon region of that country. The Southeast Center for Ecological Research in Mexico received economic support from WHO/TDR to continue studies on onchocerciasis in the southeast of Mexico.

2.97 A seminar-workshop was conducted on **intestinal parasitic diseases** in the Dominican Republic at the Autonomous University of Santo Domingo to review parasitological diagnostic methods of intestinal parasitic infections and the methodology for teaching parasitology to

clinical laboratory students. PAHO collaborated in analyzing the results of parasitological surveys carried out in Peru, under the supervision of the Alexander von Humboldt Institute of Tropical Medicine, as well as in discussing possible measures for controlling those parasitic diseases in areas where they are identified as serious health problems.

Acute Respiratory Infections

2.98 Progress was recorded in 1983 in the coverage of the program to control children's acute respiratory infections (ARI). A control program with simple standards, adapted for application within a primary health care framework, was applied by Brazil in the State of Pará and is being extended to other states. A control program developed in Panama, that included standards for care and is being extended gradually, received financial support from WHO/AGFUND and advisory services from PAHO. Argentina, Guatemala, and Honduras prepared national standards with PAHO participation. Indications for treating moderate and serious ARI children's cases were prepared in Paraguay. Priority in research was given to clinical-etiological studies of ARI in children under 5 years of age. Studies were initiated during 1983 in Belém and Rio de Janeiro (Brazil) and studies supported in Argentina, Panama, Peru, and Uruguay. PAHO collaborated in coordinating these studies and in providing materials and reagents, both with its own funds and using donations from other institutions such as the Laboratory Center for Disease Control (LCDC) in Ottawa, Canada. A regional workshop, organized by PAHO, was conducted on rapid techniques in ARI bacteriology and virology in Santo Domingo, Dominican Republic. A similar national course took place in Cuba. Information on controlling ARI was transmitted by national courses on tuberculosis in Argentina, Brazil, Chile, Cuba, Mexico, and Venezuela. This same material was also presented in the maternal and child health course at the Latin American Center of Perinatology (CLAP) in Uruguay. PAHO coordinated activities that included ARI in children with other institutions such as UNICEF and the Board on Science and Technology for International Development (BOSTID).

Tuberculosis

2.99 Tuberculosis control is still a priority for most countries in the Region. Although the death rate is continually declining, it still accounts for more than 35,000 deaths a year in the hemisphere. Cost reduction of the most effective drugs has facilitated extending short-term treatments (6 to 9 months), that, combined with extended program coverage through the general health services, is increasing the trend to lower mortality. The real incidence of tuberculosis is probably declining as well, although at a much slower rate. The decrease of the incidence rates is estimated at about 5% annually. Considering the population growth, the decrease of the absolute number of new cases is very slow. Recognizing the importance of using bacilloscopy for diagnosis and integration of case-finding into general health services has made detecting many unapparent cases possible. Therefore, the number of registered cases has increased to a figure higher than 250,000 in 1983. A study of samples of schoolchildren not yet vaccinated with BCG provided estimates of annual risk of infection in some countries. Increased vaccination coverage and the relative representativeness of schoolchildren in different areas means that the problem still has to be measured by a careful analysis of the data on risk, incidence, mortality, as well as information on the programs' quality in terms of coverage and registration. The evaluation of control programs, training managerial personnel, developing laboratories for bacteriological diagnosis and for the production of BCG were stressed in 1983. A project was begun in Colombia to review the tuberculosis control program funded by WHO/AGFUND. Courses were held in Argentina, Brazil, Chile, Cuba, Mexico, and Venezuela on epidemiology and tuberculosis control, with professors and fellows from other countries of the Region participating. A regional course was given in Mexico on tuberculosis bacteriology with participation of the Pan American Zoonoses Center. The review of the Manual on Tuberculosis Bacteriology for Latin America

was begun. The Laboratory Center for Disease Control (LCDC) of Ottawa, Canada, coordinated national studies on bacilloscopy quality, bacterial resistance, and isolation of atypical mycobacteria, and collaborated in training PAHO fellows and reviewing the Manual. A protocol on *Mycobacterium*-resistant tuberculosis was adopted by WHO for study at the world level of a sample of patients with lung TB from the Americas. The National Institute of Epidemiology (INE) of Argentina initiated an epidemiological evaluation of the tuberculosis problem and trends, with assistance from PAHO. This document will be considered the basis for evaluating the impact of the programs for the next 20 years.

Leprosy

2.100 There are a total of 292,000 registered leprosy cases in Latin America and the Caribbean; of these, 21,000 new cases were reported in 1983. These figures do not however reflect the real situation, since the case finding, recording, and reporting systems are still weak. Fifty percent of all cases in the Region are multibacillary. The occurrence of the disease in children under 15 years of age reaches an average of 9% with variations between 42% and 2%. The urban-rural distribution of leprosy has changed in the last two decades, currently the concentration of patients is greater in urban areas. The situation is more complex now due to the recent discovery that *Mycobacterium leprae* is resistant to the drug dapsone. The resistance rate in the Americas is still unknown, but in other continents it was recorded at more than 100 per 1,000 patients. If *M. leprae* resistance to dapsone increases and spreads to other drugs, leprosy will be a much more difficult problem to control by the year 2000, unless other more effective measures to combat it are discovered.

2.101 Multidrug therapy was implemented in many countries of the Region with PAHO support. The Pan American Center for Research and Training in Leprosy and Tropical Diseases (CEPIALET) in Caracas, Venezuela continued its research with PAHO/WHO-TDR's support and testing of a leprosy vaccine. PAHO also granted 14 fellowships to professionals from several countries to attend an annual sanitary dermatology course, sponsored by CEPIALET and the Alfredo da Matta Institute of Dermatology of the Amazonas State in Manaus, Brazil. The Collaborating Center of Bauru, Brazil also sponsored several courses on disease control for health personnel from several Brazilian States. Eight workshops on program evaluation and multidrug implementation were carried out in the Caribbean, Argentina, Dominican Republic, Guatemala, and Mexico. Two national seminars on multidrug therapy and program reorganization were held in Peru and Brazil; collaboration was given to the International Seminar on Leprosy Research and Control held in Venezuela.

2.102 The leprosy control activities carried out in 1983 received substantial financial support from nongovernmental and volunteer collaborating agencies: the Japanese Shipbuilding Industry Foundation (Sasakawa Memorial Health Foundation), the Damien Foundation, and the Leprosy Relief Work Emmaüs, Switzerland.

Diseases Subject to International Health Regulations

2.103 **Cholera.** The two cases Canada reported were imported from Asia. The case the United States reported was imported from Mexico: toxigenic *Vibrio cholerae* 01 biotype El Tor, serotype Inaba was isolated in a 31-year-old female resident of New Jersey, who visited Cancún, Mexico in June 1983. This was the first time toxigenic *Vibrio cholerae* was isolated in this Region. Intensive epidemiological investigation carried out in Mexico revealed an important local problem with nontoxigenic *Vibrio cholerae* in the area of Cancún, however, no additional cases of toxigenic *Vibrio cholerae* have been identified.

2.104 Yellow Fever. South America reported 51 cases in 1983 (Table 13). This represents a decrease in the past 2 years of the incidence of yellow fever (YF), since there were 231 and 137 cases reported in 1981 and 1982, respectively. Brazil and Colombia are modernizing their laboratory facilities for producing the 17D YF vaccine in response to recommendations made by a group of experts during a PAHO meeting

Table 13. **Diseases subject to the International Health Regulations: cholera, yellow fever, and plague cases and deaths reported in the Region of the Americas as of 31 December 1983[a]**

Country and main administrative subdivision	Cholera[b] Cases	Yellow Fever Cases	Yellow Fever Deaths	Plague[b] Cases
Bolivia				
Beni	—	1	1	—
Cochabamba	—	8	8	—
La Paz	—	3	3	21
Total	**—**	**12**	**12**	**21**
Brazil				
Amazonas	—	1	1	—
Bahía	—	—	—	8
Ceará	—	—	—	61
Pará	—	2	2	—
Rondonia	—	3	3	—
Total	**—**	**6**	**6**	**69**
Canada				
Winnipeg	1[c]	—	—	—
Ontario	1[c]	—	—	—
Total	**2**	**—**	**—**	**—**
Colombia				
Santander	—	1	1	—
Total	**—**	**1**	**1**	**—**
Ecuador				
Chimborazo	—	1	1	65
Pastaza	—	4	—	—
Total	**—**	**5**	**1**	**65**
Peru				
Huanuco	—	1	1	—
Loreto	—	1	1	—
Junín	—	4	4	—
Madre de Dios	—	4	4	—
San Martín	—	17	16	—
Piura	—	—	—	17
Total	**—**	**27**	**26**	**17**
United States of America				
Arizona	—	—	—	10
California	—	—	—	1
Colorado	—	—	—	1
New Jersey	1[c]	—	—	—
New Mexico	—	—	—	26
Oregon	—	—	—	1
Utah	—	—	—	1
Total	**1**	**—**	**—**	**40**
Grand total	**4**	**50**	**45**	**212**

— None.
[a]Provisional data.
[b]No deaths were reported.
[c]Imported cases.

held in Washington, D.C., in 1981. One major goal of this effort is to develop and utilize a thermostabilizer for the vaccine. PAHO held a workshop on the laboratory diagnosis of yellow fever and arboencephalitis in April 1983, at the National Institute of Health, Bogotá, Colombia—where both conventional and rapid techniques were taught. The rapid procedures, ELISA (enzyme-linked immunoabsorbent assay) and IF (immunofluorescence) were used to detect virus and antibodies, including the YF antigen with IF in preserved liver specimens. A total of 12 participants from Argentina, Brazil, Colombia, Dominican Republic, Peru, and Venezuela attended the workshop.

2.105 **Plague.** A worldwide resurgence of plague occurred in 1983 in well-known endemic foci, including Latin American countries and the United States. The 40 cases reported by the United States represent the largest number of cases registered in a single year since the Los Angeles pneumonic plague endemic of 1924. All the endemic countries in South America—Bolivia, Brazil, Ecuador, and Peru—experienced an increase in cases (Table 14).

2.106 PAHO collaborated in strengthening control efforts in Peru by providing technical information, diagnostic reagents, and supplies.

Table 14. **Reported cases of plague in the Region of the Americas, 1981–1983**

Country	Year 1981	1982	1983
Bolivia	21	3	21
Brazil	59	151	69
Ecuador	9	—	65
Peru	27	4	17
United States of America	13	18	40
Total	**129**	**176**	**212**

Viral Diseases

2.107 Continued support has been provided by the PAHO Viral Disease Program to strengthen national laboratories, improve technologies to prevent disease, and conduct epidemiological research. Training,

supplying reagents, advisory services, proficiency testing, and distribution of technical manuals constitute the main strategies for upgrading diagnostic capabilities. Developing new viral vaccines and modernizing the production of existing ones are among the main goals to make new or improved tools available for control programs. Investigation to determine and measure the impact of viral diseases, their transmission mechanisms, and other aspects are most valuable for control programs.

2.108 **Viral hepatitis.** There are an estimated 1.4 million chronic hepatitis B virus (HBV) carriers in South America. Chronic infection, especially when the infection occurs early in life can lead to long-term sequelae such as chronic active hepatitis, cirrhosis and hepatocellular carcinoma. A hepatitis strain that comes from a delta agent has been recognized in several countries in South America. Fatality rates of 20% have been recorded and about 60% of the survivors develop chronic sequelae. PAHO's role in this field has focused mainly on upgrading diagnostic capabilities and supporting research. Reagent kits for detecting HBsAg (surface antigen) with the ELISA technique, prepared at the WHO Collaborating Center for Reference and Research on Viral Hepatitis, U.S. Centers for Disease Control (CDC), in collaboration with researchers at the Oswaldo Cruz Foundation (Brazil), were distributed to all the participants of the workshop held in Rio de Janeiro, in August 1982. PAHO sponsored a consultant provided by the WHO Collaborating Center for Reference and Research on Viral Hepatitis, CDC, to the Instituto Evandro Chagas (Brazil), to design a study on viral hepatitis in the Purús River, Amazon Region. Cooperation between the two institutions provided strong evidence that delta agent is present in the area. PAHO also continued its support for the Yucpa project in Venezuela that seeks to clarify the epidemiology and natural history of infections due to delta agent, as well as to evaluate the protection that HB vaccine provides against HB and delta infections.

2.109 **Hemorrhagic fever with renal syndrome.** PAHO continued to coordinate a collaborative study between the Instituto Evandro Chagas and the U.S. Army Medical Research Institute of Infectious Diseases to understand the meaning of the presence of immunity to Hantaan virus in humans and urban rodents of the Amazon Region.

2.110 ***Herpes simplex.*** An evaluation of monoclonal antibodies for typing *Herpes simplex* virus isolates from Latin America and the Caribbean was initiated in collaboration with the Laboratory Center for Disease Control (LCDC), Ottawa, Canada. The first stage of the study is underway, and LCDC is typing strains received from several countries. Once the evaluation is complete, LCDC can supply monoclonal antibodies to laboratories participating in the study.

Sexually Transmitted Diseases (STD)

2.111 This STD group includes the five classic venereal diseases—gonorrhea, syphilis, chancroid, *lymphogranuloma venereum* and Donovanosis (or *granuloma inguinale*)—as well as approximately 20 additional diseases and their consequences. Research in the past 5 years has contributed to increase the basic information on the epidemiological and clinical aspects of this large group of diseases. The public health importance of their consequences and sequelae has also been illustrated in women and children, e.g. pelvic inflammatory disease, infertility, and pneumonia of the newborn. In 1983 an STD working group recommended stressing further development of training efforts in epidemiology, clinical management, and control program development. PAHO continued its technical support for the Inter-American Study on the Antibiotic Susceptibility of *Neisseria gonorrhoeae* funded by Canada's International Development Research Center (IDRC). Chile completed its project and demonstrated the effectiveness of penicillin and tetracycline for clinical management.

2.112 In 1983, the recently described acquired immune deficiency syndrome (AIDS) received international attention; cases were reported from countries in North America, South America, the Caribbean, Europe, and Africa. Local transmission of AIDS is documented in Canada, Haiti, and the United States. PAHO collaborated in

defining the epidemiology of AIDS in this Region by cosponsoring a Special Meeting on AIDS for countries with possible AIDS problems, with the U.S. National Institutes of Health, the U.S. Centers for Disease Control, and the Canadian Laboratory Center for Disease Control. The meeting was attended by scientists and public health officials from Argentina, Bahamas, Barbados, Brazil, Canada, Cuba, Dominican Republic, French Guiana, Haiti, Suriname, Trinidad and Tobago, United States, and the U.S. Virgin Islands. PAHO distributed updated technical information on epidemiological, clinical, laboratory, and immunological aspects of AIDS as well as recent developments in research to all Member Countries.

Prevention and Control of Noncommunicable Diseases

2.113 Noncommunicable diseases show an increasing importance in the countries of the Region, especially since there are advances being made in controlling infectious diseases and changes are taking place in the population structure. This year a final report on studies of rheumatic fever and arterial hypertension in progress for 5 years was completed. The feasibility of establishing programs for controlling these diseases within the general health services was demonstrated. These and other studies underway—such as those on preventing cardiovascular diseases (PRECAVAS), chronic rheumatism, diabetes mellitus, chronic allergies, cancer of the cervix—facilitated producing a series of operational manuals within the primary care strategy aimed at integrating program activities into different levels of care.

Cardiovascular diseases have priority in the current health panorama, since they continue to be one of the important components in the health profile of several countries in the Region, e.g., the Southern Cone, the Caribbean, Colombia, Cuba, Panama, and Venezuela. The Organization brought a working group together in Washington, D.C., in June, with participants from Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Jamaica, Mexico, Panama, Peru, Trinidad and Tobago, the United States, Uruguay, and Venezuela. The importance of finding innovative strategies for attending to the problems associated with chronic noncommunicable diseases was discussed within the context of integrated prevention and control programs. Among them was integrating actions for specific diseases and risk factors within the general health services at all levels of care. A regional project was approved for monitoring these programs under PAHO's responsibility entitled MORE (Project for Regional Monitoring of Integrated Programs for Chronic Disease Control). The following program priorities discussed by the working group were identified: arterial hypertension, diabetes mellitus, coronary heart diseases and cardiovascular risk factors, cancer of the cervix, and others important in some countries, such as breast cancer, rheumatic fever, chronic rheumatisms, chronic respiratory diseases, endemic goiter, and sickle-cell anemia. Prevention and control measures were identified, as were risk factors that have a synergistic effect on more than one disease, such as smoking, obesity, eating habits (diets rich in saturated fats), sedentary lifestyle, and other undesirable health habits. The primary care strategy and its components were recognized by the working group as fundamental to develop the integrated control programs. PAHO also collaborated in a seminar on programs for chronic diseases in the Caribbean held in Barbados, in January, that focused mainly on arterial hypertension, diabetes, and cancer. It participated in training epidemiology personnel at a seminar held in Venezuela (November-December) on controlling chronic and cardiovascular diseases.

2.114 PAHO prepared bibliographical material on psychosocial factors and cardiovascular diseases and participated in a seminar on the use and future perspectives of epidemiology (Argentina, November). The MORE project provides a setting to achieve rationalization of PAHO regional technical cooperation with participating countries.

2.115 **Blindness prevention.** There are six diseases in the Americas that can cause blindness: trachoma, glaucoma, cataracts, ocular traumatism, xerosis, and

onchocerciasis and which are considered by WHO to be preventable and/or controllable. The PAHO strategy in this field is to develop programs to include eye care regularly as part of primary health care. The strategy is based on community participation and on training health auxiliaries to carry out simple detection methods and treat the diseases or immediately refer the person to the appropriate professional. PAHO provided technical assistance to Bolivia, Venezuela, and some Caribbean islands. A group of specialists from several countries in the Region participated in preparing a primary eye care manual, to be distributed in 1984. The Government of Barbados, the Caribbean Community (CARICOM), the Royal Commonwealth Society for the Blind, and PAHO sponsored a seminar in Barbados in November on blindness prevention with participants from 14 countries and Caribbean territories and eight international agencies, where concrete plans were formulated for eye care activities. Research on the epidemiological characteristics of trachoma continued in selected communities in the State of Chiapas, Mexico, and the study on the prevalence of glaucoma in São Paulo, Brazil, was concluded. Seeking to interest ophthalmologists in this activity, PAHO participated in a round table discussion on preventing blindness at the XIV Congress of the Pan American Society of Ophthalmology held in Lima, Peru in July. It was the first time that this organization, which represents about 18,000 ophthalmologists in the Americas, formally included blindness prevention on the agenda. Its members collaborated in providing PAHO with relevant information from many countries on predominant eye problems, prevalence of blindness, number of ophthalmologists, etc., which is useful for planning care, training, and research activities currently promoted by PAHO in the countries in the Region.

2.116 **Cancer.** Malignant neoplasms are the second highest cause of mortality in 30 of the 37 countries of the Americas. Cervical cancer stands out as the most severe problem. In 1983, PAHO cooperated with Argentina, Bahamas, Barbados, Brazil. Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, Panama, Peru, Uruguay, and Venezuela in the following areas: primary prevention, early detection and screening, diagnosis, treatment, information and education, as well as training health professionals. PAHO is conducting courses on cancer epidemiology to strengthen cancer control programs as part of a comprehensive, multidisciplinary approach, integrated into general health services. Hospital-based cancer registries will also improve the validity of the data needed to plan and evaluate cancer health services.

2.117 PAHO's role is organized in three programs: information, research, and technical assistance. The need for a cancer information service on specific topics has been evident since the Latin American Cancer Research Information Project (LACRIP) was started in 1976. This Project, a joint PAHO and National Cancer Institute (NCI, USA) effort includes not only disseminating cancer information, but gathering information from articles, projects and protocols produced in Latin America as well. The data are loaded into the International Cancer Research Data Bank's (ICRDB) three cancer databases: CANCERLIT, CANCERPROJ and CLINPROT. The Regional Library of Medicine and the Health Sciences (BIREME) in São Paulo, Brazil, participated in organizing a LACRIP Selective Dissemination of Information (SDI) service. A quarterly SDI publication covering 15 areas is sent to approximately 2,000 suscribers in 21 countries in the Region. The information is organized by tumor site and provides background on diagnosis, staging methods, epidemiology and therapy. Updated bibliographies and reviews are included.

2.118 Nine countries in Latin America (Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, Uruguay, and Venezuela) participate with PAHO in the Collaborative Cancer Treatment Research Program (CCTRP) that has undertaken research on Phase II and III studies. The studies cover surgery, radiotherapy, chemotherapy, and immunotherapy. The data were discussed at the annual meeting of all CCTRP researchers and have been

presented at major U.S. and Latin American oncology meetings, such as the American Society of Clinical Oncology (ASCO) and the Society of Cancer Research (SCR). Research reports have been published in 44 publications or abstracts. Since 1977, 30 protocols have been completed and closed, 21 protocols are active and 13 are in the process of being approved. Approximately 600 new cancer patients were registered as part of these clinical studies in 1983, and 2,954 patients have been studied in CCTRP protocols during the 6 years of the Program. There are three basic methods for the adequate treatment of cancer: surgery, radiotherapy, and chemotherapy. PAHO collaborated in quality control assessment of radiotherapy in Colombia, Costa Rica, Mexico, and Peru. A quarterly newsletter initiated in 1983 is now distributed to all U.S. and Latin American investigators. Substantial activity during the year focused on establishing regulations and procedures for an Institutional Review Board (IRB) in each institution, and to develop appropriate forms and procedures for informed patient consent to participate in the Phase II or III studies. The Cancer Epidemiology Conference and Workshop cosponsored by the National Cancer Institute (NCI, USA) and PAHO held in 1982 in Washington, D.C., identified areas for collaborative epidemiological research in Latin America. Gall bladder cancer was identified as the third most common cancer among Bolivian women. Consequently, a proposal for a biochemical epidemiology study of biliary tract cancer was submitted for funding and approved by the National Institutes of Health (NIH) in 1983. PAHO coordinates project activities for the study being carried out by the University of Pennsylvania, the Autonomous University of Mexico, and the Methodist Hospital in La Paz, Bolivia.

2.119 The human T-cell leukemia virus (HTLV) is another prospective field for cooperation between PAHO and its Member Governments. This virus, unique among all known type C animal viruses, appears to be the first true human leukemia virus of this type. Many HTLV have been isolated from patients in Japan and from blacks born in the West Indies who live in England. PAHO helped sponsor Jamaica to participate with the NCI in an HTLV project. Information about this new virus was circulated to all countries in the Region. A summary of the virological, epidemiological, and clinical aspects of the disease was prepared and published by PAHO in *Cancer Therapy Update*, in May 1983.

2.120 PAHO participated with WHO in compiling a list of essential drugs for cancer chemotherapy. An Expert Advisory Committee met in Geneva in October 1983 to select drugs potentially able to cure neoplastic diseases such as Hodgkin's disease, lymphomas, leukemias, Wilms tumor, chriocarcinoma, testis and soft tissue carcinomas. At that time, the Committee proposed and approved a list of essential antineoplastic drugs. Providing continuous educational opportunities for cancer specialists, clinicians, and pediatricians interested in cancer has also been part of PAHO activities in the past year. PAHO and the International Union against Cancer participated in advanced post-graduate courses on clinical oncology (São Paulo, Brazil), and pediatric oncology in Bogotá, Colombia, and Guayaquil, Ecuador.

2.121 One of the major problems facing most countries in the Region for planning and delivering adequate cancer treatment is the availability and cost of most antineoplastic drugs. Chemotherapy, for all practical purposes, is not an option for cancer patients in those countries where there is no social security system or where drugs are not provided at a reduced cost. Venezuela, however, created an excellent prototype to fill this void by establishing an Antineoplastic Drug Bank. This non-profit organization imports drugs useful for treating cancer and distributes them to health organizations (Social Security, Ministry of Health, University Hospital, and private practitioners), at cost so that low-income patients can obtain them at reduced prices or free of charge.

Veterinary Public Health

2.122 PAHO focused its activities in veterinary public health during 1983 on cooperating with the countries of the Region in campaigns to control zoonoses and foot-

and-mouth disease, through professional staff stationed at Headquarters, in subregions and countries, as well as through the Pan American Foot-and-Mouth Disease and Zoonoses Centers. These Centers' activities are further described in Chapter 3. "Mobilization of Technical and Financial Resources."

2.123 The III Inter-American Meeting on Animal Health at the Ministerial Level, RIMSA III, was held in Washington, D.C., in April 1983. There were 34 countries represented, with observers from six international institutions. Several resolutions were approved that dealt with supporting new PAHO cooperation perspectives, among them the Pan American Zoonoses and Foot-and-Mouth Disease Centers' budgets, and policies and strategies for combating rabies in the Americas. Parallel to the RIMSA III Meeting, a joint PAHO/WHO expert consultation meeting was held at PAHO Headquarters in Washington, D.C., in April, on the veterinary profession's participation in primary health care. There were 30 experts from the Americas, Africa, and Europe participating, who developed specific recommendations on the role of veterinary medicine to achieve the goal of health for all by the year 2000. Following RIMSA III recommendations, a coordination meeting was held in Guayaquil, Ecuador, in December on controlling urban rabies in the Americas. PAHO consultants participated in this meeting with representatives responsible for urban rabies control programs in eight countries of the Region. Participants analyzed the working document, "Strategy and Plan of Action for the Elimination of Urban Rabies in Latin America by the End of the Decade 1980." This document will be sent to the Governments of the Americas after final editing to provide guidelines for eradicating urban rabies.

2.124 The Regional Program for Training in Animal Health in Latin America (PROASA) was initiated early in 1982 to train veterinary professionals. In 1983 a total of 388 professionals benefitted from training in 16 courses in nine countries on: administration of animal health programs (2); animal quarantine (2); social communication for animal health education (1); epidemiological surveillance (1); systematic vaccination with oil-adjuvant foot-and-mouth disease vaccine (9); and production and control of oil-adjuvant vaccine (1). PROASA has a nonreimbursable grant from the Inter-American Development Bank (IDB), executed by PAHO, which is scheduled for a duration of 3 years.

2.125 PAHO continued to collaborate with the Government of Guyana in establishing the veterinary diagnostic laboratory at Mon Repos, on the outskirts of Georgetown. The project, financed by UNDP, with PAHO acting as executing agency, set up a laboratory, that in addition to its diagnostic work, offers in-service training and carries out research to determine the economic importance of the diseases. It works closely with the health services, especially the Central Medical Laboratory of Guyana and St. Joseph's Mercy Hospital. The project is now in its final phase, the last consultant will leave the laboratory in May 1984, when international participation is scheduled to end, though it is hoped that PAHO will be able to continue to provide support through short-term consultants.

2.126 PAHO continued to promote the program for preservation, reproduction, and study of nonhuman primates in Brazil and Peru in 1983. The Primate Reproduction Station in Brazil operates in Belém under the Special Public Health Service Foundation (SESP). This year the third reproduction unit was completed and the professional staff was trained. Special attention was placed on raising *Cebus apella* for research on Chagas' disease, as well as on marmosets and tamarins at the National Primate Center at Belém. Studies are being done on raising gray-necked *Aotus* of cariotypes suitable for malaria research and on establishing a colony of *Cercopithecus aethiops* for producing a poliomyelitis vaccine. The Primatology Program in Peru is carried out at the Primate Reproduction and Preservation Station at Iquitos and on the Amazonas Islands, with several local entities participating, especially the Ministry of Agriculture, the Ministry of Health, and the Veterinary Institute for Tropical and

Altitude Research (IVITA) of the National Superior University of San Marcos. Very good results have been achieved in studies on captivity raising, on the reproduction of *Saimiri sciureus* and *Cebuella pygmaea* used in behavior studies, *Aotus* in malaria studies, and *Saguinus labiatus* in hepatitis studies. Special attention has been given in the field work and on the islands to community participation, primary health care, integrated rural development, and population studies. The PAHO contract with the U.S. National Institutes of Health (NIH) for primatological studies will end in June 1984. A new contract under consideration includes USAID participation in addition to NIH. Greater emphasis will be placed on the gray-necked *Aotus* in the future, since it is ideal for studies on malaria.

Emergency Preparedness and Disaster Relief Coordination Program

2.127 The year 1983 marked a major step forward in the development and consolidation of PAHO's technical cooperation with Governments in emergency preparedness and disaster relief coordination. PAHO signed a five-year funding agreement with the Government of Canada in March. Short-term funding provided by the European Economic Community, the Swedish International Development Authority, and the Office of U.S. Foreign Disaster Assistance complement the Canadian funds. Channeled through the Canadian International Development Agency, these funds guarantee that activities initiated at the regional level can be supported at the national level long enough to institutionalize disaster preparedness programs in disaster-prone countries of the Region.

Disaster Preparedness

2.128 The important activities in 1983 were: developing a standardized method to assess health needs within the first 48 to 72 hours following the impact of a disaster; collaboration with all the public health schools in the Region; designing a health management work program for displaced persons; and the production of a public awareness film.

2.129 Timely and objective information on needs following major disasters is essential for relief management and rapid rehabilitation. PAHO held extensive discussions in May on this matter in consultation with other agencies, such as the United Nations Disaster Relief Office (UNDRO), the United Nations Children's Fund (UNICEF), the League of Red Cross Societies, the U.S. Centers for Disease Control, and the WHO Collaborating Center on Disaster Epidemiology. The steps to be taken are: define the essential information required by health relief officials and donor agencies; draft a checklist for review by national authorities and major donor agencies; and prepare a training package for field testing. Guidelines for rapid field assessment of needs in the wake of floods were drafted during the year and will be used to design standardized instruments for the training package. The program emphasized collaboration with other sectors and agencies in this effort so that the final assessment criteria would have multisectoral application. PAHO staff in the Caribbean worked on perfecting a procedural manual for the interdisciplinary first response team available to assist national authorities when a disaster strikes.

2.130 The program focused on collaborating with the public health schools and other training institutions in Latin America and the Caribbean, so that teaching hours in the curriculum for graduates in the health professions would include covering subjects on major issues in disaster preparedness and relief. At the Association of Schools of Public Health of Latin America and at the Caribbean meeting, sponsored by PAHO in Washington, D.C., (November-December), curriculum coordinators and school directors reviewed training materials prepared by PAHO and discussed their use in this new endeavor. A set of recommendations to initiate curriculum changes and train faculties over a two-year period (1984-1985) was unanimously approved.

2.131 In-house discussions were held with other programs in order to initiate a project of PAHO assistance to national authorities regarding the special health problems posed by the growing concentrations of displaced populations. Mexico will host the first policy meeting on health problems of displaced persons in February 1984. Representatives from the U.N. High Commissioner for Refugees, the International Committee of the Red Cross, the League of Red Cross Societies, UNICEF, and the Governments of Mexico and Central America will attend.

2.132 The program embarked on producing a public awareness film concerning the myths surrounding disasters and the best approach for an effective relief effort. The purpose of the film is to create an informed public constituency in support of technically sound emergency measures. Consultation on the film project with other agencies involved in disaster relief was initiated. Final scripting and production will commence in mid 1984.

2.133 The program concentrated on meeting its goal of strengthening national programs for disaster preparedness presently underway. Cooperation was provided to draft comprehensive national health sector plans. Other key areas targeted by national authorities for technical cooperation in 1983 were hospital preparedness, environmental health, and technological disasters, as explained below.

2.134 Many hospitals and health services in the Region are poorly prepared to attend more than a few severe casualties at a time. National governments, hence, have singled out hospital disaster preparedness as an area of great concern. PAHO's technical cooperation was offered as a joint effort of the disaster preparedness and emergency medical services programs. They collaborated closely with the Social Security Institutes of Central and South America and provided continuous support for projects initiated by the health ministries. Four hundred and sixty persons ranging from hospital directors and nursing supervisors to regional and provincial health directors received training throughout the year, at the 10 seminars and courses offered on the subject. These persons are, in turn, expected to organize training sessions for persons under their supervision at the institutional level. A hospital vulnerability survey questionnaire was designed for key hospitals in Latin America as a corollary activity aimed at the maximum use of existing hospital resources. The surveys and recommendations will help institute standards to reduce operational vulnerability.

2.135 Sanitary engineers and other environmental health professionals play a highly specialized and critical role in the event of disaster. The Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) and the PAHO Environmental Health Program continued to develop comprehensive training modules on vulnerability analysis of water supply systems, emergency assessment of needs and postdisaster rehabilitation of sanitary services for Latin America. In the Caribbean, the PAHO environmental health staff and the Pan Caribbean Disaster Preparedness and Prevention Project began a similar task for the English-speaking island nations. Once the modules have been tested and revised, they will be used to train a core of instructors to disseminate the concepts at national level, so that these become a part of routine training programs for environmental and sanitary engineers. CEPIS also developed a training package on the use of Millipore kits for water testing in post-flood disease surveillance systems. The training package, successfully used in Peru, will be reproduced and made available to other flood-prone countries.

2.136 In accordance with Resolution XL of the XXVII Meeting of the Directing Council, PAHO gradually undertook technical cooperation in the area of emergencies directly or indirectly caused by human activities, such as chemical accidents, fires, explosions and mass transportation accidents. With seed funding from the Office of U.S. Foreign Disaster Assistance, the Pan American Center for Human Ecology and Health (ECO) prepared a preliminary vulnerability profile of the Region with emphasis on chemical emergencies. The profile and several case studies will be used as background documents for a meeting that ECO will sponsor in 1984 in collaboration

with the WHO Global Program on Chemical Safety and the WHO Regional Office for Europe. The workshop is intended to acquaint high-level health authorities from selected countries at risk with the health implications of technological disasters.

Disaster Relief

2.137 Severe floods continued to have an impact on the health sector of several countries in the Americas during 1983. The most seriously affected were Argentina, Bolivia, Ecuador, El Salvador, Honduras, Paraguay, and Peru. An earthquake of 5.5 magnitude (Richter) shook the colonial city of Popayán, in Colombia, destroying 70% of the houses. The death toll was fortunately relatively low compared to other major earthquakes. PAHO staff offered direct technical cooperation to the disaster-stricken areas, traveling there to assist national authorities in the assessment of needs. Moreover, PAHO channeled over US$400,000 in relief assistance for the health sectors of these countries. In addition to direct assistance from the PAHO Disaster Relief Fund, the Organization obtained and channeled donations from concerned agencies to affected governments. The Canadian International Development Agency provided US$89,736.87 for supplies and equipment for flood relief in Bolivia and Peru. The Governments of the United Kingdom and Italy provided US$203,032.21 through the U.N. Disaster Relief Office mainly for post-flood emergency vector control programs in Ecuador. The European Economic Community donated US$110,457.21 worth of supplies and equipment for community level health relief in Paraguay. PAHO also completed negotiations in 1983 with the Canadian Embassy in the U.S.A. for a US$20,700 grant for medical supplies to hospitals in El Salvador.

Chapter 3. Mobilization of Technical and Financial Resources

3.1 Developing a new management strategy for PAHO created the need for an articulate identification and organization of those technical cooperation activities that strengthen national capacity required for solving problems. This can be achieved by: generation and dissemination of knowledge, mobilization of institutional resources, technical cooperation among countries, and mobilization of technical and financial resources. Results of these components of the management strategy are summarized in this chapter. The most outstanding activities are: generation of knowledge (research and development of technology), dissemination (information networks), mobilization of the institutional capacity (regional and national centers), technical cooperation among countries, and mobilization of external resources.

Generation of Knowledge

Research

3.2 Activities that promoted and supported research contributed to strengthening the countries' capacity and skills. These actions were grouped under two main areas: (1) formulating and applying health research policies, and (2) coordinating and promoting health research.

3.3 **Formulating and Applying Research Policies.** The proceedings and conclusions of the Pan American Conference on Policies of Health Research held in Venezuela in April 1982 were published and widely distributed as part of the process of promoting and applying national research policies, since they include basic criteria for designing or redefining policy. The scientific activity indicators and the research on the determinants that affect the development of knowledge are considered basic elements for formulating policy. Since this information makes it possible to determine needs, set development goals, apply and supervise research programs, PAHO organized—as a result of a first meeting held in Washington, D.C., in January 1983 entitled, "Information System on Scientific Activity in the Field of Health,"—a second meeting in Rio de Janeiro, in December, on "Indicators of Scientific Activity in Health." Different ways to focus on greater standardization of nationally developed indicators and stimulate the study of health research determinants were presented at this meeting. A study was initiated to gather information about scientific health publications written in Latin America and the Caribbean during the period from 1973-1982. This information will allow for the development of a series of comparative analyses of trends during that period, thereby facilitating the development of additional criteria to plan scientific and technical activity. PAHO collaborated with national institutions in Argentina and Brazil on developing national management seminars on administering health research institutions to analyze experience with research policies, planning and programming, administration and leadership, human resources, and financing

and budget. The National Council of Science and Technology of Peru and PAHO developed a seminar on managing health research projects to help health research personnel become familiar with systems and probability techniques involved in planning, programming, and controlling research projects. Brazil and other countries in the Region participated in initiating development of a diagnostic methodology for specific management aspects of research institutions. This diagnosis will make the adaptation of seminars and courses to the real needs and requirements of the countries of the Region possible in the future.

3.4 **PAHO Advisory Committee on Medical Research (ACMR).** The XXII Meeting of the Advisory Committee took place in Mexico City in July. Recommendations were formulated regarding health service research, research management, WHO Collaborating Centers, migration and health, acute respiratory infections, mental and environmental health. The ACMR recommended that "PAHO Research Policy" be a permanent part of the agenda, and that an analysis be made of the Pan American Conference on Health Research Policies' "Health Research Policy" document at the next meeting. It also recommended that a study be made of the effect of the current economic crisis on health research and that appropriate measures be presented to the governments of Member Countries regarding the desirability of neutralizing the factors that negatively affect conducting research.

3.5 Coordination and development of health research was carried out by countries, research centers, and regional programs. The country programs basically focused on analyzing health systems, human resources, and the national research capacity. Argentina stressed operations research on health service expenditures, costs, and productivity. Brazil considered human resources and institutional analysis as well as instituting a research information system. Colombia held a workshop to identify innovative research fields. Mexico placed special attention on developing national capacity to design and carry out health research by analyzing past experience in demonstration; teaching programming and methodology of health service research; and opening new units at the School of Public Health and the Latin American Center for Social Security Studies. Peru highlighted the training program for health research sponsored by the National Council of Science and Technology. Uruguay carried out important work on health problems, demand and utilization of services, as well as an analysis of coverage and financing.

3.6 Regional Centers and the Community Health Training Program for Central America and Panama, **PASCCAP**, play an important role in the generation of knowledge. Their most significant activities in 1983 cover research on maternal and child health, nutrition, disease control, development of human resources, environmental health, and veterinary public health. The Latin American Center for Perinatology and Human Development, **CLAP**, continued the 15 country joint research program on nutrition in maternal and child health covering the following areas: low birthweight and perinatal diagnosis, breastfeeding as a preventive measure in the health of premature births, maternal habits, and the use of drugs during pregnancy. The Institute of Nutrition of Central America and Panama, **INCAP**, took part in studies on breastfeeding, basic foods, sources of nutrients, food technology and nutritional deficiencies. The Caribbean Food and Nutrition Institute, **CFNI**, focused its efforts on the consumption and availability of foods. The Caribbean Epidemiology Center, **CAREC**, carried out disease control research on arboviruses and immunology. **PASCCAP** covered three research areas in the development of human resources: nonconventional modules for multidisciplinary training, work performance, and developing research methodology. The Pan American Center for Sanitary Engineering and Environmental Sciences, **CEPIS**, carried out important studies focused on finding practical, low-cost solutions for prevalent problems in environmental health such as water treatment methods, design of rural systems' recycling control, use of treated water for

agriculture, nonconventional sanitation methods, and waste disposal. The Pan American Center for Human Ecology and Health, **ECO**, collaborated in studies on resettling displaced populations, toxicological effects, and pollution. In veterinary public health, the Pan American Zoonoses Center, **CEPANZO**, focused on pathology (prevalence of tuberculosis, rabies, and brucellosis) and immunology (hydatidosis) research. The Pan American Foot-and-Mouth Disease Center, **PANAFTOSA**, emphasized the foot-and-mouth disease virus, the production and control of an oil-adjuvant vaccine, its serological evaluation, and the risks of introducing foot-and-mouth disease to areas free of the disease.

3.7 A network of 18 WHO Collaborating Centers carries out research on tropical diseases under the PAHO Tropical Disease Program located in Argentina, Brazil, Mexico, United States, and Venezuela which supports country, regional, and worldwide programs. Support for research was provided to institutions in Argentina, Brazil, Peru, and Venezuela. Program evaluation by consultants was also provided to Argentina. PAHO continues its cooperation in promotion, management, consultant service, and evaluation of activities funded by different areas of UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR). Given the importance of this field, emphasis has been placed on strengthening the research and training capacity of nine institutions in eight countries (Argentina, Bolivia, Brazil, Costa Rica, Cuba, Mexico, Peru, and Venezuela) working on Chagas' disease, malaria, leishmaniasis, leprosy, and filariasis. Financing had been provided for 68 research proposals related to Chagas' disease by the end of 1983. Support was also provided for more than 100 projects on various aspects of leishmaniasis, malaria, leprosy, schistosomiasis, and filariasis. Approximately 80 Latin American investigators received short or long-term training.

Development of Technology

3.8 Research and experience play an important role in the process of generating knowledge, by contributing to the development of a new focus, mechanism, procedure, or method. The first regional meeting of the Inter-American Conference on the Evaluation of Health Technology was held in Brasília, Brazil, in November 1983. The meeting focused on identifying technology assessment methods for the rational use of current and new technologies and establishing research guidelines for technology assessment. The meeting recommended that Member Countries take the following actions: develop policies to assess health technologies; promote the selection, diffusion, and use of technologies appropriate for their overall scientific, social, political, and cultural policies for economic development; integrate methods for technology assessment and critical technology appraisal into education programs for professional and para-professional health personnel; develop methods to regulate and control the dissemination and use of new health technologies; and stimulate research projects to assess health technologies at each level of care. A two-week workshop was held in Washington, D.C., to identify areas and methods of health technology assessment for Latin America and the Caribbean and to develop guidelines for incorporating technology assessment into the curriculum of personnel working in health. Technical cooperation was provided to the Bahamas, Colombia, Cuba, and Uruguay. A three-day course took place in March in the Bahamas to develop technology assessment using the Expanded Program on Immunization as a case study. Assistance was provided to Colombia to prepare a research proposal to assess different models of birthing. Cuba and Uruguay received cooperation to develop national health technology programs. Assistance was also provided to Argentina, Brazil, Colombia, Cuba, Honduras, Nicaragua, and Venezuela to assess preventive, therapeutic, and diagnostic health technologies, establish medical equipment guidelines, and develop models to assess present policies for selection, acquisition, and use of health technologies.

3.9 National health technology programs are projected to include research and development, production,

commercialization, control, importation, use, and evaluation functions. The rational use of health technology by governments and health services, according to the disease profile and financial resources of each country, is stressed.

3.10 In order to extend diagnostic radiological services efficiently and with simplified operational methods to rural and marginal urban areas, a basic radiological system (BRS) was developed. The system consists of essential equipment, instructional material on operating the equipment, dark room equipment, and radiographic evaluation by a general practitioner. This system was installed in four health units in the Department of Antioquia, Colombia in cooperation with the Ministry of Health of Colombia, for experimental and evaluation purposes.

3.11 The Regional Centers' contribution to the development of technology for the Americas is summarized below to include the most important activities. **CLAP** developed normative criteria for risk factors and evaluating fetal and neonatal growth. **INCAP** developed simple instruments to measure nutritional status and appropriate methods to increase the efficiency of the production of animal protein. **CFNI** prepared dietary guidelines and a hospital procedures manual. **PASCCAP** prepared human resource modules and manuals for training auxiliary personnel, curriculum guidelines, and medical technology material. The Latin American Center for Educational Technology in Health, **CLATES**, produced 15 self-instruction modules for health personnel. **CEPIS** worked in environmental health making considerable headway in developing effective, low-cost water treatment technology, operating water and sewerage systems, stabilization lagoons, rural water supply systems, and solid waste disposal. **ECO** worked in ecology developing a methodology for rapid evaluation of environmental pollution. Animal health registered improvement through **CEPANZO**'s work on developing standards and procedures to diagnose tuberculosis and hydatidosis. **PANAFTOSA** contributed techniques for the production, quality control, and utilization of oil-adjuvant vaccine against foot-and-mouth disease.

Dissemination of Knowledge

3.12 All the programs within PAHO channel their cooperation in the form of dissemination of knowledge, which involves a selective gathering of information, its critical evaluation, rational dissemination, and, subsequently, cooperation for its appropriate utilization. The activities of two units stand out since they are responsible for providing health science information to professionals in all the health disciplines in Latin America and the Caribbean. These units are the Latin American Center on Health Sciences Information, **BIREME**, in Brazil, and the Information and Documentation unit at PAHO Headquarters. PAHO Regional Centers also contributed to this area.

3.13 The **Latin American Center on Health Sciences Information (BIREME)** is a regional library center for information and documentation in medicine and the health sciences. In information services, it answered 47,411 requests from Latin America for interlibrary loans of scientific articles, 113,310 for periodicals, 14,993 for book loans and consultation; and serviced 61,069 local users. BIREME continued to serve as a subcenter of the MEDLINE system, by means of which 4,807 bibliographic computer searches were carried out in response to requests from the countries of the Region. Brazil established subcenters in Belo Horizonte, Brasília, Rio de Janeiro, and Salvador. A working group on "Scientific Information in Health: BIREME and the MEDLINE System," made up of representatives from BIREME and Ministries of Health and Education of Brazil, evaluated BIREME's MEDLINE system. Recommendations were formulated to adapt the system to current and future demands. The database *Index Medicus* for Latin America (IMLA), that now includes more than 25,000 articles from 200 Latin American journals, was used to answer information requests on specific health problems in Latin America. IMLA has been published quarterly since January 1983, with titles in Spanish, Portuguese, and English. BIREME will also continue to publish "Alerta Bibliográfica, Serie I Salud Pública." In training, BIREME held

refresher courses throughout the year in Barbados for 12 biomedical librarians, 7 from Brazil, and 5 from other Latin American countries.

3.14 BIREME increased its effort to strengthen the Latin American Health Information Network. Leaders from the national information centers of Argentina, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, and Venezuela met in June to analyze the information policies, the possibilities of the centers' access to computers, the current state of telecommunications, and the operative databases in each country. They focused on the possibility of each country participating in a cooperative effort to create a regional database on nonconventional health literature. BIREME coordinated a meeting in Belém, Pará, Brazil in November, attended by subcenter and supplementary library directors, that are part of Brazil's National Network of health sector authorities from the State of Pará and the territories of Roraima and Amapá, as well as the members of the National Advisory Committee. They discussed decentralizing IMLA as a base to propose a rationalization policy for the National Network libraries. Two programs were developed for selective dissemination of information with the Network, the first on cancer (Latin American Cancer Research Information Project, LACRIP), located at PAHO Headquarters, and the second on nutrition (National Institute of Food and Nutrition, INAN), in Brazil.

3.15 **LACRIP** provided specialized information to 2,551 professionals from 22 countries, including Chile, Mexico, Peru, and Venezuela, and sent 18,090 photocopies of articles requested. One of LACRIP's goals is decentralization; therefore with BIREME's help, it contacted authorities in Argentina, Chile, Costa Rica, and Peru to consider establishing subcenters in these countries. Chile and Peru opened their subcenters in 1983.

3.16 **The Information and Documentation in Health unit**, located at PAHO Headquarters, and the Regional Library (BIREME), provide reproductions of scientific articles from specialized publications to the countries. They added updated bibliographical medical information from computerized data banks such as MEDLINE, CANCERLINE, TOXLINE, POPLINE, and serviced other WHO Regions with their computer terminals. The technical units of the Organization participated in formulating, reviewing, and disseminating selected bibliographies of interest to Latin America and the Caribbean, such as updated information on disasters, nutrition, mortality, maternal and child health, and emergency services. The unit currently records all the information and documentation that PAHO produces, puts it on microfiche, and distributes it to the Member Governments.

3.17 **Network of Information Centers.** The PAHO Regional Centers cooperated with the ministries of health of Latin America and the Caribbean, as well as with PAHO Country Offices, in organizing documentation centers and selecting appropriate equipment for their operation. These Centers gather and organize national information necessary for studying the country's health problems and for strengthening active cooperation among the countries of the Region in the exchange of information.

3.18 **Contributions of several PAHO Regional Centers.** One of the most outstanding contributions was made by the Pan American Center for Sanitary Engineering and Environmental Sciences (**CEPIS**) through the Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (**REPIDISCA**). The incorporation of new members in 1983 brought the Network to more than 50 national centers in nine countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru, and Venezuela). CEPIS supported the development and strengthening of infrastructure and local capacity to exchange information among institutions and countries. It also provided bibliographical services on water supply, sanitation, and environmental protection, especially on appropriate technology. The Pan American Zoonoses Center (**CEPANZO**) took concrete steps in cooperation with Brazil, Uruguay,

and Venezuela to strengthen developing the zoonoses information system. CEPANZO increased its technical and special publications in response to an increase in the demand from countries. The Pan American Foot-and-Mouth Disease Center (**PANAFTOSA**) collaborated in strengthening national systems in Brazil, Chile, Mexico, and Paraguay to improve the efficiency of the system of information and epidemiological surveillance. The Pan American Center for Human Ecology and Health (**ECO**) focused its efforts on producing and distributing techniques and procedures for the appropriate use of pesticides, control of toxic effects, workers' health, and basic industrial sanitation. The Caribbean Epidemiology Center (**CAREC**) focused its activities on producing and distributing manuals on epidemiological surveillance and the development of laboratories.

Mobilization of Institutional Capacity

3.19 PAHO operated 10 Regional and Subregional Centers in 1983 that participated in programs for: maternal and child health, disease control, human resource development, environmental health, and veterinary public health. The Centers are a valuable instrument in the process of generating and disseminating knowledge and experience, and especially for developing national capacity by strengthening institutions in each country.

Networks of National Centers

3.20 One of the basic goals of PAHO's new management strategy is the self-sufficiency of national institutions that maintain continuous communication with each other for research, technological development, dissemination of information, and training. Considerable progress was made in 1983, especially by the Latin American Network of Health Information, which now has incorporated information centers in 12 countries. One specific **CLATES** achievement was making the Nucleus of Educational Technology in Health (NUTES) in Brazil self-sufficient. CLATES promotes and supports the operation of 23 national educational technology centers in Latin America. **PASCCAP** is promoting the development of institutes in Central America and Panama to form an intercountry network for training health personnel at all levels. **CLAP** made progress on the feasibility studies and definition of criteria to establish the Regional Network of Perinatology Centers. The Pan American Network for Information in Sanitary Engineering, coordinated by **CEPIS**, consists of national centers that maintain an information exchange on water, sanitation, and environmental health. Steps were taken to promote interinstitutional networks in close coordination with TDR, linking centers supported by this WHO special program, in order to pool efforts and develop research in a cooperative manner.

Outstanding Activities of PAHO Regional and Subregional Centers

Health Services

Latin American Center for Perinatology and Human Development (CLAP)

3.21 CLAP is responsible for developing research and technology on the perinatal stage, disseminating information, providing technical cooperation to the countries for the organization of perinatal health services, and training personnel within PAHO's overall Maternal and Child Health Program.

3.22 **Research.** Joint research with 15 countries continued in the following areas: low weight at birth, diagnosis, simplified perinatal clinical history, classification of perinatal risks, maternal habits, and the use of drugs during pregnancy. Studies were also carried out on breastfeeding as a preventive measure in the health of premature births.

3.23 **Technology development.** Standardized criteria were developed for perinatal care according to the degree of risk. Progress was made in the studies on appropriate technologies for evaluating fetal and neonatal growth and development.

Simplified methods were designed for studies on fetal lung maturity and appropriate technology for delivery.

3.24 **Training.** The Center organized nine courses on perinatal health, perinatology, and research methodology. They were attended by 228 physicians, nurses, and midwives from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Mexico, Paraguay, Peru, and Venezuela. CLAP collaborated in presenting courses and workshops on maternal and child health in Argentina, Bolivia, Brazil, Chile, Colombia, Guatemala, Nicaragua, Paraguay, and Uruguay.

3.25 **Information.** Thirty scientific articles were published and distributed. Specialized bibliographical material and 18 technical reports on meetings were disseminated. The Center's biannual *Bulletin* increased its circulation to 3,000 copies.

3.26 **Network of perinatology centers.** Work continued on feasibility studies, defining criteria, and preliminary consultations to set up the regional network of perinatology centers.

Institute of Nutrition of Central America and Panama (INCAP)

3.27 INCAP is responsible for developing research, technology, training, and technical assistance in food and nutrition within the PAHO Nutrition Program.

3.28 **Research.** Assistance was given to six countries for studies on breastfeeding that subsequently were analyzed at a subregional seminar in April. INCAP collaborated with the study on endemic goiter in 15 countries. Research continued in the following areas: (a) basic foods, the biological utilization and availability of cereals and legumes, food preparation methods, and causes of low protein digestibility; (b) sources of nutrients, chemical composition and nutritive value of the wild amaranth seed and lupaco oil protein; (c) food technology, the effect of processing on the nutritive value and stability of non-nutritional substances in cereals and legumes; the effect of storage on the physical, chemical, and organoleptic qualities of cereals and legumes; developing appropriate technologies for preserving the acceptability qualities of cereals and legumes; and technical and economic feasibility studies for rural agroindustries; (d) the biomedical area continued research on defense mechanisms and malnutrition, nutritional status and physical capacity, the immunological characteristics of maternal milk; the effect of vitamin A deficiency on the utilization and metabolism of iron; child nutrition in the first year of life supplementing breastfeeding with adult food paps; evaluating the use of cow's milk for treating severe protein-energy malnutrition; developing and evaluating a model for the early detection and prevention of malnutrition in marginal urban populations; and (e) nutrition and socioeconomic development, the study of the determinants, consequences, and differences in mortality changes in Guatemalan communities; the increase in the minimum wage law change and its impact on the economy; and nutritional status of families living on coffee plantations in Guatemala.

3.29 **Technology development.** The indicators of nutritional status were evaluated and simple instruments were designed to measure the nutritional status of preschool and school-aged children as indicators of the general population's nutritional status. INCAP continued its collaboration with the Institute of Science and Agricultural Technology (ICTA) of Guatemala in food technology, making "NUTRICTA" seed (a high nutritional corn strain) available to farmers. This strain was developed by INCAP, ICTA, and the International Center for the Improvement of Corn and Wheat (CIMMYT). The project to improve the locally available wild pig in El Salvador, as an important source of high-quality food continued. Food-producing agroindustrial technology was transferred to cooperatives in Guatemala and Honduras.

3.30 **Training.** The Institute continued the training program for nutritionists at the bachelor's degree level, as well as providing graduate master's degree courses on nutrition in public health, and food science and technology. Students participated in these programs from countries in Central America and Panama and from other Latin American countries. INCAP continued its advanced tutorial training program supported by the United Nations University,

with students from all over the world participating. The Institute continued to accept technical and professional level students from the countries of the Region for tutorial training in specific techniques. In view of the priority placed on training human resources at national and local levels, in 1983 the Institute participated with countries in the area, by providing food and nutrition training for in-service personnel in the ministries of health. The total number of country-level participants in regular and tutorial programs at the Institute was 1,730. The distribution by country and Region of origin, and training program is shown in Table 15.

3.31 A regional seminar on breastfeeding was held in Panama, attended by 72 people from the subregion. Most of the personnel who participated in the Institute's programs are working in food and nutrition in their countries of origin.

3.32 **Technical cooperation.** A food and nutrition survey in El Salvador, undertaken jointly with the Secretariat of the National Commission on Food and Nutrition of the Ministry of Planning, was completed; INCAP also participated in evaluating supplementary food programs. The Department of Nutrition of the Higher Council on Economic Planning of Honduras was supported to develop and publish a study on food consumption. UNICEF, INCAP, and the Ministries of Health, Agriculture and Livestock Development and Agrarian Reform, Planning, and Education of Nicaragua participated in formulating a Five-Year Nutrition Plan. Collaboration also took place with the Ministries of Health and of Education on developing food systems and nutritional surveillance in these sectors. A food intake and nutrition diagnosis with a practical approach as a basis for a National Food and Nutrition Plan in Panama was

Table 15. **Participants in INCAP teaching programs, by country and Region of origin and by type of training, 1983**

Country and Region of origin	School of Nutrition	Graduate courses	Advanced residency	Tutorial training	Training in national courses	Total
INCAP member countries:						
Costa Rica	3	1	—	—	—	4
El Salvador	—	4	—	3	233	240
Guatemala	17	19	—	36	1,253	1,325
Honduras	9	1	—	—	—	10
Nicaragua	3	—	—	1	45	49
Panama	2	2	—	1	80	85
Total	**34**	**27**	**—**	**41**	**1,611**	**1,713**
Other countries of the Americas:						
Bolivia	—	3	—	—	—	3
Brazil	—	—	—	2	—	2
Chile	—	—	1	—	—	1
Colombia	—	1	—	—	—	1
Ecuador	—	3	—	—	—	3
Mexico	—	1	—	—	—	1
Peru	—	1	1	—	—	2
United States of America	—	—	—	2	—	2
Total	**—**	**9**	**2**	**4**	**—**	**15**
Other Regions:						
Bangladesh	—	—	1	—	—	1
Philippines	—	—	1	—	—	1
Total	**—**	**—**	**2**	**—**	**—**	**2**
Grand total	**34**	**36**	**4**	**45**	**1,611**	**1,730**

— None.

carried out with the Ministry of Health.

3.33 Collaboration continued on salt iodization programs, which were studied in order to make appropriate recommendations. Continued support was provided for the vitamin A deficiency control programs in Guatemala and Honduras. Studies were initiated in Nicaragua and other countries on the feasability of implementing a salt fluoridation program to control tooth decay.

3.34 The Institute collaborated with the PAHO Food and Nutrition Program in carrying out a regional study on endemic goiter control in 15 countries. Advisory services were provided to Bolivia for implementing a salt iodization system.

Caribbean Food and Nutrition Institute (CFNI)

3.35 CFNI is responsible for technical cooperation in the Caribbean countries in nutrition, including the analysis of problems, development of policy and programs, and training within the PAHO Nutrition Program.

3.36 **Research.** Basic data on food consumption were analyzed to identify key foods to be studied in the food market project that CFNI is implementing with financial support from the International Development Research Center (IDRC) of Canada in Antigua and St. Vincent and the Grenadines.

3.37 **Technology development.** A committee of dieticians from the Bahamas, Barbados, Jamaica, and Trinidad and Tobago, with CFNI drafted a diet guideline for chronic renal failure and distributed it to member countries. A project to develop a general hospital policy and procedural manuals was initiated in Grenada. The *Nutrition Handbook for Community Workers* developed with the Ministry of Health in Jamaica was distributed for pre-testing to member countries. The final draft of the publication *Nutrition Education in Primary Schools, a Handbook for Caribbean Teachers* was reviewed at a teachers' workshop in Montserrat. Job descriptions for community nutrition officers were prepared to supplement the CFNI publication *Job Descriptions for Nutrition and Dietetic Personnel.*

3.38 **Technical information.** The document *Strategy for the Control of Anaemia in the English-speaking Caribbean* was distributed to all member countries. A review of the literature on food price and subsidy policies and their nutritional impact was undertaken. Fourteen issues of *NYAM News* features were published; twelve of these were published in a book entitled *Food Budgeting for Caribbean Families. CAJANUS*, the Institute's quarterly publication, now in its 16th year, was widely distributed to member countries, readers, and institutions. Cooperation between CFNI and the CARICOM Secretariat regarding regional food and nutrition strategy entered a new phase with the publication of the strategy documents and discussions on developing a plan of operation for implementing programs and projects.

3.39 **Training.** Nutrition education activities involved reviewing curricula in Antigua, Montserrat, Suriname, and Trinidad and Tobago with the University of the West Indies School of Education. Sessions on "Food Availability and Nutrition" were conducted at the UWI In-Service Agricultural Extension Training Course, held in Antigua and Grenada. An evaluation was made of the *Dietetic Practicum* for the dietetic technology program at the Barbados Community College. The two-year course on dietetic technology in Trinidad and Tobago was revised and assistance was given for planning and in-service training programs for food demonstrators. A training program for 90 food service workers was conducted in Dominica with the collaboration of the Caribbean Epidemiology Center (CAREC). CFNI was involved in the United Nations University/University of the West Indies (UNU/UWI) postgraduate training Master of Science degree program in nutrition, agricultural economics, crop science and food science, as well as the UWI undergraduate program in agricultural economics, nursing, and midwifery. The proposal was prepared for a dietetics internship program in Trinidad and Tobago, and a new curriculum was developed for the seven-month course in community nutrition to ensure adequate emphasis on the primary health care approach in food and nutrition. Specific collaboration was provided to the 10-month nutrition practitioners' course held

in St. Vincent and the Grenadines, to the health science tutors' course (PAHO Allied Health Project), the health and family life education project, the diarrheal disease control educational program, and the strategy to promote breastfeeding in the Caribbean. In dietary management of diabetes, obesity, and hypertension, CFNI collaborated in organizing workshops in Saint Lucia and Montserrat, and provided technical material as well.

3.40 **Technical cooperation.** CFNI participated with governments and relevant institutions in member countries in developing national and regional policies, strategies, and action plans on food and nutrition. CFNI assisted Dominica and St. Vincent and the Grenadines in successfully preparing proposals to obtain funding for projects which will start early in 1984 from the Joint WHO/UNICEF Nutrition Support Program (JNSP). Nutritional surveillance collaboration was also given to Guyana and Suriname. Basic data on the food situation in St. Vincent and the Grenadines were analyzed, including nutrition education activities within the school system. A thorough review of strategies to develop a food and nutrition policy was made in collaboration with the Food and Nutrition Council of Barbados. Similar assistance was provided to Antigua, Grenada, and St. Vincent and the Grenadines. CFNI collaborated in assessing several national infant and young children feeding programs; assisted in gathering data on breastfeeding practices; participated in several workshops and developed breastfeeding educational materials, including the strategies to promote breastfeeding in St. Kitts-Nevis and Dominica.

3.41 The Institute's two advisory units, the Scientific Advisory Committee (SAC) and the Policy Advisory Committee (PAC) met at the end of the year in Kingston, Jamaica, to review the Institute's objectives and functions and to make recommendations on the scientific and technical content of its work program and policy for operating the Institute so as to provide technical cooperation for its member governments.

Caribbean Epidemiology Center (CAREC)

3.42 CAREC is reponsible for developing national capacity to survey and control disease in the 19 Caribbean countries served by the Center within the PAHO Epidemiology Program.

3.43 **Research.** The Trinidad and Tobago Government provided funding for arbovirological studies, which made it possible to demonstrate the transovarial transmission of dengue 4 virus, and to undertake a study of viral antibodies in schoolchildren in order to monitor exposure to arboviruses. The prospective ischemic heart disease study of 2,560 persons between the ages of 35 and 69 years living in St. James, a suburb of Port-of-Spain, Trinidad and Tobago, continued throughout the year with government financial support. Immunological studies continued in Trinidad to determine: (a) whether patients with acute glomerulonephritis (AGN) have an antibody to the "nephritogenic" protein and whether the antibody is protective in the population; and (b) whether the suppressed response to streptococcal antigens in patients with AGN might be a factor leading to chronic renal disease. These studies continue to monitor the control of streptococcal diseases.

3.44 **Technical information.** The monthly CAREC *Surveillance Report* was distributed to 2,700 readers and the Caribbean *Zoonoses Newsletter* was published quarterly and sent to 700 readers. Both publications provide a unique opportunity to publish and disseminate Caribbean reports and articles quickly to readers who often do not have access to journals. Production and distribution of materials for manpower development, laboratories, and surveillance programs have been increased. The audiovisual and printing units have attained new levels of productive capacity that are reflected in the quality and quantity of materials being produced. A catalog of audiovisual materials was produced, and all participants in the training for trainers course received sets of overhead slides to be used in nursing and public health schools. The great demand for CAREC's *Manual of Epidemiology for the Caribbean* required printing an additional 1,000 copies. Deputy

epidemiologists received reference materials and guidelines as part of their continuing education program.

3.45 **Training.** Five deputy epidemiologists attended a five-day training course in management and investigation of food-borne illness, typhoid, poliomyelitis, dengue, and malaria. CAREC developed field guides as part of its continuing education program. Within the program to develop a zoonoses surveillance system, 10 animal health assistants participated in a five-day training course on surveillance techniques. Two senior medical officers and two medical students were given scholarships to pursue studies in epidemiology. A new five-day program for teaching trainers at nursing and public health schools was undertaken, and 28 tutors will be able to undertake basic epidemiology teaching at their respective institutions in the future. CAREC developed visual aids packages for each participant. Sixteen medical students at the University of the West Indies (UWI) attended a 10-day training course in microbiology and epidemiology, and epidemiology was also taught to public health and community health students at UWI, Jamaica. Five-day workshops were held for 17 national epidemiologists, 19 laboratory directors, 16 surveillance statistical officers, and 12 veterinary medical officers. There were opportunities at each workshop for updates on key subjects as well as invaluable exchange of field experiences. The utilization of epidemiological techniques for improving the management of primary health care services was the subject of an innovative four-day workshop held in St. Vincent and the Grenadines. Similar workshops will be conducted for other countries in 1984 and 1985 based on this experience. Hands-on port health inspection techniques were demonstrated in three countries and reports on the ports submitted to the respective governments. Laboratory staff were provided with on-the-bench training reinforced by slide-tape audiovisual self-teaching materials. Specific programs were provided in the British Virgin Islands for technicians in malaria diagnosis and protozoology as well as laboratory facilities guidance. Physicians and nurses in the Cayman, Turks and Caicos Islands were provided with training in diagnosis and treatment of sexually transmitted diseases. A workshop for 12 senior veterinary medical officers on zoonoses surveillance held in July has already resulted in government decisions to participate in a Caribbean zoonoses reporting system on a regular basis.

3.46 **Technical cooperation.** Epidemiological surveillance studies were undertaken in Grenada on typhoid, and on influenza in Jamaica, where fatalities occurred. National surveillance systems were reviewed in all 19 countries through a combination of field visits and consultations with national epidemiologists, deputy epidemiologists, laboratory directors, and surveillance statistical officers. The Center provided consultations on a wide range of problems including both communicable and noncommunicable diseases, food safety, airline catering, port health, and pesticides. CAREC continued to provide laboratory referral services in virology, bacteriology, parasitology, and entomology, with additional support for parasite and viral antibody serosurveys (rubella, arboviruses). Entomological support included ongoing monitoring of the Trinidad and Tobago airports, studies of transovarial transmission of dengue in Trinidad, and advisory services in the British Virgin Islands and Grenada. The Expanded Program on Immunization (EPI) continued as planned, and emphasis was placed on improving the surveillance of the six diseases (diphtheria, tetanus, whooping cough, poliomyelitis, measles, and tuberculosis) and rubella and on the continued monitoring of coverage including cold chain maintenance. Cold chain equipment has been provided to eight countries. CAREC was the venue for a five-day EPI managers' workshop. Leprosy control programs were further strengthened in the lesser developed countries and in Barbados through standardization of treatment including follow-up and record-keeping. In-service training was provided for these programs as well as consulting services for clinical assessment.

3.47 **CAREC general management.** The CAREC Scientific Advisory Committee and Council, at their respective March meetings,

reviewed the report on the future of CAREC. The proposed charter for the "Future CAREC" was subsequently reviewed by CARICOM and PAHO legal experts before being submitted to the member governments. The Council recommended that PAHO manage the Center until 1987.

Human Resources

Latin American Center for Educational Technology in Health (CLATES)[1]

3.48 CLATES was responsible for developing, teaching, and learning technology within the PAHO Human Resources Program.

3.49 **Technology development.** Fifteen self-instruction course modules were formulated for English and French-speaking countries. These modules were then used in the course on educational technology given in Haiti. The Spanish version of the modules is undergoing field tests in Cuba and in Central America.

3.50 **Training.** Seven courses were presented on educational methodology in Argentina, Chile, Cuba, Ecuador, Mexico, Nicaragua, and Peru.

3.51 **Network of centers.** Among the most substantial advances is the self-sufficiency attained by the Nucleus of Educational Technology in Health in Brazil (NUTES) and the working network of 23 national centers in Latin American countries promoted and supported by CLATES. Special grants strengthened the centers for middle-level technicians during the year in Cuba, Ecuador, Honduras, Panama, and Peru. NUTES received special attention and will now support other centers at the national level as well as those from other countries. It provided funds to reproduce visual and audio tapes, slides, and instruction modules to make them available to Latin American centers.

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

3.52 PASCCAP is responsible for cooperation in developing human resources in Central America and Panama within the PAHO Human Resources Program.

3.53 **Research.** Studies continued to identify nonconventional models for training of multidisciplinary teams in priority areas in three countries, and the results are beginning to be applied. Other studies were made of the performance of health workers in El Salvador, Guatemala, Honduras, and Panama. These projects have been submitted to external financing agencies. A manual on research methodology for ministries of health and universities was prepared so as to create groups responsible for the study of planning and manpower training problems and propose alternatives. Courses were held on research methodology to incorporate research into the process of health manpower development in El Salvador, Honduras, Nicaragua, and Panama.

3.54 **Technology development.** Training modules and manuals were developed for auxiliary personnel with the active participation of national staff. A teachers' guide on health for all was formulated and distributed to train personnel in primary care strategy. The National University of Costa Rica collaborated in producing manuals, texts, and pamphlets on medical technology. The National Autonomous University of Honduras worked on designing an educational material production unit. Quarterly publication of educational material continued for mid-level technical and auxiliary personnel as well as for volunteers in community health.

3.55 **Training.** Three training courses were held on manpower planning for multidisciplinary groups from three of the countries. Permanent training modules were formulated in two countries using the integration of study and work as a teaching strategy. Personnel training continued in five countries in national priority areas. The bases were established for a subregional

[1]Considering the objectives of CLATES fulfilled, PAHO's Directing Council resolved, at its XXIX Meeting, to terminate the Center's program in December 1983, and to continue PAHO support for the Nucleus of Educational Technology in Health (NUTES).

program to train health administration personnel at different levels. The School of Nursing of Costa Rica cooperated in adapting programs and teaching methods to health plans and policy requirements. The nursing component in the curriculum of the School of Medicine in El Salvador was reviewed.

3.56 **Network of national centers.** A study was initiated on developing a subregional program in health education, which would integrate country resources and be suitable for a multinational training plan that aims at reducing costs and rationalizing investments and benefits. Assistance was provided to develop institutions that can form an intercountry network to train professional and other personnel. Initial studies were carried out on creating a public health training center in Honduras; the Institute for Health Manpower Development in Guatemala has been strengthened; and there are plans to organize a public health training center in Panama.

3.57 **Technical advisory services.** There was support for creating national working groups to determine the need for human resources for national and regional health strategies and to formulate policy and planning proposals. National groups formulated guidelines for a national human resource policy to be approved by the health authorities in Guatemala, Honduras, and Panama. As a result, the governments of two of those countries established a national commission with representatives from all state institutions, who both train and use personnel, as well as from schools and professional associations to implement the adopted policies.

3.58 The governments of the isthmus evaluated PASCCAP to reorient actions according to their national health plan needs. The evaluation showed the need to strengthen the Program's structure with resources of all types and to ensure its continuity. It also showed the desirability of reformulating objectives, lines of work, and operations so that supporting the training and development of health manpower will be its main activity.

Environmental Health

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

3.59 CEPIS is responsible for developing research and technology, training personnel, cooperating with the governments in sanitary engineering and environmental sciences, and disseminating technical information within the PAHO Environmental Health Program.

3.60 **Research.** Research focused mainly on finding practical, low-cost solutions to prevalent problems in water and sanitation. These efforts included: research on water conditioning for sedimentation in rural environments using stone flocculators under laminar flow; development and evaluation of a modular filter for rural water supply systems; and field-testing of equipment for analyzing water quality. Importance was also placed on: developing gravel prefilters in slow filtration plants for rural supplies; assisting the program in Brazil on laminar-flow rapid filtration plants with a holding period of less than 15 minutes (a figure indicating the technical and economic importance of this project for the Region); and evaluating the performance of variable-rate filters in a treatment plant in Minas Gerais, Brazil. CEPIS cooperated with Brazil's Special Services in Public Health Foundation (SESP) on evaluating the research program of systems of water supply for smaller communities, as well as on planning of a new research center in the Foundation. CEPIS participated in the II National Seminar on Research and Development in Basic Sanitation held in Brasília, Brazil. A study was initiated in Peru on controlling mine tailings in the Peruvian concentrators, and an advisory group was supported to develop a research protocol evaluating the socioeconomic and epidemiological impact of recycling treated water for agriculture. CEPIS collaborated with the National Institute of Research and Standardization of Housing.(ININVI) in Peru on formulating two research proposals on nonconventional sanitation for low-income urban communities. The one on evaluating nonconventional methods of

domestic sewage disposal was submitted to the Technical Cooperation Agency of West Germany (GTZ) and the other on low-cost methods of sanitation with community participation to the United Nations Commission on Human Settlements (HABITAT). CEPIS collaborated with the University of San Marcos (Lima, Peru) in preparing a research proposal on the collection of solid waste in marginal urban areas with community participation. A meeting of investigators working on a nonconventional garbage collection system in the new settlements of Lima, Peru, was organized at CEPIS. CEPIS also collaborated with ININVI (Peru) in preparing a research proposal on the above topic for presentation to the HABITAT. There was follow-up on the status of a research proposal from the Metropolitan Council of the Central District of Honduras to the International Development Research Center (IDRC, Canada) on garbage collection in marginal areas.

3.61 **Technology development.** A manual on basic information for drinking water and sewerage systems supervisors and another on managing drinking water and sanitation institutions' training activities were prepared and distributed as part of the program for technical and institutional development of water and rural sanitation agencies. A "Manual of Guidelines for the Design of Water Treatment Plants for Rural Environments" was also completed. Manuals and technical documents were drawn up for teaching and learning as part of the low-cost technology program for the collecting and disposing of wastewater in urban, marginal, and rural areas. CEPIS cooperated with the National Institute of Water and Sewerage (INAA) of Nicaragua in developing a course on the design of simplified systems for wastewater treatment. Within this same area, CEPIS prepared and distributed the following technical documents to Governments: "Manual on Experimental Methods in the Evaluation of Stabilization Lagoons"; "Simplified Procedures for Chemical Analysis of Wastewater"; "Simplified Procedures for Microbiological Analysis of Wastewater"; "Operational Guidelines for the Global Environmental Monitoring System (GEMS)/Water Project"; "Developing Alternative Approaches to Urban Wastewater Disposal in Latin America and the Caribbean"; and "Criteria for the Selection of Appropriate Technology." A report was reviewed and distributed of the Seminar on Nonconventional Technology for Water Pumps in Rural Systems. In formulating guidelines and criteria for solid wastes, efforts included a preliminary version of the "Selection, Operation, and Maintenance of Equipment Used in Sanitary Landfills"; an "Administrative Manual on Management and Maintenance of Equipment"; the translation of texts by the American Public Works Association (APWA) into Spanish; and the preparation of a publication on contracting of sanitary services. A project was prepared on developing teaching aids (videotapes) on garbage collection in marginal areas.

3.62 In water pollution, the manual on the design of ocean outfalls was updated, and a survey was conducted on the possible application of technologies commonly used for ocean outfalls. A review was made of the methods and procedures followed by the interlaboratory program for analytical water quality control. A subsequent evaluation of each country participating in the Regional Program for the Global Environmental Monitoring System (GEMS) followed. CEPIS also collaborated with Argentina in three projects for developing technology: a mathematical model of dissolved oxygen in the Chubut River, a similar project for the Reservoir of Salto Grande, and a study of discharge of sewage effluents into the sea from the city of Mar del Plata. Technical reports and mathematical models were formulated for controlling water pollution and for the technical evaluation of the Mar del Plata project. Cooperation was offered to Colombia in the technology transfer of the conceptual design for ocean outfalls. A translation of a document from England's National Water Council and the Center for Water Research on "Leakage Control Policy and Practices" was reviewed. A report on leakage control was written for the Bureau of Sanitary Works of Argentina.

3.63 **Training** is one of the Center's more productive areas in technology transfer. Five courses on improvement of drinking water quality were organized in Colombia, Costa Rica, the Dominican Republic, and Mexico. These dealt specifically with the design of water treatment plants for rural environments; 105 staff members from eight countries attended. A seminar was held at CEPIS in July on the disinfection of water supplies in rural areas with 25 participants from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Guatemala, Mexico, Peru, Uruguay, the Netherlands International Reference Center (CIR), and PAHO. In the program to extend coverage by reducing unmetered water, 12 courses and their respective modules were prepared in the area of water distribution systems. They covered aspects of leakage control, projects and construction of systems, macro and micromeasurement, household connections, census of networks, pitometry, and others. The Manual on Pitometric Techniques and the Manual on Pitometric Districts were completed. CEPIS collaborated in the National Course on Pitometry as part of Colombia's National Program for Leakage Control. CEPIS also collaborated with the State Company of Basic Sanitation Technology (CETESB) in Brazil in organizing a regional course on Analytical Quality Control, part of the Global Environmental Monitoring System (GEMS)/ Water Project, held in May in São Paulo, Brazil. Cooperation was given to the Water and Sewerage Company of Brasília (CAESB), Brazil to organize and prepare materials and technical exhibits for the Second Regional Meeting on Eutrophication in Warm Tropical Lakes held there in May and attended by 65 national participants, 14 participants from six countries, and representatives from the Canadian Center for Inland Waters (CCIW), the Government of Spain, and UNESCO.

3.64 A technical seminar with Peruvian authorities was held in August on environmental quality, with special reference to solid wastes. There was a meeting of an Expert Working Group on Solid Wastes, in Lima, Peru in September, with 11 professionals from Argentina, Brazil, Chile, Mexico, Uruguay, and PAHO attending. PAHO collaborated with the VIII Latin American Course on Public Sanitation, held at the University of Buenos Aires, Argentina, with 20 professionals attending. CEPIS and PAHO Headquarters collaborated in organizing and providing speakers and teaching materials for 10 training courses on solid waste given in Argentina, Brazil, Colombia, Ecuador, El Salvador, Honduras, Mexico, and Peru, with a total of 142 professionals from 19 countries attending.

3.65 **Technical cooperation.** Technical cooperation was provided to the countries at both national and regional levels. Assistance this year was given to: the National Institute of Drinking Water and Sewerage (INAPA) of the Dominican Republic on a program for improving water quality; the National Institute of Municipal Development (INSFOPAL) of Colombia for a survey on water purification plants; the Costa Rican Institute of Water Supply and Sewerage Systems (AyA) of Costa Rica for a project to expand the plant at Tres Ríos; the National Drinking Water and Sewerage Service (SENAPA) in Peru for expansion studies and/or projects for water treatment plants; and the Environmental Health Administration of the Ministry of Health (DIGEMA) of Peru for the evaluation of its three environmental laboratories, and of the portable equipment donated by USAID for the bacteriological analysis of water. A sampling plan was prepared and training organized for the personnel who manage filters. SENAPA (Peru) worked on identifying possible measures to control larvae observed in water collected for human consumption. There was also cooperation in the field of reducing unaccounted-for water, with SENAPA in developing a seminar for managers of that agency on leakage control, and with the Drinking Water and Sewerage Service (SEDAPAL) of Lima, Peru, in a similar workshop held in July. The Ministry of Health of Colombia and CEPIS collaborated on evaluating the operating conditions of water distribution systems and in executing seminars on this topic. Cooperation was provided for water companies in Cali, Colombia to formulate

their program for reducing unmetered water, as well as for a managerial level conference. A similar conference was held in Fortaleza, Ceará, Brazil, on orienting managers and technicians to formulate state programs for controlling household leakage. Cooperation on wastewater collection and disposal focused on proposals: for a comparative evaluation of the sanitary condition of vegetables grown with treated wastewater versus raw domestic water in Peru; for environmental surveillance to prevent diarrheal diseases in Peru; and for analyzing alternatives for final disposal of sewage in the Bay of Castries, in Saint Lucia.

3.66 **Information network.** The Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA) is a basic component of the regional Environmental Health Program. Its purpose is to develop and strengthen capacity and infrastructure for the exchange and utilization of information by national institutions, while at the same time providing bibliographical and documentation services on water, sanitation, and environmental health. CEPIS serves as the regional coordinating unit of the Network, which is supported by the International Development Research Center (IDRC) of Canada. In 1983, 23 national centers in nine countries were added; they are in Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru, and Venezuela. Within the broad range of activities in disseminating information, one of the important efforts is the quarterly publication of a computerized index, REPINDEX, with a circulation of 750 copies. Under UNESCO auspices, a collective catalogue of existing periodical publications in the REPIDISCA collaborating centers was published, which included information on 310 titles in their collections. The Network expanded the dissemination of technical information with a specialized information service for different individual and institutional user groups. The project for providing CEPIS/UNESCO documents was active in channeling materials produced by other international agencies to collaborating centers. Thousands of photocopies were supplied in answer to requests from REPINDEX users. Steps were taken to print the CEPIS Library Catalogue, which includes about 5,000 references. In the area of developing human resources for implementing and consolidating the Network, CEPIS offered in-service training to staff from Brazil, Colombia, Costa Rica, Dominican Republic, Guatemala, Mexico, Nicaragua, Peru, and Venezuela.

3.67 The following Center publications deserve special mention: the Manual on Experimental Methods for Evaluating Stabilization Lagoons, National and Global Monitoring of Water Supply and Sanitation, GEMS/Water Operational Guideline in the Technical Series; and Air Quality Monitoring, Chemical Analysis of Wastewater, Simple Sanitary Measures for Controlling Enteric Diseases, Basic Knowledge for the Supervision of Water and Sewerage Systems, the Manual on Applied Hydraulics in Sanitary Engineering in the Technical Documents Series. Reports of courses and seminars have also been published and distributed, as have proceedings and papers from environmental health meetings.

Pan American Center for Human Ecology and Health (ECO)

3.68 ECO is responsible for studying the interaction between man and his physical, biological, and sociocultural environment; for developing technology, disseminating knowledge, and cooperating with the Member Governments within PAHO's Environmental Health Program.

3.69 **Research.** Technical studies were carried out on relocating displaced populations including health and environmental problems at the hydroelectric plant at El Cajón, Honduras. An evaluation was made of the problems related to the populations' health and resettlement stemming from the construction of the El Madrigal dam in the Dominican Republic. A study on the toxicological and epidemiological effects of recycling water from mine tailings was conducted in Bolivia. Arsenic contamination in Río Paz and its repercussions on the health of the community was investigated in Guatemala. An analysis of the health problems associated with the

Tempesque River irrigation project was made in Costa Rica.

3.70 **Technology development.** A proposal for an analytical methodology for evaluating environmental pollution sources rapidly prepared by WHO was examined in a workshop held in Mexico. It is considered a practical and appropriate instrument for Latin American and Caribbean realities.

3.71 **Dissemination of information.** The Manual on the Appropriate Use of Pesticides was distributed with great success. During the year, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Guatemala, Honduras, Mexico, and Paraguay began organizing several workshops and other activities aimed at formulating criteria to reduce health risks created by the improper use of pesticides. A training module on health risks associated with the use of asbestos was published and distribution initiated in all the countries of the Region. This publication is part of the educational material prepared with the technical support of the Mexican Social Security Institute (IMSS). Special attention was also placed on preparing and distributing a series of documents related to the Workers' Health Program during 1983. Some of these include the first draft of a catalogue of teaching centers in occupational health; identification of educational materials on occupational health for workers; the final version of the Guidelines on Basic Industrial Sanitation; and the forthcoming publication of a Spanish translation of *Guidelines for the Identification of Occupational Diseases*, written by the U.S. National Institute of Occupational Safety and Health (NIOSH). The distribution of specialized information made it necessary for this Center's professional personnel to conduct 147 searches requested by practically all of the Member Countries of the Region. The translation into Spanish of a text on the use of agents for *Biological Control of Pests of Agricultural and Sanitary Interest* was completed, as was the preliminary document of selected important topics on pesticide poisoning prevention undertaken with several authors from Member Countries of the Region.

3.72 During 1983 four issues of the Center's Newsletter, *Human Ecology and Health* were distributed in Spanish and English to approximately 2,500 government and academic institutions in the Region.

3.73 **Training.** Important activities include the following areas: a review of the content and sequence of the Workshop on Epidemiological Evaluation of Environmental Risks conducted by specialists from the Biomedical Research Institute, the School of Medicine of the National Autonomous University of Mexico (UNAM), and the University of Campinas, São Paulo, Brazil. The Nucleus of Human Ecology and Health of this Brazilian university received support for international seminars on food toxicology and preventing pesticide risks. A meeting at ECO for a group of toxicologists from several countries in the Region took place in July, during which recommendations were made to ECO on the subject content and production strategy of training materials needed in the area of basic toxicology.

3.74 **Technical cooperation.** ECO collaborated with the Government of Mexico by supporting a number of projects in different areas. Among these are: the Bureau of Research on Environmental Effects on Health, the Environmental Health Bureau of the Ministry of Health and Welfare, the program to create a National Reference Laboratory on Toxicology at the Ministry of Health, the National Institute for Research on Biotic Resources' work on preventing pesticide pollution, the UNAM Environmental Health Program, as well as implementing environmental evaluation methodologies with the Ministry of Agriculture and Water Resources (SARH) and the Ministry of Urban Development and Ecology (SEDUE). There was also collaboration with the State of Mexico on several research projects related to pesticide poisoning and on the evaluation of resistance of epidemic vectors to insecticides. The United Nations Environmental Program (UNEP) and the Caribbean Community (CARICOM) collaborated on implementing a project to protect the marine environment and the Caribbean coasts. Technical assistance was provided to develop the environmental monitoring capacity of the Caribbean Environmental Health Institute.

Veterinary Public Health

Pan American Zoonoses Center (CEPANZO)

3.75 CEPANZO is responsible for promoting and providing technical cooperation to governments to develop and strengthen zoonoses control programs including encouraging communication among the health, agriculture, and education sectors within PAHO's Veterinary Public Health Program.

3.76 **Research.** Research focused on two areas: pathology and immunology. There was collaboration in laboratory studies in pathology on the prevalence of tuberculosis in wild animals, on the susceptibility of certain animal species to rabies, on food microbiology, and on hydatidosis and brucellosis problems. The efforts in immunology included studies on the seroepidemiology of human hydatidosis, and the subsequent establishment of new standards for epidemiological surveillance of this disease. Serologic surveys facilitated early diagnosis and timely treatment of cyst carriers. The program for immunodiagnosis of hydatidosis including reference, testing for quality control, and reagents, extended its coverage to Argentina, Brazil, Chile, Honduras, Peru, Suriname, the United States, and Uruguay with CEPANZO collaboration.

3.77 **Technology.** In addition to the technology developed by pathology and immunology research in Argentina, tuberculosis standards and procedures were developed, including review of national BCG vaccine standards and a national project to control bovine tuberculosis.

3.78 **Information system.** In order to strengthen and expand the information coverage on zoonoses, a review of existing procedures and facilities in the national programs was begun in Brazil, Uruguay, and Venezuela. Publication of the bulletins on epidemiological surveillance of rabies and encephalitis in the Americas continued. To meet the information service demand, 2,719 publications were acquired, and 3,610 requests were answered for information from the countries of the Region. The Center prepared 17 publications, including technical notes and special publications, and distributed a total of 15,300 copies, 1,660 in English and the rest in Spanish.

3.79 **Training.** The organization and development of country-level international courses were stressed in order to produce a multiplier effect at the national level. The courses in Bolivia, Brazil, Cuba, Ecuador, Mexico, and Venezuela trained 443 national staff members as follows:

Program area	Courses at the Center	Courses in countries	In-service training	Total
Biosafety	20	—	—	20
Epidemiology of zoonoses	—	50	—	50
Rabies	—	9	11	20
Hydatidosis	—	23	1	24
Immunology	—	—	7	7
Tuberculosis (bacteriology)	—	30	4	34
Bovine tuberculosis (control)	—	20	—	20
Brucellosis	—	—	4	4
Food microbiology	—	82	9	91
Food safety	20	75	—	95
Laboratory animals	—	—	5	5
Toxoplasmosis	—	—	1	1
Applied learning	—	22	—	22
Applied statistics	—	23	—	23
Zoonoses and foods (inspectors)	—	27	—	27
Total	**40**	**361**	**42**	**443**

— None.

3.80 **Technical cooperation.** The Center answered government requests to provide assistance for programs in 14 countries during 1983, namely: Argentina, Bolivia, Brazil, Chile, Cuba, Ecuador, Guyana, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, and Venezuela. WHO requested advisory services to three countries in other regions: India, Indonesia, and Thailand. The Center carried on important cooperation on viral and bacterial zoonoses, rabies, tuberculosis, and brucellosis, as well as on specific aspects of food safety. The programs in rabies control in the Southern Cone countries are continuing to be developed successfully with a drastic reduction in the prevalence of the disease in Argentina and Brazil. Vaccination programs were also executed in Lima (Peru) and Venezuela, which reduced the number

of human and animal cases. Advisory services on diagnosis, vaccine production, quality control, and disease control were provided to 17 institutions in 10 countries, including 6 institutions in 3 Southeast Asian countries. Vaccine samples from 9 countries, including 2 outside the Region, were controlled and 88% met the requirements. A total of 265 nerve tissue samples from 5 countries was processed as a reference diagnosis, and 12 were diagnosed positive for rabies. Twenty-five strains of laboratory rabies virus and street rabies virus were studied in cross-protection tests in mice immunized with two types of vaccines. In tuberculosis, 10 countries (Chile, Costa Rica, Cuba, Dominican Republic, Jamaica, Mexico, Panama, Paraguay, Uruguay, and Venezuela) stepped up their bovine tuberculosis control programs. Argentina and Brazil undertook local or regional control measures; Bolivia worked on prevalence studies; and Guatemala organized its control program's structure. CEPANZO collaborated with Member Countries in developing technical infrastructure for tuberculosis control programs, both in public health and in animal health, since the laboratory methods are common to both. There were important advances in brucellosis programs of several countries, such as Chile, Costa Rica, Honduras, and Venezuela. Paraguay extended its program to the western region and undertook the evaluation of its eradication program in the Chaco with assistance from CEPANZO. Uruguay reached the bovine brucellosis eradication stage, and Argentina prepared and began to implement its national control and eradication program. The Center's Reference Laboratory furnished biologicals to 17 countries, isolated 8 strains of *Brucella* in human patients from Argentina, standardized 17 strains from Argentina and Paraguay, and controlled antigens and vaccines from 6 countries. Food hygiene and safety collaboration with Argentina, Brazil, Mexico, Panama and Venezuela took the form of organizing and developing control laboratories and formulating food safety legislation.

3.81 The Center promotes intersectoral linkage and emphasizes the importance of interministerial commissions for the zoonoses in the countries as a mechanism for the improved utilization of resources available for veterinary public health. Some progress was achieved in Brazil, Peru, Uruguay, and Venezuela. Promoting technical cooperation among countries resulted in a meeting in Brasília, Brazil, where the Governments of Argentina, Brazil, Paraguay, and Uruguay agreed to form a Commission on Veterinary Meat Inspection in the River Plate Basin. PAHO was requested to allow CEPANZO to serve as ex-officio Secretariat of the Commission due to its importance and the need for adequate coordination and expeditious action at country level and between these countries and meat-importing countries. The Center participated in the tripartite meetings between Argentina-Brazil-Paraguay and Argentina-Brazil-Uruguay, that analyzed important aspects of their joint and cooperative action in the campaign against zoonoses, especially rabies and brucellosis.

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

3.82 PANAFTOSA is responsible for promoting and providing technical cooperation to governments for developing and strengthening eradication of foot-and-mouth disease programs within the PAHO Veterinary Public Health Program.

3.83 **Research.** Work continued on the study and characterization of foot-and-mouth disease (FMD) and vesicular stomatitis during 1983. A total of 328 samples from affected countries and 189 from disease-free countries were studied. To complement the above, PANAFTOSA and the Center for Animal Virology (CEVAN) of Argentina carried out studies using biochemical and virological methods for the characterization of FMD viruses. Most of the research on vaccine production and control has focused on identifying the antigenic mass and integrity of the viral proteins (VP_1), since these are basic aspects of vaccine quality. Standardization of the methods to analyze vaccine lots produced by the Center and other plants was possible. Other research areas included identifying optimum inactivation conditions using binary

ethylenimine (BEI) to prevent antigen loss, formulating oil-adjuvant vaccines in concentrated antigens, and testing different types of mineral oil and emulsifiers available on the national market. The quality control project on standardizing reagents for controlling FMD vaccines in South America continues. The demonstration projects on using oil-adjuvant vaccine at a mass level covered approximately one million animals. Serological evaluations and epidemiological analyses of FMD epidemics continued. A study conducted on reservoirs of the FMD virus in capybaras confirmed that they are susceptible and that they transmit the disease to cattle.

3.84 Epidemiological studies on regionalization of the occurrence of foot-and-mouth disease were carried out applying mathematical-statistical techniques to the data from the information system and the epidemiological surveillance of vesicular diseases. The relationship between different livestock production systems and the behavior of foot-and-mouth disease was analyzed. A special study on the risk of introducing foot-and-mouth disease to Chile resulted in a methodology that can be applied to other FMD-free countries as well as to other diseases. The study on physical losses was completed; the results showed that there were significant milk production losses in cows and weight loss in affected calf groups.

3.85 **Information system.** Improvement in the efficiency of the System of Information and Epidemiological Surveillance of Vesicular Diseases being developed by all South American countries was the objective of collaboration on the analysis and utilization of information to orient the decision-making process in control programs. By developing indicators, studies to identify the characteristics of foot-and-mouth disease were facilitated to define endemic, epidemic, sporadic, and unaffected areas. The information system, coordinated by the Center at the international level, incorporated the data on vesicular diseases by quadrants in Panama and Central America. Chile and Mexico established information and surveillance systems to prevent foot-and-mouth disease and other exotic diseases. Brazil and Paraguay conducted surveys of foot-and-mouth disease and other infectious animal diseases. The border commission work coordinated by the Center resulted in organizing a dynamic system to exchange epidemiological information and establish health standards for marketing animals and their products. The Center coordinated a meeting in Brasília attended by Brazil, Paraguay, and Uruguay to analyze the integrated program to eradicate foot-and-mouth disease in the River Plate Basin and sanitary aspects of marketing meat and meat products. The Center continues to publish a *Bulletin* with scientific articles by technicians. Publications also included the monographs on *Porcine Vesicular Disease* and *Facts and Progress on Foot-and-Mouth Disease in South America during 1971-1981.*

3.86 **Training.** Nine three-week field courses were held on the utilization of the oil-adjuvant vaccine to control foot-and-mouth disease within the Regional Program for Training in Animal Health in Latin America (PROASA), carried out by PAHO with funds from the Inter-American Development Bank. The courses were held in Argentina, Bolivia, Brazil, Ecuador, Peru, and Uruguay with an average of 25 veterinarians participating in each course. PROASA funded the II International Course on Vaccine Production and Control of Oil-Adjuvant Vaccine attended by seven veterinarians at the Center's headquarters in Rio de Janeiro, Brazil. The Center participated in PROASA courses on animal quarantine held in Mexico and Venezuela. Three international seminars were held in Asunción, Paraguay; the one on Information and Epidemiological Surveillance Systems was attended by 51 veterinarians from South American countries, and the other two on FMD vaccine quality control had 14 veterinarians from South American countries attending the first, and veterinarians from 12 countries attending the second. Seventeen fellows from eight countries were individually trained in different aspects of laboratory and field work.

3.87 **Technical cooperation.** Brazil was helped to formulate the II National Plan for the Foot-and-Mouth Disease Campaign, that

covers a five-year period and includes eradicating the disease in the southern states of the country. Colombia received assistance to review its policies and strategies, and to eradicate the disease on the country's Atlantic coast; Uruguay was supported to prepare the country for the prevention strategy in its disease-free areas. A plan for eradicating foot-and-mouth disease was initiated in the Department of San Martín, in Peru, as was a feasibility study for eradicating the disease in the southern part of the country. Cooperation with Ecuador and Peru involved investigation of outbreaks in border areas previously considered to be free of the disease. The countries in the FMD-free area of the Caribbean received assistance to simulate an exotic disease in Jamaica in order to test the emergency plan. Technical cooperation in the area of laboratories focused on expanding the differential diagnosis of vesicular diseases and others producing similar syndromes, such as infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), and blue tongue. Cooperation for the utilization of new biochemical techniques helped differentiate field strains of epidemiological importance and determine their relationship to the strains used for producing vaccine. Technical support was given to develop and produce FMD vaccine in laboratories in Argentina, Brazil, Colombia, Ecuador, Paraguay, Peru, and Venezuela.

3.88 The Center continues to serve as ex-officio Secretariat of the South American Foot-and-Mouth Disease Control Commission (COSALFA). The progress in implementing policies and strategies for the campaign against foot-and-mouth disease was evaluated at the XI COSALFA Meeting held in Asunción, Paraguay, attended by observers from Canada, the Netherlands, the United States, IDB, the Inter-American Institute for Cooperation on Agriculture (IICA), the International Office of Epizootics (OIE), and PAHO. COSALFA's statutes were approved and will be sent to the ministries in each country. The Manual on Procedures for Maintaining, Expanding, and Securing FMD-Free Areas in South America was also approved.

Technical Cooperation Among Developing Countries (TCDC)

3.89 The primary target of technical cooperation is individual countries, and yet countries are not isolated entities. Thus, PAHO cooperation does not focus only on national programs. The proposal for a new PAHO strategy constitutes a change of approach that aims to strengthen cooperation among countries through joint projects in response to common problems and through continuous communication among national and international institutions to develop and apply knowledge. Promising developments have already been experienced in technical cooperation among developing countries in the Region of the Americas. Consolidating and expanding interinstitutional networks, such as the ones for information on sanitary engineering and environmental sciences, for biomedical information and health, and for educational technology centers mentioned earlier are all good examples of joint effort. Mention should also be made of the cooperative research to identify common critical areas undertaken by the Governments of Central America and Panama, which led to formulating a joint program covering five priority areas, the hope being that it be financed by the international financial community. Other subregional groups with major TCDC component activities have also shown progress. An agreement was signed formalizing and facilitating collaboration between CARICOM and PAHO to execute several projects and activities, such as training paramedics, primary health care, and disaster preparedness. PAHO collaborated in activities through CFNI and CAREC on food and nutrition, and the surveillance of communicable diseases. The Hipólito Unanue Agreement set priority joint action areas: essential drugs, food and nutrition, and occupational health. A study was initiated to promote concrete actions with bilateral cooperation in six countries: Argentina, Brazil, Colombia, Cuba, Mexico, and Venezuela. This study will make it possible to identify and evaluate each of these countries' capacity for TCDC activities in

priority areas, including establishing an information system to channel and promote TCDC. Technical assistance was provided to Bolivia, Guatemala, Honduras, Mexico, and Peru for analysis of the necessary mechanisms and criteria to channel the cooperation activities among countries through international public health units operating in the ministries of health. Strengthening these units is aimed at systematizing the identification of priority areas that require international cooperation; gathering and using information from multilateral, bilateral, and nongovernmental international cooperation sources on policies and procedures; and coordinating programs for international cooperation to ensure the proper and timely application of these resources.

Mobilization of International Resources

3.90 PAHO/WHO strengthened relations with UNDP, UNICEF, UNFPA, UNEP, UNFDAC, the World Bank, the Inter-American Development Bank, the OAS, IICA, several bilateral agencies, the Carnegie Foundation, and the Kellogg Foundation in order to increase the mobilization of resources from international, governmental, and private agencies toward the countries. High-level meetings have been held with several of these agencies, agreements reached, and joint declarations signed on priority topics. PAHO also served as the executing agency for several projects financed by these agencies. Agreements were signed with UNICEF at the regional level; the foundations were laid in two countries for coordinated action at the regional and country level. UNICEF gave US$500,000 to the Revolving Fund of the Expanded Program on Immunization, as the first installment of a larger amount. UNICEF's Executive and Regional Directors agreed to participate jointly in the program on the priority health needs in Central America and Panama. The projects included in the 1983-1986 Regional Program of UNDP were examined, some contributions were obtained for BIREME programs for training paramedics, and for water and sanitation in the English-speaking Caribbean countries. Collaboration continued with the UNDP on 26 projects at the country level. UNDP's financial situation, however, obliged it to reduce its regional resources and program only 55% of them, thereby adversely affecting the health sector.

3.91 The population activities that UNFPA and PAHO carry out jointly were analyzed, and as a result UNFPA considerably increased its funding for projects in which PAHO serves as the executing agency. PAHO also carries out 34 projects in 24 countries within its regional program and, in fact, contributed to attaining US$9 million for their support. Ties were strengthened with the Economic Commission of Latin America (ECLA) through work with the Institute of Social and Economic Planning on programming the social sectors and on new approaches to health planning and administration. Collaboration with the Food and Agriculture Organization (FAO) took the form of active participation in the Annual Meeting of Ministers of Agriculture, as well as joint collaboration with CARICOM in developing the Conference on Food Control and Safety for the countries of the Caribbean held in Antigua. Collaboration continued with the World Food Program (WFP), which supported 140 projects in 30 countries in 1983 at an approximate cost of US$390 million. These projects are directed to mothers, children, and students; to developing the social and economic infrastructures; and to disaster assistance. UNESCO provided outstanding support to the Pan American Network of Information and Documentation in Sanitary Engineering and Environmental Science of CEPIS (REPIDISCA). A working relationship is maintained with the Organization of American States (OAS), the Inter-American Institute for Cooperation on Agriculture (IICA), the International Labor Organization (ILO), and other Pan American and United Nations system agencies.

Mobilization of External Financial Resources

3.92 The world economic crisis and the specific socioeconomic conditions in each country created the need to reorient PAHO's cooperation approaches in mobilizing external financial resources. National policies for external financing of social sectors and governments' level of indebtedness also were taken into account to determine the viability and feasibility of project proposals. Reorienting the PAHO approach is aimed at increasing national capacity for: developing basic sector studies to be able to identify priority areas within national health plans and formulate programs and project proposals requiring external financial resources to supplement the national effort; determining the feasibility of project proposals according to health sector priorities and financing policies; and analyzing the range of possibilities offered by the sources of external financing, according to needs and the national situation. Following these guidelines, the Organization cooperated in mobilizing more than US$950 million in external resources to finance priority projects in the countries. This amount includes loans and grants; a high percentage is for water and sewerage programs for 1983–1986. Developing the health service infrastructure and supporting disaster preparedness programs are also stressed. The substantial contribution of approximately US$390 million made by the World Food Program (WFP) should be added to the above amount. In this mobilization process PAHO collaborated in defining priorities and formulating projects, in many of which it acts as executing agency.

International Lending Agencies

3.93 Special reference is made here to two of the most important agencies in the Western Hemisphere: the Inter-American Development Bank (IDB) and the World Bank. A meeting was held with IDB's President and Board Executive Directors to analyze health development in urban areas and agree on joint collaborative action. This led to a declaration of joint action, signed by the Director of PAHO and the President of the IDB. A new IDB/PAHO agreement was negotiated during the year to finance the study and formulate health, water and sanitation projects. PAHO is the executing agency for technical cooperation in 19 projects financed by IDB in the countries.

3.94 The World Bank's (IBRD) Department of Health, Nutrition, and Population and PAHO held periodic meetings to analyze programs and activities of mutual interest. The Bank increased its health sector activities considerably in the countries of the Region through execution of sector studies to identify large projects in health. PAHO collaborated with governments and the Bank in sector analyses and in formulating projects in some countries. A joint program for educating and training of personnel in project identification, design, and administration has been explored with the Economic Development Institute of the Bank.

3.95 Cooperation took place to formulate sector studies to orient policy and provide program definition for developing health service systems and to generate specific projects for developing systems with external financial cooperation in the following countries: Costa Rica, Dominican Republic, Nicaragua, Panama, and Paraguay. These countries' projects are now in the process of being approved for loans and grants totaling about US$40 million.

3.96 The countries in the Region negotiated external loans to finance drinking water and urban and rural sanitation projects with the IDB for the sum of US$245.3 million and with the IBRD for US$424.2 million. The total investment for the period 1983–1986 is equivalent to US$1,617.9 million, including US$948.4 million from national counterpart contributions. PAHO supported some of these negotiations as well as other national actions to mobilize resources needed to reach the goals of the International Drinking Water Supply and Sanitation Decade (IDWSSD) (1981–1990). In 1983 PAHO collaborated in the following activities: formulating and executing national water supply and sewerage plans in eight countries of the Region, five of which receive funding from the Agency for International

Cooperation of the Federal Republic of Germany (GTZ) and three received allocations from national funds and from the PAHO country and national budgets. As a result of these actions, five countries formulated projects and prepared financing requests for US$16 million, US$2.3 million of which are for technical cooperation. PAHO helped strengthen the managerial and operational capacity of seven institutions in five countries responsible for executing investment programs with loans of approximately US$224 million from IDB and IBRD, of which US$3.0 million of this amount is the cost of the technical cooperation to be carried out in two- to three-year periods. PAHO also assisted in formulating technical cooperation projects (US$2.5 million) to strengthen two executing institutions in pre-investment programs amounting to US$12.5 million, financed with loans from IDB and IBRD. A regional seminar held in Mexico in collaboration with the World Bank's Economic Development Institute and sponsored by the Mexican authorities trained 45 staff members from four countries in formulating projects, including the identification, preparation, and evaluation aspects. The IDB also participated in the animal health regional training program in Latin America with an investment of US$855,000.

Bilateral Agencies

3.97 The Canadian International Development Agency (CIDA) continued its program of cooperation with countries in the Region by financing 20 projects that represented an investment of approximately US$1.8 million. CIDA gave priority to disaster preparedness, human resource development, and sanitation. The Agency for International Development of the United States (USAID) channelled its financial resources into 28 projects with an approximate expenditure of US$1.9 million for family planning, communicable disease control, malaria and viral disease research, and cancer. The European Economic Community (EEC) made a substantial contribution of US$597,366 to personnel training in disaster preparedness and also provided an emergency grant of US$85,000 for floods in Paraguay. The Swedish International Development Authority also supported the disaster preparedness program with a grant of US$90,000.

Private Foundations

3.98 Significant contributions—more than US$2 million—were made by at least 32 foundations and universities for research, development of technology, and training programs. The W. K. Kellogg Foundation financed nine projects with approximately US$550,000 for developing health services and for the regional program on education in medical administration. The Rockefeller Foundation channeled approximately US$40,000 of its resources into health training and expansion of the biomedical information network.

3.99 The Pan American Health and Education Foundation (PAHEF) almost doubled its 1982 support in mobilizing educational, technical, human, and financial resources for joint programs with PAHO/WHO. It supported about 50 projects in disease control, family health, dental health, medical care, nutrition, and environmental health with US$978,000. PAHEF received grants and contributions from foundations, corporations, and universities for approximately US$1.2 million. One of its basic areas of responsibility continued to be the development of the Expanded Textbooks and Instructional Materials Program.

3.100 Regional Centers also receive support from bilateral agencies and foundations to finance research projects and develop technology. In 1983, INCAP spent US$1.5 million for this purpose, CAREC US$1.1 million, and CFNI, US$296,000.

Information on Sources of External Financing

3.101 Major efforts were made to support national capabilities in preparing regional guidelines on mobilizing external financial resources for PAHO Member Countries. The guide identifies sources of external financial cooperation that provide more than US$3 billion annually for general development cooperation in the Americas. The approved mobilization goals, as stated in the Regional Strategies for Health for All by the Year 2000, are outlined in the guide that

also offers procedural steps to accomplish financial mobilization. The full text of the guide includes profiles of 21 sources of bilateral, multilateral, and nongovernmental financial support. The pattern of international development funding in social sectors makes it clear that major financial sources such as the World Bank, Inter-American Development Bank, and bilateral governmental agencies seek to negotiate directly with Member Governments. PAHO in its role as a catalytic agent advocates the principle that requesting countries and institutions need to greatly strengthen the preparation and justification of projects. It is also clear that the magnitude of financing required to support the Regional Plan of Action calls for greatly accelerated efforts to strengthen institutional capability at national and subregional levels.

3.102 Beyond developing profile information on major official governmental and multilateral sources of external financing, PAHO initiated new efforts to increase its understanding of nongovernmental sources, such as foundations and corporations. Although PAHO has a long history of cooperation with private sector sources, the anticipated country needs to accomplish national and regional strategies call for greatly increasing PAHO's and Member Countries' capability to systematically approach such sources. Technical guidelines produced on resource mobilization have been accompanied by practical support activities and include: (1) continued exploration of new sources of financial support; (2) cooperation with Member Countries in identifying external financial requirements in project form; and (3) collaboration with countries in preparing projects for external financial assistance.

3.103 The PAHO strategy for external financial mobilization was developed on the basis of a careful review and analysis of concessional funding availability and transactions in the Region of the Americas. The major current sources of external health financing include about 30 large bilateral and multilateral development organizations; yet, there may be as many as 100 potential official and semi-official funding sources, and nongovernmental sources are estimated at more than 1,500. A measurable shift of contributions by donor governments took place, away from the multilateral system to a more bilateral form of cooperation. However, external financial sources encourage a greater role for PAHO as a catalytic and promotional agent to help Member Countries identify and prepare projects for external financing.

Chapter 4. Relevant Problems

4.1 Finding more effective approaches to guide Governments and the Organization on the journey toward health for all requires constant monitoring to identify and respond to problems as they arise. A periodic review must encompass not only national policies, programs and activities undertaken in cooperation with PAHO, but the form of that cooperation itself. This first attempt at a general review serves mainly to draw attention to noteworthy events in 1983. It also serves to underline critical problems which have appeared during the evolution of both national and regional health processes, problems which require attention and action by Member Governments and by the Organization.

4.2 **Equity, efficiency and economics.** Recent studies of the financial situation facing Member Countries have demonstrated disturbing trends in the allocations of resources to the health sector. As the Region's economic situation has deteriorated under the onslaught of a global recession, the remedial measures urged by international monetary institutions have tended to restrict the flow of resources to the health and other social sectors. Those funding cutbacks are occurring at the precise moment when additional resources are required in order to expand services through the primary health care strategy to traditionally excluded population groups. Countries must recognize the impact that these budgetary restrictions have on the capacity of the health sector to meet its obligations to health for all. However, resource restrictions are not the foremost concern. Instead, the more critical dilemma is the continuing failure of the health sector within many countries to use its available resources efficiently. The allocation of resources remains heavily skewed toward hospital care when studies are showing an important portion of that care to be unnecessary. Those resources, if directed toward expanding services at the entry level of the health system, could permit far more rapid extension of the overall system to the 40% of the Region's population currently excluded from the formal health care system. Ultimately, that extension of services is crucial to fulfilling the commitment to equity enshrined in the goal of health for all.

4.3 **Health service coverage.** Health for all and the Regional Strategies and Plan of Action established as a central objective the extension and consolidation of health services through the primary health care strategy. Latin American and Caribbean governments have responded to that obligation in varying degrees. The "Preliminary Report on the Situation in the Region of the Americas in Regard to the Strategies of Health for All by the Year 2000" (Document CD29/24, August 1983) points out that estimates of health service coverage, defined in terms of delivery capacity and actual utilization, are based on widely divergent indicators which also have different meanings depending on the particular country. The Report demonstrates that common criteria have not been adopted yet for estimating current coverage or the degree of service utilization. This failure constitutes a serious obstacle to assessing the progress achieved in each country. At regional levels, it limits the

ability to determine the departure point for the process and, therefore, the progress made by the collective effort of health for all. Moreover, this lack of information restricts the capacity of Governments to introduce strategic and programmatic adjustments or to identify and target resources for optimal impact. Such information also is needed to spotlight the specific areas requiring international financial and technical cooperation. Prompt decisions to adopt common indicators and to define those additional factors unique to each country would help overcome this obstacle, while strengthening national and regional monitoring and evaluation systems. Once again, this step demands detailed analyses in each country.

4.4 **Monitoring and evaluation systems.** In the XXVII and XXVIII PAHO Directing Council Meetings, the Member Governments confirmed the need to develop monitoring and evaluation systems to follow-up and support national and regional processes of health for all (Resolutions XX and XI, respectively). A set of minimum indicators was established for regional analyses in those areas subject to monitoring and evaluation, such as: health level, health services system, external determinants, and strategies. The first attempt to evaluate the regional situation in terms of minimum goals showed that neither national nor regional systems have developed as planned. This makes far more difficult any assessment of the results of country and regional actions, and obscures any clear understanding of the national health development process. Member Governments, the Organization, and the Secretariat must display greater vigor in their implementation of monitoring and evaluation systems.

4.5 **Operating capacity of the health sector.** The economic crisis affecting the countries of the Americas limits the availability of financial resources for health. Frequently, even approved budgets cannot be implemented due to cost increases and revenue reductions. This handicaps health service systems' operating capacity and simultaneously aggravates internal administrative problems. Moreover, many management procedures are complex and obsolete. These problems are exacerbated in some countries by historic inequities which have produced growing social unrest. Constraints in the systems' operating capacity make it urgent to accelerate effective cooperation, to utilize fully the sector's resources, to adopt modern management techniques, to mobilize additional national resources, including the community itself, and to encourage cooperation among developing countries.

4.6 **PAHO/WHO cooperation.** Adapting and reorienting the technical cooperation process to assist Governments more concretely in implementing national and regional strategies has not yet advanced. The year 1983 was a transition period for adjusting and reorienting PAHO's strategies and activities. Nevertheless, it is apparent that there is a need to synchronize the structural changes with a redefinition of functions and a change in staff attitudes—a long-term process requiring special approaches. Despite the efforts made, improvements still are needed in joint programming, in coordinating and utilizing technical resources, and in disseminating knowledge. PAHO's new Management Strategy proposes changes to promote more effective technical cooperation. Full implementation of that Strategy is critical, if existing constraints are to be overcome.

Chapter 5. PAHO Governing Bodies

Executive Committee

5.1 The Executive Committee held its 90th Meeting at PAHO Headquarters, Washington, D.C., from 20 to 30 June 1983 and was attended by representatives from nine Member Countries: Argentina, Cuba, Dominican Republic, Ecuador, Jamaica, Nicaragua, Panama, United States, and Uruguay. Observers were present from Brazil, Canada, Chile, Grenada, Mexico, Peru, Venezuela, and Spain, as well as from five intergovernmental organizations.

5.2 The Committee held 12 plenary sessions, four of which were devoted to a detailed review of the Proposed Program Budget Estimates for 1984–1985. The Committee adopted 23 resolutions dealing with the following: the functions of the Area Offices; collecting quota contributions; the Director's Interim Financial Report; the Preliminary Report on the Situation in the Region of the Americas in Regard to the Strategies of Health for All by the Year 2000; Women in Health and Development; and the Expanded Program on Immunization.

5.3 The Committee recommended that the Directing Council approve a budget of US$104,320,000 that included an increase of approximately US$13 million for country programs. It also urged the Director to continue refining the proposals contained in *Official Document 182* before presenting them to the Directing Council.

5.4 The 91st Meeting of the Executive Committee, held at PAHO Headquarters, Washington, D.C., in October 1983, welcomed three new members: Canada, Costa Rica, and Dominica.

5.5 The Committee noted the resolutions approved by the XXIX Meeting of the PAHO Directing Council and designated: Uruguay a member of the Committee of the PAHO Administration Award; Costa Rica and Dominica members of the Standing Committee on Inter-American Nongovernmental Organizations; Canada, Cuba, and the United States to membership on the Subcommittee on Long-Term Planning and Programming; and Cuba and Ecuador members of the Special Subcommittee on Women, Health, and Development.

5.6 The Committee adopted a resolution introducing rules governing the currency of salaries and allowance payment to the Bureau's staff. It adopted another resolution authorizing the Director to sign a Letter of Intent to develop the Governor Shepherd site.

Directing Council

5.7 The XXIX Meeting of the PAHO Directing Council, which acted also as the XXXV Meeting of the Regional Committee of WHO for the Americas, was held in Washington, D.C., from 26 September to 3 October 1983. Representatives from PAHO's 37 Member and Participating Governments took part with 1 observer from Spain and 12 intergovernmental and 21 nongovernmental organization observers attending. It discharged its constitutional mandate by approving the biennial program budget of the Organization, electing new

members of the Executive Committee, considering the annual reports of the Chairman of the Executive Committee and the Director of the Bureau, as well as matters referred by the Pan American Sanitary Conference or Executive Committee, and others.

5.8 In discussing the *Preliminary Report on the Situation in the Region of the Americas in Regard to the Strategies of Health for All by the Year 2000*, representatives underlined the fact that national monitoring and evaluation processes are of paramount importance in steering the countries' efforts to attain the goal of health for all and therefore should be part of every national administration and planning process, according to each country's particular characteristics. Governments were urged to give the highest priority to continued adjustment of these processes towards the most effective and efficient attainment of the goal.

5.9 Recognizing that progress of the Expanded Program on Immunization (EPI) is essential to attainment of the goal of health for all by the year 2000, the Directing Council urged Member Countries to set biennial targets for immunization coverage of children under 1 year of age and pregnant women. It recommended that coverage of such groups be used as an indicator of the performance of the maternal and child health care services, and that the evaluation of their immunization programs be stepped up. The Directing Council also requested the Director of the Bureau to continue giving EPI high priority at all the Organization's levels, and to use the progress achieved as an indicator of the success of PAHO's technical cooperation. He was also asked to study the Member Countries' vaccine production capacity as well as the quality and cost of vaccines in order to evaluate their use in the Expanded Program on Immunization.

5.10 The Council emphasized the importance of nursing staff on health teams. It recommended that Member Governments promote the role of nursing in strengthening coverage extension programs, reorient the curricula of education programs, stress research, and establish scientific and technical information networks in the nursing field.

5.11 Drug abuse is one of the fastest growing public health problems in the Region. The Directing Council urged governments to make epidemiological assessments as a basis for developing appropriate prevention strategies.

5.12 The Directing Council also recognized that Member Governments have important responsibilities and a fundamental role to play in promoting good nutrition and in protecting breastfeeding and sound weaning practices in order to improve the health of infants and young children. It urged governments to take measures toward strengthening education, training and information, to promote women's health and social status, and to place renewed attention on the need for adopting national legislation, regulations, or other suitable measures to respond to the International Code of Marketing of Breast-milk Substitutes as well as monitoring compliance with the Code.

5.13 In the women in health and development area, the Council urged governments to strengthen national policies and programs for protecting and improving women's health; enact legislation to guarantee equal rights for women; and establish mechanisms to identify and nominate more women to professional posts in the Bureau.

5.14 The Directing Council also approved the following resolutions: distribution of the Organization's financial resources; appointment of the external auditor; amendments to the Financial Regulations; annual reports of the Chairman of the Executive Committee and the Director of the Bureau; elimination of Area Offices; proposals for achieving the goal of effective blood transfusion services by 1990; restructuring the Institute of Nutrition of Central America and Panama; evaluation of the Pan American Center for Human Ecology and Health; closing the Latin American Center for Educational Technology in Health; review of the report of the Advisory Committee on Medical Research; and approval of the report on the III Inter-American Meeting, at the Ministerial Level, on Animal Health. The Council decided that Technical Discussions would not be held at meetings of the

Directing Council or Pan American Sanitary Conference where PAHO's proposed program budget was studied and approved. The Governments of Canada, Costa Rica, and Dominica were elected to serve on the Executive Committee for a period of three years, replacing Argentina, Jamaica, and Nicaragua, whose terms of office expired in 1983.

Chapter 6. PAHO Program and Budget

Financial Administration

6.1 The total funds available and appropriated for the 1982–1983 financial period were US$198,739,107 broken down into US$90,320,000 in PAHO Regular Budget Funds, US$44,487,500 in WHO Regular Budget Funds, and US$63,931,607 in Other Funds. This, compared to US$177,169,996 available and appropriated in the financial period 1980–1981, reflects an increase of approximately 12% in fund availabilities.

6.2 The Pan American Health Organization continued to grow in program expenditures and special support activities (such as the Expanded Program on Immunization) over the past 10-year period. Total expenditures from all funding sources during the 1982–1983 financial period were US$197,461,058 as compared to US$179,878,666 expended in 1980–1981, an increase of US$17,582,392 or 9.8%. Comparative expenditures for the 10-year period 1974–1983 are shown in Table 16.

6.3 Work on developing a new automated financial management system for the Organization continued. The first major subsystem for budget development and management was completed and was to become operational in January 1984. The development of program specifications and initial program designs for two additional subsystems in financial management were also initiated. The new financial management system will include four major subsystems: budget, accounting, payment services, and funds management.

6.4 Contributions due from Member Governments are based on a biennial financial period, with equal amounts assessed each year. Amounts assessed for the 1982–1983 financial period totalled US$91,375,913 of which US$80,439,188 were paid by Member Governments by December 1983.

Table 16. **Summary of comparative PAHO expenditures, by source of funds, 1974–1983** (*in U.S. dollars*)

Source of funds	1974–1975	1976–1977	1978–1979	1980–1981	1982–1983
Pan American Health Organization					
Regular Budget	45,104,194	55,549,015	64,849,985	76,576,000	88,313,916
Other Funds	15,016,474	23,895,593	33,441,662	43,791,797	44,730,210
Subtotal	**60,120,668**	**79,444,608**	**98,291,647**	**120,367,797**	**133,044,126**
World Health Organization					
Regular Budget	20,426,683	24,798,751	30,968,002	37,770,400	44,481,232
Other Funds	19,068,450	19,238,486	20,493,035	21,740,469	19,935,700
Subtotal	**39,495,133**	**44,037,237**	**51,461,037**	**59,510,869**	**64,416,932**
Total all funds	**99,615,801**	**123,481,845**	**149,752,684**	**179,878,666**	**197,461,058**

Quota contributions due for prior years totalled US$6,402,181 of which US$5,922,424 were collected during 1982–1983. The percentage of current quota assessments collected within total assessments due was 88% compared to 88.8% for the 1980–1981 period.

6.5 Interest income for the Organization increased from US$3,263,123 in 1980–1981 to US$5,484,945 in 1982–1983. This increase was partially due to high interest rates on investment accounts prevailing in the United States during 1982 and 1983, and also to the introduction of a zero-based balance system for the Organization's U.S. dollar accounts.

6.6 The Revolving Fund for the Expanded Program on Immunization received additional contributions as working capital and was capitalized at US$2,883,779. The Organization's efforts to obtain further capital contributions were successful, and the Revolving Fund was expected to be fully capitalized at the recommended level of US$4 million in early 1984. Disbursements for purchasing vaccines on behalf of Member Governments totalled US$3,986,437. A new automated procurement and funds management system for EPI's Revolving Fund was completed.

6.7 PAHO continued to provide the service of arranging for purchasing supplies and equipment on behalf of Member Governments and health agencies in the Region. Disbursements totalled US$4,477,195 in 1983.

Program and Budget 1984–1985

6.8 Resolution XVI of the XXVIII PAHO Directing Council Meeting requested the Director to formulate the draft program and budget for 1984–1985 according to the structure established in both the Regional Plan of Action and the Program Classification System established by WHO under the Seventh General Program of Work. The proposed program and budget for the biennium 1984–1985 was presented and approved under a new PAHO Program Classification Structure compatible with the WHO Program Classification Structure.

6.9 For the first time in the history of the Organization, the Directing Council was presented a proposed program budget that differed from that submitted to the Executive Committee. The Secretariat responded to suggestions made by governments attending the 90th Executive Committee Meeting by explaining that the transfer and reallocation of funds had been effected in accordance with the established priorities.

6.10 The XXIX Meeting of the Directing Council (Resolution XXIII) approved a biennial budget of US$115,554,700 for 1984–1985. The appropriations approved within that amount were as shown below.

Approved Budget of the Pan American Health Organization, 1984–1985, by Appropriations.

Part I:	**Direction, Coordination, and Management**	$ 17,548,400
Part II:	**Health System Infrastructure**	35,937,500
Part III:	**Health Science and Technology—Health Promotion and Care**	18,359,600
Part IV:	**Health Science and Technology—Disease Prevention and Control**	16,154,700
Part V:	**Program Support**	15,958,800
Effective Working Budget (Parts I-V)		**$103,959,000**
Part VI:	**Staff Assessment** (Transfer to Tax Equalization Fund)	11,595,700
Total-All Parts		**$115,554,700**

Chapter 7. Managerial Strategy

7.1 The "Managerial Strategy for the Optimum Use of PAHO/WHO Resources in Direct Support of Member Countries" was crafted following a comprehensive review of traditional technical cooperation. That review was a consequence of the changing socioeconomic and health environment and the continuing commitments of Member States and the Organization to implement the Regional Strategies and the Plan of Action for Health for All. The managerial strategy provides the Secretariat with clear guidelines to fulfill its constitutional obligations as the executive branch of the Pan American Health Organization and of the World Health Organization in the Region of the Americas. The managerial strategy, submitted to the XXIX Meeting of the PAHO Directing Council, is based on obligations originating in the Organization's fundamental mission within the policy framework established by its Governing Bodies. The purpose of the Strategy is to ensure that PAHO/WHO resources are used in the most effective way possible to improve health conditions in the Americas.

7.2 **Basic principles**. The basic principles of the strategy include five fundamental points: (1) the country is both the subject and object of cooperation; (2) governments must become participants in defining priorities and in formulating the technical cooperation programs; (3) flexibility is promoted and supported in a cooperative response to the countries' and the Region's changing conditions and circumstances; (4) emphasis is placed on mobilizing national resources to meet national needs and to provide cooperation to other countries; and (5) coordination is essential at all levels of the Organization and with other technical and financial cooperation agencies.

7.3 As a corollary to each principle in the managerial strategy, the Organization will attempt to achieve equity, efficiency, excellence, and sufficiency in applying resources to technical cooperation programs. Equity in distributing health resources in each country and their most efficient utilization to meet the needs of the high-risk population groups are part of the regional objective defined in the Plan of Action for Implementation of the Regional Strategies for Health for All. Those are the elements which will ensure the health sector's specific contribution to reducing social and economic inequities.

7.4 The strategy set up action guidelines, the most important of which are: management of knowledge, which includes generating and disseminating that knowledge, as well as supporting its appropriate utilization; mobilization of technological, human, institutional, and financial resources to increase the countries' capacity to solve their own problems and to provide technical cooperation to other countries; and functional and operational restructuring of the Secretariat. The criteria for reorganization were as follows: the Organization's internal structure should parallel, as nearly as possible, the structure approved by the Governing Bodies in the Plan of Action and by the World Health Assembly in the Seventh General Program of Work, including the program classification

system; it should respond to the strategy's emphasis on the country as the central focus of all the Organization's activities; it should be more coherent internally; it should emphasize the concept of flexibility, so that programatic changes can take place as changes in health conditions and cooperation needs occur; and finally, the new structure should avoid additional expenditures and create the least possible disruption of the Organization's normal activities.

7.5 **Operational mechanisms.** The strategy establishes the following fundamental elements: internal coordination, defined as each PAHO staff member's taking the initiative in working with other programs and thereby achieving complementary actions that yield greater impact; internal functional restructuring, based on coordination units, which tend to break down traditional bureaucratic rigidity through multidisciplinary actions at all working levels; more active government participation in directing the Organization through a joint review of PAHO technical cooperation policies, through the use of the American Region Programming and Evaluation System (AMPES), and through continuing Country/PAHO review and analysis of national priority programs.

7.6 **Management information systems.** Such systems are needed for decision-making, for enriching the programming process for monitoring and evaluating national progress, and for continuous and comparative regional analysis.

7.7 **Health research.** Research will be focused on each country's needs regarding health service delivery and biomedical problems. Developing a network of national centers with research capabilities will promote each country's self-sufficiency and cooperation among countries.

Implementing the Managerial Strategy

7.8 The strategy adopted is being implemented and has guided the Secretariat's work in 1983. Although the process requires a maturation period longer than that covered by this *Report*, there is already evidence of substantial accomplishment. Clear signs of change and reorientation are present in Chapter 3. "Mobilization of Technical and Financial Resources." Moreover, the following steps have been taken in a number of basic areas that are strengthening the management process.

7.9 **Functional restructuring of the Secretariat.** The structural and functional reorganization of the Secretariat has occurred in accordance with the established criteria. Change has produced a new organizational chart with six basic areas: the Directorate, which includes the PAHO Governing Bodies, the Director, and the Deputy Director; the Program and Operations Coordination Office under the Assistant Director; two technical Program Areas—health systems infrastructure and health program development; administration and support services; and the fundamental area of the Country Offices. The operational axis of the structure has the Governing Bodies at one end establishing policies and, through the Director, managing the Organization and, at the other, the country, where each government translates joint decisions into specific activities according to national priorities, supported by the Country Office. All the other activities revolve around this axis. Emphasis is placed on the new Analysis and Strategic Planning Unit which, in close cooperation with the Director's Office, implements the Governing Bodies' decisions. The Unit analyzes socioeconomic conditions and regional development in terms of their impact on implementing Regional Strategies and the Organization's Program. It promotes and supports multidisciplinary analyses of countries, the mobilization of national resources, cooperation among countries, and internal coordination. It also recommends policy and strategy adjustments to improve PAHO technical cooperation.

7.10 The new functions and responsibilities of the Country Offices and the PAHO Representatives generated a series of efforts to increase the Organization's operational capacity. An intense series of meetings was held with small groups of Country Representatives to orient them to the new managerial strategy and the Organization's new policies. Upgrading and training of Country Office personnel, and the updating

of Field Office administrative procedures and equipment were initiated. The Organization's administrative procedures were studied in light of the dual objective of ensuring administrative support of technical program areas while, at the same time, speeding actions and reducing costs. The Administrative Analysis Office was created to transform these ideas into action through administrative decentralization to Country Offices and greater use of automation. A study on agreements between the Organization and Member Countries, subregional institutions, and international agencies was initiated to ensure that they reflect current conditions and needs and are consistent with the Organization's new managerial strategy and policies.

7.11 Personnel management activities within the new managerial strategy framework were initiated. All staff members attended organization-wide meetings at Headquarters and in Field Offices to identify problem areas together and participate in proposing feasible solutions for the Director's consideration. These meetings resulted in establishing joint administration-staff working groups in recruitment and selection, post classification, staff development and training, and performance appraisal. Progressive application of the post classification system developed by the International Civil Service Commission, recommended in the Staff Conference, is underway. Additional funds also were earmarked to support staff development and training. The appraisal report system is being subjected to major revisions so that the performance evaluation system will best meet Organization and staff needs. Hiring national personnel for PAHO projects began in 1983. A Special Services Agreement model developed by a United Nations Inter-Agency Working Group made it possible to effect a coordinated approach in employing nationals for projects funded by the United Nations common system.

7.12 As a consequence of the pursuit of greater efficiency in the use of resources, PAHO personnel was reduced by 5% in 1983, 1,219 permanent and 88 short-term staff members were employed at the end of the year. Of these, 43% were assigned to Headquarters, 8% to Field Offices, 31% to inter-country projects, and 18% to country projects. The utilization of short-term consultants and temporary advisers increased by 25% to 1,632 in 1983.

7.13 **Multidisciplinary analyses of national priorities and areas of PAHO cooperation.** This is one of the most concrete examples of implementing the managerial strategy, through an overall approach that not only strengthens joint Country/PAHO programs, but also initiates a joint process of analysis. Multidisciplinary analyses were carried out in Bolivia, Brazil, Central America, Colombia, Cuba, Mexico, Peru, and Venezuela, and are scheduled in other countries in the future. After a high-level Government/PAHO meeting in Bolivia, a multidisciplinary group of national and PAHO staff jointly analyzed the national health situation and prepared the report "Bases for a Health Policy of the Democratic Popular Government," identifying the development of health areas and popular mobilization as fundamental strategies and defining technical cooperation requirements. A new operational structure was designed for the Ministry of Health; teams of technical personnel were created. Brazil and PAHO followed a similar procedure to examine sectoral problems and the Organization's cooperation. Although some programming adjustments were made, the focus on four areas of greatest national concern was reaffirmed: strengthening of the ministries of health, as well as their state health services network, especially at the primary care level; expansion of the manpower training program; promotion of environmental health; and acceleration of the campaign against major endemic diseases. The governments of Central America and Panama committed themselves to a collective health effort, concentrating on common priority areas, where international cooperation could produce immediate gains. The underlying theme for the project was that cooperative health activity could contribute to peace and understanding in the Central American region. The dominant priority was to increase service coverage emphasizing neglected human groups with a particular emphasis on displaced persons and

refugees. Staff from those countries, with the support of a PAHO multidisciplinary team, formulated a joint plan to harmonize and channel efforts in key areas: (1) extending service coverage equitably and effectively; (2) developing human resources to implement national strategies; (3) making essential drugs accessible to the population; (4) expanding food and nutrition programs; (5) preventing and controlling malaria and other vector-borne diseases; and (6) immediate actions for infant survival. Water and sanitation activities, already underway as part of the International Drinking Water Supply and Sanitation Decade program (1981-1990), will be integrated into the overall project. This plan will be submitted jointly by the governments to external financing agencies. In separate actions, the Cuban Government analyzed the health services situation before defining its priorities. This review was the basis for a Government/PAHO multidisciplinary group to identify those priority areas requiring international cooperation. At the same time, those program areas and technical resources were identified that the country could offer other nations within the TCDC framework. Colombia and PAHO also jointly updated basic information and formulated a diagnosis of the country's health situation, identifying the importance of formulating national health policies and strategies, developing a national health service system, and defining needs for international financial and technical cooperation. This joint review will continue on a regular basis to focus on setting national priorities as the basis for channeling PAHO assistance. Mexico participated in a joint analysis, with PAHO, of policies and mechanisms to decentralize functions and resources to the state health administrations. Venezuela jointly analyzed the Ministry of Health, its structural operation, and the economic problems facing its health services, which led to the redefining of priorities and reprogramming of PAHO/WHO cooperation. A subregional analysis of the Caribbean countries was carried out in Barbados by a multidisciplinary group that included staff from PAHO Headquarters and staff working on programs in the countries of this subregion. The joint review covered PAHO technical cooperation, major health problems, and those problems hindering cooperation in the Caribbean.

7.14 **Program area changes.** The new approaches to cooperation led to the following changes in some program areas:

7.15 *Health planning.* A strategic planning and administrative approach was designed and is being applied based on country experience in strengthening national planning mechanisms. This operational scheme permits more flexible planning, while it also defines responses to problems, such as those in marginal human groups suffering the highest risk exposure. Staff from 16 countries participated in the preparation of this instrument and acquired first-hand knowledge in its application and dissemination.

7.16 *Health research.* The new managerial strategy broadened the research concept. It is considered a basic element to generate knowledge in all cooperation programs. This involved collaboration in: (1) designing policies for research that focus on the services' and the community's priority problems in project management, and (2) developing national capacity, both human and institutional, to design, develop, and evaluate research activities. Collaboration in this process is already underway with Argentina, Brazil, Colombia, Mexico, Peru, and Uruguay.

7.17 *Health technology.* The first regional meeting of the Inter-American Conference on the Evaluation of Health Technology was organized to set guidelines and policies. This meeting focused on the analysis, selection, and use of existing and new technologies, as well as on how to generate technology as a regular program element. Four countries received cooperation to develop specific technology projects, and Regional Centers contributed in the development of simple, effective, and low-cost technologies.

7.18 *Workers' health.* The new managerial strategy's overall vision required expanding the traditional occupational health approach. The new workers' health program not only identifies occupational hazards in the workplace, but identifies workers as a part of the community, thus ensuring the participation of health services in occupational health activities. This approach seeks to protect workers who are not served under regular occupational health programs. A working group made up of representatives from five countries (Brazil, Colombia, Mexico, United States, and Venezuela) defined the objectives and content of the workers' health program as well as its relationship to other health programs.

7.19 *Information systems.* An ad hoc working group undertook a complete examination and evaluation of the current information system. It also analyzed information needs and capacities of the countries as well as those of PAHO's Country Representative Offices and technical and administrative units.

7.20 *International cooperation coordination.* The Organization strengthened official and informal relations with international and national agencies and foundations, as a fundamental part of the strategy to coordinate international cooperation and mobilize resources for health. This approach was used with the Inter-American Development Bank, the World Bank, the Economic Commission for Latin America, the UNDP, UNICEF, UNFPA, and other technical and financial national and private agencies. This measure is meant not only to establish contact, but to identify possible joint programs and projects corresponding to national and regional health priorities. These actions resulted in official agreements to carry out joint activities in given countries and in regional programs. The Organization also is collaborating at the national level to establish effective coordination mechanisms for international cooperation. Among these are the permanent governmental agencies and joint Country/PAHO committees that participate in identifying external resources required to supplement national resources for executing national health programs.

7.21 *External financing.* Changes were introduced in the cooperation provided to countries to mobilize additional extrabudgetary resources. These changes were conditioned by the world economic crisis, each country's specific socioeconomic situation, national social sector external financing policies, and the national debt levels. The reorientation is aimed at: developing basic sector studies to identify priority areas requiring extrabudgetary resources; determining the feasibility of proposals according to financing policies; and providing information on a broad range of external financing sources, especially concessionary financing.

7.22 *American Region Programming and Evaluation System (AMPES).* Action was taken to strengthen this basic management tool for programming PAHO's technical cooperation, according to the managerial strategy. The System's revisions were aimed at simplifying procedures and increasing programming effectiveness of national and PAHO resources to support the country needs. The results will not only be a more effective short-term programming of the Organization's work but a long-term improvement in the delivery of PAHO technical cooperation to each of the countries and to the Region as a whole.

Chapter 8. Support Services

Conference Services

8.1 Conference Services provided advisory or staff assistance—including translation, editing, précis-writing, and interpretation—and participated in preparing 242 meetings held by the Organization or its Member Governments at Headquarters and throughout the hemisphere. Major efforts included the organization and conduct of the XXIX Meeting of the PAHO Directing Council, the 90th and 91st Meetings of the Executive Committee, and the III Inter-American Meeting, at the Ministerial Level, on Animal Health. Other meetings for which assistance was provided included: the V Annual Meeting of Investigators in the Collaborative Cancer Treatment Research Program (Dallas, Texas), XLI Annual Meeting of the United States-Mexico Border Health Association (Albuquerque, New Mexico), 22nd Meeting of the PAHO Advisory Committee on Medical Research (Mexico, D.F., Mexico), IV Meeting of Directors of National Malaria Eradication Services of the Americas (Brasília, Brazil) and the VI International Conference on Mycoses (Cartagena, Colombia). Man-days contracted in each service to meet the needs of the various meetings were as follows: editing, 38; interpretation, 520; précis-writing, 327; and translation, 54.

8.2 **Translation.** The Translation Services Unit met requests from the Publications and Public Information Office and from technical programs and provided language services at the meetings of the Governing Bodies, PAHO-sponsored technical conferences, and seminars. More than 26,000 pages were translated into Spanish, English, Portuguese, and French.

8.3 **Machine Translation.** Machine translations were produced for Headquarters, Field Offices, and WHO in Geneva. PAHO's Spanish-into-English system (SPANAM) continued to expand its service, almost doubling in 1983 the volume handled in 1981. SPANAM was used to produce the newsletter published by the United States-Mexico Border Health Association, cancer protocols channeled through PAHO to the U.S. National Cancer Institute data bases, manuals, papers for meetings, and other documents. Development of the English-into-Spanish system, ENGSPAN, made impressive strides and was accelerated under a two-year grant received from the United States Agency for International Development in 1983.

Procurement

8.4 The Procurement Office purchased supplies, equipment, and services to support PAHO Headquarters, PAHO/WHO projects, and Member Governments under the Reimbursable Procurement Program and the Expanded Program on Immunization. Total procurement by the Organization was US$20,590,000 in 1983. Acquisitions for governments included US$4,262,900 for the Expanded Program on Immunization and US$5,583,900 for other programs. Purchases for goods and services for PAHO/WHO-funded projects totaled US$10,743,200.

General Services

8.5 Assistance was provided to a number of countries and centers in areas such as: the safety and protection management program; insurance; improvement of premises; analysis of maintenance contracts; purchase of vehicles, equipment, and supplies; and training support staff, including word processing activities. The printing and reproduction activity far surpassed 12 million pages printed, or more than 1 million per month. The word processing unit executed almost 800 jobs equalling close to 24,000 pages.

Public Information

8.6 PAHO responded to increasing numbers of press and public inquiries about the Organization and its programs, health issues, problems throughout the Americas and other WHO Regions. A system was devised to use word processing equipment that saved considerable time in responding to inquiries. More than 30 press releases were issued covering a wide variety of topics of interest that were used to inform the news media, the public, and staff of other organizations.

8.7 In its goal to increase the awareness of PAHO/WHO and health issues, material on World Health Day was distributed throughout the United States, in cooperation with the American Association of World Health, and throughout Latin America and the Caribbean. Community participation was encouraged in celebrating the event, which commemorates WHO's creation. Approximately 60 World Health Day observances were held in the United States alone, and numerous national and local celebrations took place in other Member Countries with the cooperation of the ministries of health. Films on health topics continued to be distributed to schools, universities, and community groups in the United States, and the film library increased its lending facilities to other countries. A new film on traditional medicine entitled "Herbal Medicine: Facts and Fiction" was widely requested, and a series of "Primary Health Care" films was offered. PAHO expanded its participation in exhibits and other events. A photograph exhibit, "Health in the Americas," was displayed for three months at the United Nations. PAHO participated in various health fairs and conferences in the United States.

Expanded Textbook and Instructional Materials Program

8.8 The Program continued to supply a significant number of high-quality professional textbooks in medicine (49,335), nursing (10,480), dentistry (6,181), nutrition (852), veterinary public health (2,550), and environmental health (907), as well as diagnostic and dental instruments (38,514). Although the Latin American students' buying power was greatly reduced, investment income and PAHO contributions under the PAHO/PAHEF operating agreement helped maintain a positive cash flow. Manuals for mid-level technicians and auxiliary health workers were published for the first time in 1983.

8.9 Sales for 1983 were forecast at approximately 100,000 units, 70% in textbooks and 30% in diagnostic and dental instruments. Total sales, however, were considerably lower due to local currency price increases forced by devaluations. This trend is expected to be modified in 1984, and it is hoped that program prices will become relatively stable.

8.10 Efforts are being carried out to make the Program more responsive to local, national, and regional needs and priorities. A seminar held in Brazil, in October, brought PAHO, Government, and university officials together to identify new systems to select and distribute textbooks and other primary health care training materials that are more appropriate for the Brazilian context. Textbook selection committee meetings were held in nursing administration (Panama, April 1983); other general nursing subjects (Washington, D.C., May 1983); and tropical medicine (Washington, D.C., December 1983). Several new textbooks were recommended to replace some of the more traditional ones.

8.11 Three nursing textbooks and one series of self-instructional modules were translated into Spanish for sale through the Program, covering the areas of maternity, psychiatric, and community health nursing.

Substantial progress was made on a basic psychiatric textbook. The first four manuals of the Program's series on primary health care workers were printed. Special promotional mailings for potential health service buyers and other agencies were also being prepared.

8.12 Two series of videocassettes, "Evaluación del paciente" and "Atención de emergencia," including 55 tapes were on sale during the year. An audiovisual series of educational materials for tropical medicine, covering more than 20 diseases, was in preparation. It was anticipated that the emphasis on preparing specific materials for the Program, written in close coordination with users, rather than buying and reselling textbooks from industrialized countries, would contribute to developing human resources better equipped to meet health service needs in the Americas.

Publications

8.13 The PAHO Publications Program disseminates scientific and technical information to Member Countries and to the public related to the Organization's policies, strategies, and technical programs for international and national cooperation. The Program is carried out by the Headquarters Office of Publications and its Publications and Documentation Service (SEPU) in Mexico City.

8.14 **Periodical Publications.** The *Boletín de la Oficina Sanitaria Panamericana* completed 61 years of monthly publication as the Organization's main scientific journal. A total of 69 articles was published, covering priority areas in the Plan of Action: disease prevention and control; general health protection and promotion; environmental health and health of special groups; community organization and participation; human resource development; research and technology; extension of health services coverage; and health sector financing. A quarterly section of pharmacological information with summaries of up-to-date information on drugs on the market continues to be published. The quarterly *Bulletin of the Pan American Health Organization* is the English counterpart of the *Boletín de la OSP*. Its content is selected from topics of particular interest to the English-speaking countries of the Americas. It covered the following subjects in 1983: primary health care; community participation; expanding health services coverage; health education; training of health workers; development of multidisciplinary health groups; nutrition; research; international financing for health; and maternal and child health. *Educación médica y salud* is the Organization's quarterly journal about activities and programs in education and health personnel training in the Member Countries. Articles and summaries were published on: training in veterinary medicine, nursing, general medicine, history of medicine, nutrition, dentistry, health administration, etc.; news and book reviews are included regularly. Six issues of the *Epidemiological Bulletin* were published in separate Spanish and English editions. The subject index covering all the articles included in this periodical since 1980 was also published. Reports and summaries were included on diseases important in public health, news, and data on cases and deaths from diseases subject to the International Health Regulations.

8.15 **Scientific Series.** A total of 33 books (24 titles) was published this year, 8 appeared in separate Spanish and English editions, 13 only in Spanish, 2 in Portuguese, and 1 each in Spanish and Portuguese. The 13th edition of *Control of Communicable Diseases in Man* by Abram S. Benenson, ed. 1983, was the book most requested during the year. It was translated into Spanish (Scientific Publication 442) from the original English published by the American Public Health Association. Various mental health topics were the subject of four publications, specifically, *Epilepsy: A Manual for Health Workers* (Scientific Publication 447), *Social Dimensions of Mental Health* (Scientific Publication 446), *Environment, Nutrition and Mental Development* (Scientific Publication 450), and *Depressive Disorders in Different Cultures* (Scientific Publication 458). Renewed interest in improving the status of women in the Region produced the publication on *Women in Health and Development* (Scientific Publication 448) in Spanish and English; it includes guidelines for the Regional Five-Year Plan of Action on

Women in Health and Development in the Americas, adopted by PAHO's Directing Council in 1981. Two other publications in this field are being prepared: an annotated bibliography and a report on the health conditions of women in the Americas. Three more issues in Spanish of the original English version of WHO's *Environmental Health Criteria* were printed covering, respectively, Mycotoxins (Scientific Publication 453), Noise (Scientific Publication 454), and Carbon Monoxide (Scientific Publication 455). There are now 13 volumes of the *Environmental Health Criteria* translated into Spanish by PAHO. Three publications were issued on natural disasters: one on *Medical Supplies Management after Natural Disasters* (Scientific Publication 438); another on *Health Services Organization in the Event of Disaster* (Scientific Publication 443); and the third on *Management of Nutritional Emergencies in Large Populations* (Scientific Publication 444). The Technical Discussions document of the XXI Pan American Sanitary Conference, on the *Managerial Analysis of Health Systems* (Scientific Publication 449), was published in Spanish and English. Two bibliographic reviews were issued: one on *Recent Advances in Immunization: A Bibliographic Review* (Scientific Publication 451) and the other on *Oral Rehydration Therapy: An Annotated Bibliography*. 2nd. ed. (Scientific Publication 445). The book *Diagnosis of Animal Health in the Americas* (Scientific Publication 452) collected valuable information on animal diseases in the Americas that will help improve planning national programs to combat them. Other fields covered in scientific publications were: *Training in Nutrition for Community Health Workers* (Scientific Publication 457); *Programming, Development and Maintenance of Health Establishments* (Scientific Publication 441); *Regional Symposium on Human Resources for the International Drinking Water Supply and Sanitation Decade* (Scientific Publication 437); *Manual on Basic Health Laboratory Techniques* (Scientific Publication 439); *Vaccination Certificates for International Travelers* (Scientific Publication 440); *Manual for the Control of Leprosy* (Scientific Publication 436); and the *Coded Compendium of the International Histological Classification of Tumors* (Scientific Publication 456) (the last two are in Portuguese).

8.16 **Official Documents.** Seven books were produced in this series, in English and Spanish, or in bilingual or multilingual editions, including the Final Report and Proceedings of PAHO Governing Body Meetings, the Program and Budget, Basic Documents, Financial Report of the Director, and the Handbook of Resolutions.

8.17 The PAHO/WHO Committee on Policy and Coordination of Publications held its annual meeting in December 1983, in Copenhagen, Denmark, with participants from PAHO, WHO-Geneva, WHO-Europe, and WHO-Southeast Asia. Current important areas were discussed, such as: terminology, bibliographic reference systems, a tri-regional program for producing publications in Portuguese, the regional Publication Programs exchanges early in the year, and technical cooperation for strengthening national public health publications.

8.18 **Filmstrips and Slides.** On the basis of original material provided by PAHO technical staff, the Spanish and English versions of a series of three filmstrips on different aspects of the campaign against *Aedes aegypti* were completed. A special version was made of Filmstrip No. 83, "Appropriate Technology for Delivery Care," as a slide series with a cassette-recorded narrative. A slide series prepared in English and French by the WHO Expanded Program on Immunization (EPI) was adapted to Spanish and Portuguese. Activities of the filmstrip and slide program were expanded to include preparing two color flip charts and a printed manual on maintenance and care of EPI immunization campaign equipment in Latin American countries. A broader and more complete version of the color chart on eye care at the primary level was produced in Spanish, on the basis of an English original prepared by the International Eye Foundation of Bethesda, Maryland, and produced by the WHO Program for the Prevention of Blindness. The Pan American Center for Human Ecology and Health (ECO) in Mexico was provided support to organize and produce its own series of filmstrips on ecological topics.

8.19 **Distribution and Sales.** The distribution and sales of PAHO publications showed an increase in 1983 as a result of additional promotion, which consisted of a review of the distribution lists at the country level, an agreement with the United Nations Bookshop in New York, and official participation in 13 book exhibits at international congresses and conferences. Almost one-half million publications were distributed, and the revolving sales fund for publications collected over US$200,000.

8.20 **Visual Aids.** The materials produced included graphs, maps, tables, cover designs, slides, photographs, and medical art.

Health Statistics

8.21 Information was collected to prepare a report on progress made by the countries of the Americas in implementing the strategies for HFA-2000. The report, based on information provided by 19 countries, was incorporated into the Report of the Director-General of WHO.

8.22 Available information was analyzed, and the document "Preliminary Report on the Situation in the Region of the Americas in Regard to the Strategies of Health for All by the Year 2000" was prepared and presented at the XXIX Meeting of the PAHO Directing Council. An analysis of the statistical information available on the status of women's health in the Americas is underway and will be published as a PAHO Scientific Publication during 1984 as part of the Regional Five-Year Plan of Action on Women in Health and Development.

8.23 A Working Group, consisting of staff members from the Epidemiology Program and the Offices of Strategic Analysis and Planning and Health Statistics, was established in August to study the future content and characteristics of the PAHO Statistical Data Base so that it could meet the statistical information needs of PAHO and its Secretariat.

8.24 Technical support was provided to the Inter-American Commission on Women in preparing its contribution to the World Conference on Evaluation of the International Decade of the Women.

8.25 Activities continued in the collection, processing, and dissemination of statistical information on causes of death, population, and other demographic aspects. This information and that which is collected by the technical programs are indispensable for planning and evaluating the Organization's programs. These activities also comply with commitments with the United Nations and are used to satisfy frequent requests for information made by national and international organizations.

Chapter 9. Summary of Country Activities

9.1 The *Annual Report* serves to record prevailing and emerging health problems and trends in the Region and highlights activities carried out individually and collectively by the Governments of the countries, with the collaboration of the Pan American Health Organization, to raise the levels of health and well-being of the peoples of the Americas.

9.2 The annual reports of the PAHO Country Representations were used as a basis for the summary of country activities presented in this chapter. Each of the summaries presents: the most salient aspects of actions carried out by the Governments in regional and national priority areas with PAHO cooperation, a preliminary report on the cooperation provided by PAHO/WHO; and a general evaluation of the direction that cooperation could take in the immediate future in response to specific needs in each country. Since 1983 is a year of transition, it was not possible to systematically record information on all work completed during the year; consequently, reporting on some aspects of the regional and country programs is limited.

9.3 Whatever shortcomings exist in these summaries should serve as a stimulus in the future to enhance the joint Country/PAHO strategies for programming, executing, and evaluating technical cooperation. Analysis of the work carried out can become an important part of the overall process by which the Countries and the Organization attempt to improve the health conditions of people throughout the hemisphere. It is hoped that in years to come the *Annual Report* can provide an increasingly clearer picture of the significance of individual efforts in each country and their contribution to the regional goal of health for all.

Antigua and Barbuda

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.4 The Government has made a clear political commitment to the primary health care strategy by means of development of the infrastructure for delivering health services. A survey of health service utilization was conducted to help define the Government's priorities in this respect; its results proved useful for identifying objectives. A Health Planning Committee has been organized to prepare a health plan. A survey of nursing instructors' learning needs was carried out in health manpower development. Antigua also participated in a refresher course for veterinarians and animal health and veterinary public health assistants.

Health promotion and disease control

9.5 PAHO has been directly involved in providing administrative and technical support for the UNFPA-funded project in maternal and child health and took the initiative in solving several problems that arose in this project's financing and program management.

9.6 The Government indicated the importance it places on health education by

assigning a national staff member to that function. Staff training took place, and programming improved perceptibly. The Organization collaborated in health education by providing fellowships, distributing information, and supplying films.

9.7 The nutrition strategy continues to promote breastfeeding and other forms of infant feeding. Additional activities included improving dietary management of diabetes, hypertension, and obesity.

9.8 The disease prevention and control program is high among national priorities. The Government continued to stress surveillance and control of communicable diseases. Collaboration with the Expanded Program on Immunization (EPI) has been very satisfactory. The Caribbean Epidemiology Center (CAREC) is developing and strengthening its surveillance and providing several opportunities for epidemiologists to participate in workshops and other training activities outside the country.

9.9 PAHO serves as the executing agency for the UNDP-funded project to strengthen laboratory services. This involved discussing the organization and development of laboratory services; facilitating participation in a workshop on basic hematology; helping prepare manuals and laboratory procedures; and establishing a referral system for histopathological specimens.

9.10 The activities in animal health and veterinary public health are progressing satisfactorily, although there are special dermatophylosis problems. The country hosted a subregional seminar on food safety control, in which a number of nationals participated. The vector and pest control program needs to be strengthened to lower the high level of *Aedes aegypti* in urban and rural communities on the island. Changes in the program during the year resulted in stricter field supervision and a tighter health index verification process. Surveillance of *Anopheles albimanus* breeding habitats and treatment of positive sites, which are monitored regularly, made important strides forward.

9.11 Antigua and Barbuda received assistance from the Pan-Caribbean Disaster Preparedness Health Team, which is stationed in Antigua. This team is collaborating on preparing a hospital disaster plan, has awarded fellowships for participation in subregional workshops, and distributed information and technical material to the Ministry of Health.

Cooperation Provided by PAHO/WHO

9.12 **Professional staff assigned to the country:** Whereas no full-time professional staff is assigned to Antigua and Barbuda, a regional adviser and the Pan-Caribbean Disaster Preparedness Health Team are based on the island. Most cooperation is provided by the Organization's staff in other parts of the Caribbean and from Headquarters, the Caribbean Epidemiology Center (CAREC), and the Caribbean Food and Nutrition Institute (CFNI). Consultants in health systems development, manpower development, disaster preparedness, disease control, environmental health services, nutrition, vector control, maternal and child health, and veterinary public health medicine were provided to collaborate with the Government in its efforts.

9.13 **Fellowships:** Six fellowships were granted in: health services (2), mental health (3), and clinical medicine (1).

9.14 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.15 The activities of the Government of Antigua and Barbuda have had an impact during the year on the health of the population. One area of assistance identified for the future would be the management of resources. The decision-making process is highly centralized and changes take time; however, the Government is looking forward to increased progress in the years to come given efforts to promote a planning approach, extend the delivery of health services, and organize a Health Committee to prepare a health plan. The redeployment of PAHO staff to neighboring islands as well as to Antigua and Barbuda should make collaboration with the Government even more effective.

Argentina

Actions with PAHO/WHO Collaboration

Developing the health service infrastructure

9.16 The national goal of consolidating the health system equitably and with broad coverage was translated into action in the areas of planning, administration, and extension of services with primary care. These areas were developed by disseminating knowledge and training and upgrading health personnel. The courses given for this purpose were: three on administration and planning (Buenos Aires and Córdoba); six national and provincial seminars on regional health strategies and their national implications; four provincial seminars on service coverage with primary care; three seminars on planning and evaluation; and one in-service training course in health statistics. An operational study was also initiated on expenditures, costs, and health service productivity, and models were designed for primary care and nursing services.

9.17 **Human resources.** Strengthening regular manpower development courses was stressed in the Schools of Public Health of the Universities of Buenos Aires and Córdoba, as well as in the School of Nursing. The program for training in sanitary engineering was considered an important one with national courses conducted on: basic sanitation in primary care, urban sanitation, sanitary landfills, and radiation protection.

9.18 **Environmental health.** The emphasis was on planning and managing water systems, sewerage, and solid waste management, developing technologies for sewerage treatment, and pollution control.

Health promotion and disease control

9.19 **Disease prevention and control.** Strengthening epidemiological surveillance systems by evaluating programs in operation, establishing the National Epidemiology Commission, and conducting research on the outbreak of poliomyelitis in the Chaco are activities that deserve special mention. There was also an evaluation of the Expanded Program on Immunization (EPI) and an intensification of personnel retraining. Two outstanding events were progress in research on Chagas' disease and experimental tests on the hemorrhagic fever vaccine produced in Argentina. The Malbrán Institute continued a program aimed at upgrading its technical personnel.

9.20 Important studies on cardiovascular risk factors, feasibility of multidrug leprosy treatment, and accident prevention have taken place.

9.21 **Maternal and child health.** Several seminars on risk factors for determining priorities and on diarrheal diseases in infancy should be mentioned. Nutrition seminars were held on evaluating health conditions of children and on applying methodologies for nutritional surveillance of the mother.

Cooperation Provided by PAHO/WHO

9.22 **Professional staff assigned to the country:** Five, including: a coordinating medical officer (PAHO/WHO Country Representative) and advisers in epidemiology, medical care, sanitary engineering, and laboratory services.

9.23 **Regional and intercountry advisers:** Twelve, for short-term work in: planning, administration, medical care, sanitary engineering, nursing, epidemiology (2), parasitology, zoonoses, rehabilitation, maternal and child health, and drug control.

9.24 **Short-term consultants (STC):** Fifteen, in: health education, maternal and child health, communicable diseases, nursing education, virology, sanitary engineering (2), toxicology, ecology, epidemiology (2), educational technology (2), psychiatry, and institutional management.

9.25 **Fellowships:** Thirty-four fellows studied abroad in specific areas of development of health services and disease prevention and control.

9.26 **Seminars and workshops:** Thirteen, on regional health strategies, primary care, planning and evaluation.

9.27 **Courses:** Four, in management and planning and health statistics.

9.28 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, CLAP, CLATES, ECO, PANAFTOSA, and financial cooperation from TDR (WHO).

General Appraisal and Future Trends

9.29 National activities correspond to the strategies and regional objectives. The areas that the country is developing and the collaboration that has been required from PAHO/WHO indicate that the national authorities are emphasizing training and development of human resources in health, research on priority problems, and the development of technology.

Bahamas

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.30 A program planning approach to the Ministry of Health and Social Action's activities is being strengthened and provides an excellent mechanism for the meaningful development of both national programs and the Organization's cooperation. Administrative aspects of health services delivery to the islands remain a national priority. The reallocation of portfolios following national elections resulted in revision of the health policy. The Government has been intent on establishing and maintaining a sound health information system to serve as the base of the entire health delivery system. Effort has also been put into strengthening the drug supply management system. The recent development of a central purchasing unit within the Ministry of Finance attempts to render the health sector's supply management system compatible with the centralized system. The objective in health manpower development is to create a comprehensive plan for maximum utilization of both national and international resources available to upgrade national personnel. The need to strengthen institutional resources for educating health personnel and nursing education programs has also been identified. Great success has been achieved in training plans for health personnel with both PAHO and national budget funds for fellowships. The community nursing curriculum is almost complete. The Government placed emphasis on training environmental health personnel in vector control techniques, solid waste disposal and management, and food and meat inspection. The diversification of the economy resulted in an increase of industrial operations including many chemical manufacturing plants. This brought up a concomitant concern with occupational health and industrial hygiene. Cooperation was provided through the Pan American Center for Human Ecology and Health (ECO) in Mexico. PAHO supports the Government in preparing an environmental health program.

Health promotion and disease control

9.31 PAHO assisted in the Government's plan to enlarge the dental health program by evaluating the future needs of this program and providing a fellowship in dental public health. The Organization also helped train a health education officer so as to further strengthen this area. In nutrition, the Government trained a national counterpart who in turn will develop a nutrition strategy. Surveillance of communicable diseases included activities to upgrade staff through disease surveillance training abroad and locally. Progress was registered in the laboratory proficiency testing program and in training laboratory personnel. An oral rehydration therapy program is gradually being implemented to treat diarrheal diseases throughout the islands. A successful immunization workshop on appropriate technology for health was held, using the specific coverage for the Family Islands' communities as a basis for discussion.

Cooperation Provided by PAHO/WHO

9.32 **Professional staff assigned to the country:** One full-time Program Coordinator was assigned to the Bahamas.

9.33 **Regional and intercountry advisers:** In addition to the Coordinator, other cooperation comes through the Organization's staff located in various parts of the Caribbean, as well as from Headquarters, CAREC, and CFNI. Consultants in health systems development, manpower, disaster preparedness, disease

control, environmental health, nutrition, maternal and child health, and veterinary public medicine were provided in order to collaborate with the Government in its efforts.

9.34 **Short-term consultants (STC):** Short-term consultants in environmental health and nursing manpower provided technical cooperation during the year.

9.35 **Fellowships:** Sixteen fellowships were awarded this year in: public health administration (2), health organization (5), environmental health (1), nursing services (1), health services (2), dental care (1), and communicable disease control (4).

General Appraisal and Future Trends

9.36 PAHO's collaboration with the Government proved both supportive and effective. Although the level of cooperation in some specific areas was reduced due to the unavailability of staff resources, especially in solid waste management and statistics, plans are underway to meet the Government's requests. Environmental health problems are expected to receive increased attention in view of the importance of tourism in the Bahamas. Government concerns in these areas will probably require additional support from the Organization. Posting a full-time statistician from the Organization to collaborate on national information systems and on collecting basic data for various programs will be an additional asset for the Government.

Barbados

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.37 Progress was made toward the goal of implementing a National Health Service. It is hoped that by the end of 1984 all citizens will receive medical care at no cost. The planning process is being strengthened for this purpose, and an analysis and adjustment of the methods and procedures leading to developing appropriate technologies were undertaken. A study on general medical practices was also conducted with the participation of the University of the West Indies. Specific nursing service management and organization problems were examined and solved, which should serve to improve the provision of health care. The standards for hospital care and community services were updated. A review was conducted on the nursing education program, and adjustments were made in the clinical objectives of the nurses and obstetricians' curricula. Reorganization of the National Health Education Unit continued, especially in the area of providing supplies and equipment.

9.38 The Water Authority was strengthened to work toward the national environmental health goal of ensuring the availability of drinking water, waste disposal, and pollution prevention and control. Developing human resources was also emphasized through training abroad in analyzing environmental impact, treatment systems, and industrial hygiene, as well as with local workshops on pesticide problems. Two studies were initiated with IDB funds—one on dangerous waste disposal and the other on the sewerage system in the south.

Health promotion and disease control

9.39 A review of the functions of the National Nutrition Committee resulted in reorganizing the Nutrition Center program. Personnel were decentralized to polyclinics and trained in diabetes mellitus, obesity, malnutrition, and gastroenteritis. Manuals for this purpose, which also include public education aspects, were prepared.

9.40 Significant activities took place in maternal and child health and family planning, such as a health and family life workshop that resulted in consolidating the new Family Life Education Council and developing a seminar on national policies for the use of contraceptives. Emphasis in dental health was placed on training authorized dental para-professionals.

9.41 Disease prevention and control action stressed the Expanded Program on Immunization, whose financing has been secured for the next three years; training personnel in laboratory techniques and

management; and a workshop on operating and managing the *Aedes aegypti* program. Emphasis in noncommunicable diseases is on training for alcoholism control and a workshop on the prevention of blindness. Also important were training in disaster preparedness and rodent and rabies control activities.

Cooperation Provided by PAHO/WHO

9.42 **Professional staff assigned to the country:** A medical officer, the Caribbean Program Coordinator, who also acted as the PAHO/WHO Country Representative for Barbados.
9.43 **Regional and intercountry advisers:** Advisers provided technical cooperation in planning, technology, nursing, health education, sanitary engineering, nutrition, epidemiology, and family planning.
9.44 **Short-term consultants (STC):** Five consultants provided technical cooperation in environmental health, pollution, dentistry, blindness, and veterinary medicine.
9.45 **Fellowships:** There were 24 fellowships awarded, mostly short-term, in environmental health, dental health, maternal and child health, epidemiology, laboratory services, alcoholism, disaster preparedness, and rodent control.
9.46 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.47 A health sector plan exists within the National Development Plan, but the process of achieving the national priority of a national health service progressed slowly due to the economic crisis. The authorities channeled PAHO/WHO cooperation to strengthening specific areas of the infrastructure, training personnel, improving the environment, controlling diseases and conducting research on health problems.
9.48 The Government plans to expand National Health Service activities, which will result in increasing operational capacity, extending coverage, consolidating the referral system, and developing human and material resources.

Belize

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.49 A Health Planning Committee—made up of senior technical officers and program directors in the Ministry—completed the final draft of a Five-Year Health Plan. Efforts were made to initiate detailed national programming and evaluation, and the health budget format was modified to reflect program budgets. Health care programs were administratively restructured under the following divisions: community-based programs; communicable diseases; environmental health including food sanitation, malaria and *Aedes aegypti* control; disease surveillance and health information; and health education and community participation.
9.50 Work on a health information system continued to advance; the system now includes a new reporting form for rural and district health centers. The comprehensive primary health care information system will be operational in the near future. A simplified system for reporting notifiable diseases significantly increased cases registered. Each manpower development program area defined its short- and medium-term staff requirements. The School of Nursing reviewed its professional curriculum, emphasizing community nursing and primary health care. Closer ties were established with the Belize College of Arts, Sciences, and Technology. The general manpower situation improved notably in 1983. All established medical and nursing posts were filled, although some laboratory and pharmacy posts remain vacant. An assessment of health manpower needs was begun in 1983 and will continue in 1984.
9.51 Some progress has been made in environmental health, but the program suffers from a lack of equipment, supplies, and transport facilities. Water quality surveillance is improving, but still requires assistance. For Belize City a water treatment plant was funded by the Canadian International Development Agency (CIDA)

and some work has begun in establishing a solid waste disposal system. Food sanitation measures need to be upgraded: inspection needs to be improved in establishments, for which food inspectors need further training.

Health promotion and disease control

9.52 High priority was placed on strengthening malaria control activities. An exhaustive epidemiological assessment was carried out and the malaria program placed under the supervision of the Environmental Health Division. A comprehensive analysis of needed resources was presented to the Cabinet, which then targeted malaria control as an area requiring external funding. The rate of yearly increase has been reduced and, if present trends continue, a real reduction in incidence is expected in 1984. The immunization program continued to expand coverage. Cold chain facilities improved at the peripheral level, but more refrigerators are needed for rural and district health centers. *Aedes aegypti* control included larvicide and adulticide activities, which were routinely carried out in all major urban areas; no dengue outbreaks were reported. Activities in diarrheal disease control were successful in reducing infant mortality. In Belize City an innovative project utilizing volunteer community health workers was highly successful and will be extended to include other maternal and child health components. The diagnostic laboratory procedures for tuberculosis control were greatly improved, and active case detection increased.

Cooperation Provided by PAHO/WHO

9.53 **Professional staff assigned to the country:** PAHO does not have any permanent staff assigned to Belize, but in May the Chief Medical Officer of Belize was designated the PAHO/WHO Program Coordinator in the Country.

9.54 **Regional and intercountry advisers:** Advisers were provided in the areas of malaria control, diarrheal diseases, environmental health, and health statistics.

9.55 **Short-term consultants (STC):** Short-term consultants were provided on malaria and environmental health.

9.56 **Courses and seminars:** A one-week health programming workshop for senior Ministry personnel and program directors was held in August. Workshops were also held in malaria and diarrheal disease control.

9.57 **Fellowships:** Thirteen fellowships were awarded in: subfields of health organization (3), a specialized field of environmental health (1), nursing education (2), public health nursing (2), specialized nursing (1), malaria control (1), and clinical medicine (3).

9.58 **Technical cooperation from PAHO Centers:** CAREC and CFNI provided technical assistance during the year.

General Appraisal and Future Trends

9.59 The Government of Belize developed the groundwork for an active program based on primary health care. The areas of cooperation between the Organization and the Government are expected to increase in number in the future, once the Five-Year Health Plan is implemented. One of the areas requiring special attention is the development of intersectoral links to implement the primary health care strategy. At the senior governmental level, the need has been identified for developing policies that include health, education, and the social sectors—an area in which PAHO could cooperate with the Government. A comprehensive national water policy and development of a coordinated mechanism for its implementation is another area of potential cooperation, as is the planning of manpower development.

Bolivia

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.60 Two major areas stand out in the national program to strengthen the system and expand health service coverage: (a) administrative reorganization that implies actions in designing and implementing operative systems, personnel management,

financing and decentralization, intra- and intersectoral linkage mechanisms, and supply management; and (b) regionalization that stresses establishing the bases for hospital regionalization, rationalization of the use of resources to improve performance and reduce expenditures, and training personnel through seminars on regional strategy analysis vis-à-vis the national reality, primary care, information systems, and nursing administration. Formulating a comprehensive health plan of the Department of Santa Cruz was an important achievement in the process of extending coverage. This endeavor, now in the initial stages of implementation, includes regional goals and strategies, as well as the plan to extend health service coverage and basic sanitation.

9.61 The Government and Country/PAHO multidisciplinary groups adjusted their policies and strategies in the second half of the year, developing a new operational structure for the Ministry of Social Service and Public Health and for standardizing technical groups. The experience and models developed in Santa Cruz were used to begin to draw up a comprehensive program for development of health areas and implementation of popular mobilization.

9.62 The following environmental health actions stand out in the National Water Supply and Sanitation Plan (Water Decade): activities to coordinate the sector, development and institutional consolidation, adjusting and formulating projects for the Tarija and Oruro water systems, basic rural sanitation programs, and strengthening the water agencies of Santa Cruz and La Paz.

Health promotion and disease control

9.63 The most important activities in disease control were: training people to strengthen the epidemiological surveillance system, promoting the Expanded Program on Immunization, and conducting research on hospital infections. An evaluation of the malaria program was made, and research continued on insecticide resistance in Guayamerín.

9.64 Training in maternal and child health was intensified through four academic fellowships for the Regional Directors of La Paz, Riberalto, Tarija, and Tupiza, and by three short program management fellowships. Equipment was obtained for 35 medical stations and 87 health units. Technical and programming standards were designed. Within the study of infant mortality, the first survey was carried out using data processing.

9.65 A strategy in nutrition is being developed to increase production and expand the coverage of iodized salt consumption for controlling endemic goiter.

Cooperation Provided by PAHO/WHO

9.66 **Professional staff assigned to the country:** Eight, including: a medical officer, the PAHO/WHO Country Representative, and advisers in planning, health administration, nursing, sanitary engineering, administrative methods, disease control, and malaria.

9.67 **Regional and intercountry advisers:** Nine, for short periods, in: planning, administration, epidemiology, maternal and child health, nutrition, nursing, health statistics, sanitary engineering, and education.

9.68 **Short-term consultants (STC):** Twenty, in: administrative methods (2), educational technology, health administration (4), budget formulation, hospital administration (2), programming and investment, hospital architecture, institutional development, design engineering, solid wastes, toxicology, epidemiology, refrigeration engineering, sanitary engineering, and health education.

9.69 **Fellowships:** Nine, for study abroad, in maternal and child health and environmental health.

9.70 **Seminars and workshops:** Nine, in developing health systems and community participation.

9.71 **Courses:** Two, in environmental health.

9.72 **Technical cooperation from PAHO Centers:** CEPANZO and CEPIS.

General Appraisal and Future Trends

9.73 The outcome of the meeting held by health authorities and the Director of the Pan

American Sanitary Bureau on the country's general situation and health problems was identification of the need to channel national efforts within the context of the Regional Strategies. Health authorities decided to reprogram collaborative actions in order to take maximum advantage of PAHO/WHO cooperation. Several interdisciplinary national and PAHO/WHO technical groups analyzed national policies and priorities and proposed that strategies be reviewed and reformulated, program lines redefined, operations restructured, and community participation mechanisms developed. These adjustments will serve as the basis for the PAHO/WHO cooperation program in the immediate future.

Brazil

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.74 The national objective of strengthening State Ministries of Health and developing a network of units to expand coverage stressed programming by levels, designing a referral system, preparing an operational techniques manual for the local level, and developing the data processing system.

9.75 The development of human resources for the Ministry of Health requires that emphasis be placed on preparing planning and evaluating system models and designing systems for federal units, which include supervision and training in basic services. Emphasis was also placed on the human resources for executing studies on programming resources and on identification of human resource patterns for medical care within the social security institutions. Preparing study programs for visiting health care personnel and methodologies for supervisors was also considered important. In health education the medical teaching survey was carried out and its conclusions implemented, graduate health courses were held, and the experience acquired during the process of integrating the university hospitals into a service network was applied.

9.76 Highlights in research were: a study on human resources, an institutional analysis of the sector, and the implementation of a research information system. In the human resources field, importance was placed on developing user techniques and teaching methods, which the Nucleus for Educational Technology in Health (NUTES) has undertaken in Brazil and other Latin American countries.

9.77 The emphasis in environmental health was on strengthening the sanitation teams at the State Ministries of Health in Pará, Maranhão, Piauí, Ceará, Rio Grande do Norte, Pernambuco, Alagoas, Sergipe, and Bahia. The Secretariat of Planning helped update the progress achieved in rural and urban water and sanitation. Research was done in water supply technology and rural sanitation systems, which included organizing a regional seminar on appropriate technology for rural water supply and preparing a manual on operating and maintaining rural water service systems. Other activities were the diagnosis for project area identification, management control, strengthening of operations, joint activities with the National Housing Bank, institutional development of state environmental sanitation agencies, and intensification of the water quality surveillance program. Also important were the courses on analytical quality control and solid waste management, held by the State Basic Sanitation Technology Agency.

Health promotion and disease control

9.78 The following disease control activities deserve to be mentioned: testing operational models for DPT and measles vaccinations that were developed by evaluating the Expanded Program on Immunization (EPI); organizing the epidemiological surveillance system by levels; and a course and two workshops for local-level health workers in epidemiological methods. The National Diarrheal Disease Control Program was consolidated, an operations manual drafted, and a study on mortality in children under five years of age was carried out. The tuberculosis and acute respiratory disease programs advanced, as well as leprosy diagnostic training, treatment, and

rehabilitation. The process of integrating mental health into general health services continued. Standards for chronic disease care were established, covering rheumatic fever, arterial hypertension, cancer, and diabetes mellitus.

9.79 Cooperation in maternal and child health focused on training manpower through courses held at the Universities of Brasília and São Paulo and at State Health Ministries. Two workshops on the risk approach in maternal and child health were held. The national food and nutrition program highlighted implementing the integrated program, held a course on nutrition and primary care, and worked on developing the dietary surveillance system.

9.80 The priority area of controlling major endemic diseases reported the following activities: strengthening program planning, supervision, and evaluation; adapting control methods to ecological conditions; and extending the epidemiological surveillance system to prevent diseases from spreading to disease-free areas. The malaria problem is still basically located in the Amazon region, where the strategy of concentrating public and private sector resources continued in respect to epidemiology, socioeconomic conditions, and attack measure effectiveness. The maximum level of comprehensive coverage in Chagas' disease was achieved where that disease is prevalent. The residual foci of *Aedes aegypti* were reduced, and the program was reviewed to solve problems. Evaluating the impact of the schistosomiasis program included basic sanitation and showed a substantial reduction in some areas from 13% in 1973 to 3% in 1983. Techniques to diagnose plague were improved through use of serological examination by immunofluorescence.

9.81 The important activities in veterinary public health were: improving laboratory diagnosis of rabies and rabies vaccine control, holding a course on the diagnosis of brucellosis, and programming control of zoonoses in São Paulo. The National Quality Control Institute and the food and drug control laboratories network were strengthened through registration, inspection, and standards adjustments.

Cooperation Provided by PAHO/WHO

9.82 **Professional staff assigned to the country:** Twenty, including: the PAHO/WHO Country Representative, and advisers in: planning, health administration, nursing, epidemiology (2), health statistics, medical education, administrative methods, malaria, entomology, parasitology, vector control, sanitary engineering (2), veterinary medicine (2), drug control, maternal and child health, and nutrition.

9.83 **Regional and intercountry advisers:** Fourteen, for short periods in: epidemiology, sanitary engineering, medical education, nursing, nursing education, nutrition, rehabilitation, systems analysis, malaria, *Aedes aegypti* control, vector control, entomology, virology, and microbiology.

9.84 **Short-term consultants (STC):** Thirty-six, in: nutrition (4), perinatology, medical education (2), education techniques (2), institutional development, sanitary engineering (2), water quality control, epidemiology (2), respiratory infections, rheumatology, cancer, diabetes, toxicology, entomology, parasitology, public health administration, plague epidemiology, plague parasitology, laboratory patterns, biology, spectrometry, pharmacology, administrative methods, drug management, maternal and child health (2), mental health, hypertension, and data processing.

9.85 **Fellowships:** Forty-three fellowships were granted for study abroad, in disease control, environmental health, maternal and child health, and nutrition.

9.86 **Seminars and workshops:** Twenty-two seminars were held on developing human resources, environmental health, and maternal and child health.

9.87 **Courses:** Twelve courses were given in disease control, environmental health, and maternal and child health.

9.88 **Technical cooperation from PAHO Centers:** BIREME, CEPANZO, CEPIS, CLATES, and ECO.

9.89 **Cooperation from other agencies:** IDB, IBRD, FAO, UNDP, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.90 Technical cooperation with Brazil must, per force, be determined by the broad spectrum of socioeconomic and political conditions in the country, the level of development achieved, and the consequently complex nature of sector planning.

9.91 There are five major areas in which PAHO can cooperate with the country:

(a) Consolidation and extension of the health service infrastructure through coordinated utilization of the sector's resources, by strengthening State Ministries and their health service systems, including interinstitutional linkages. Preference in this endeavor is given to developing primary levels and linking them to the system.

(b) Promotion of the training of required human resources for priority areas and the retraining of those currently working with the most important programs.

(c) Development of science and technology.

(d) Improvement and protection of environmental health through multi-institutional actions to allow both national and international resources to be channelled and utilized in priority areas, giving preference to marginal urban and rural groups.

(e) Promotion of the campaign against the major endemic diseases that traditionally have been the Government's primary concern and that, when combined with other actions in the sector, have direct repercussions on regional development and the execution of overall plans.

9.92 A Country/PAHO multidisciplinary group examined PAHO/WHO cooperation vis-à-vis the national priorities. Although the components of that cooperation were adjusted due to specific changes of emphasis, no basic changes in the general areas of PAHO/WHO cooperation are foreseen in the near future.

British West Indies

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.93 The countries included in this report on the British West Indies are: Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat, and the Turks and Caicos Islands.

9.94 PAHO collaboration in developing the health services of these islands has been similar. Their common concern is not of an organizational nature but of resource management. Service to individuals is given priority, and the most important activity has been promoting a planning approach for health services delivery. An explicit task in the Cayman Islands was to develop a comprehensive health care delivery system based on primary health care, directed by a Medical Officer and a Senior Public Health Nurse. The highest priority for the Turks and Caicos Islands in developing their health services is health statistics, information services, and improving hospital administration. All the governments continue to strengthen their health resources by training staff with PAHO collaboration through workshops or fellowships. Clinical nurses were trained in maternal and child health skills in the Turks and Caicos. Bermuda's Government is in the process of institutionalizing a program for aides on geriatric nursing training. This program will also develop nursing home standards and certify the training of those who care for the elderly. PAHO assisted in all aspects of environmental health through fellowships, seminars, and meetings such as the PAHO/CDB (Caribbean Development Bank) Caribbean Conference on Development and Financing of Water and Sanitation Projects, the seminar on health in the general education system, as well as the CARICOM/PAHO/FAO Conference on Food Safety and Control. The environmental health program in the Cayman Islands was reinforced by recruiting an environmental health engineer and the program expanded to include environmental impact assessment of

development projects. The Organization collaborated in Montserrat by providing advisory services for a new abattoir and by promoting development of diagnostic laboratory capability. The Organization collaborated with and strengthened animal health and veterinary public health programs and assisted in developing a zoonoses surveillance system. Program support was increased in Anguilla, with a Voluntary Services Organization entomologist appointed to the project. Increasing the use of top feeding minnows (*Phoxinus aphys*) in cisterns and drums resulted in a significant reduction in *Aedes aegypti* vector indices.

Health promotion and disease control

9.95 The Organization acted as executing agency for the UNFPA-funded maternal and child health and family life education program, which provides assistance throughout the Caribbean. Montserrat required less assistance in this area than other countries due to its small size and its generally well organized basic maternal and child health services.

9.96 The nutrition strategy continues to promote breastfeeding and dietary guidance on feeding the weaning age group. Other objectives are to improve the dietary management of diabetes and hypertension in obesity. Collaboration with CFNI and the Turks and Caicos had a great impact on the iron-deficency anemia program. The food and nutrition program in the Cayman Islands is being reactivated. Emphasis so far has been on hospitals and their food service, but activities include follow-up of the diabetes workshop.

9.97 Surveillance and control of communicable diseases continues to have a high national priority on all of the islands. They participated in the immunization program and, with CAREC's assistance, are developing and strengthening their surveillance and laboratory capabilities. PAHO collaboration in the Turks and Caicos resulted in great improvement in the immunization status. CAREC collaborated in disease prevention and control with on-site visits, fellowships, training, and laboratory referrals.

9.98 In the area of disease prevention, CAREC was requested by the Turks and Caicos to examine an outbreak of primary tuberculosis.

Cooperation Provided by PAHO/WHO

9.99 **Professional staff assigned to the islands:** Although no full-time professional staff is assigned to any of the islands of the West Indies, considerable cooperation is provided by Organization staff located in various parts of the Caribbean, Headquarters, CAREC, and CFNI. Consultants in all areas of expertise are made available upon request.

9.100 **Fellowships:** Twenty-seven fellowships were provided: for public health administration (1), other aspects of health organization (7), public health nursing (2), nursing services (2), other types of nursing (1), mental health (4), laboratory services (1), communicable disease control (5), and clinical medicine (4). Assistance was also provided in the form of supported participation in seminars, meetings, and workshops held in neighboring countries in the Caribbean.

9.101 **Technical cooperation from PAHO Centers:** Both CAREC and CFNI provided extensive cooperation during the year.

General Appraisal and Future Trends

9.102 Generally speaking, the Organization's assistance to each island has been effective. The small size of the islands and the reduced availability of resources makes it imperative that PAHO/WHO collaboration be extremely well coordinated in order not to overwhelm or disrupt national activities. It is anticipated that collaboration with the Governments will continue along the same lines in the years to come.

Chile

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.103 The process of regionalization and extension of coverage was advanced by modernizing the information system through training personnel in four training seminars for health service auxiliaries and one on primary health care for medical doctors. Activities to develop human resources were carried out in primary care, health administration, research, and epidemiology. Important achievements also took place in health science education with fellowships abroad in health administration, primary care, rural health, nutrition, parasitology, cardiovascular diseases, and several clinical fields. The teaching equipment of the School of Medicine in Santiago was updated. Sanitary engineering education advanced with a review of several specific aspects of the teaching programs and the conduct of a course on designing sanitary landfills.
9.104 The environmental health program to supply water to remote rural populations continued, manuals were prepared, and courses on water supply and excreta disposal developed. A seminar was held on the Metropolitan Area's environmental problems, and research took place on solid waste disposal. Manuals on food protection were updated.

Health promotion and disease control

9.105 The emphasis in maternal and child health was placed on training personnel, with courses and seminars in the following areas: child and family primary health care, applied nutrition and community development, anthropology in rural communities, and graduate level clinical and social pediatrics. The malnutrition prevention and control program included a seminar on nutritional surveillance. The supplementary food program continued. Rehabilitation efforts were channeled toward training personnel, especially in the prosthesis field.
9.106 Disease control showed progress as a result of activities of the Expanded Program on Immunization (EPI) and in the areas of diarrheal disease control, hospital infections, and typhoid fever. Positive results are also observed in the reduction of chronic diseases, where training actions were the subject of eight seminars on mental primary health care, diabetes, hypertension, epidemiology, and tuberculosis control. Research on the epidemiology of tuberculosis immunity, and the etiology of diarrhea were also considered important within the program. The mental health and alcoholism program was reviewed, and support was given to the cancer program.
9.107 The personnel of the Center for Oral Pathology were trained through fellowships, some of the Center's equipment was modernized, and a workshop on cancerous oral lesions was given.
9.108 The national laboratory system was strengthened through personnel training, and a regional seminar on laboratory services was held.

Cooperation Provided by PAHO/WHO

9.109 **Professional staff assigned to the country:** The PAHO/WHO Country Representative.
9.110 **Regional and intercountry advisers:** Three, in environmental health.
9.111 **Short-term consultants (STC):** Sixteen, in: information systems, primary care, sanitary engineering, environmental health education, food hygiene, nutrition, control of communicable diseases (typhoid, influenza), epidemiology of tuberculosis, mental health and alcoholism, dental pathology, and rehabilitation.
9.112 **Fellowships:** Seventy-eight, most of them in health services, human resources, environmental health, disease control, and clinical fields.
9.113 **Seminars and workshops:** Nine national seminars stressing health services, maternal and child health, and nutrition.
9.114 **Courses:** Eight national courses, especially in environmental health and rehabilitation.
9.115 **Cooperation from other agencies:** Kellogg Foundation, UNDP, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.116 Specific actions are identified, in the context of national priorities, that are consistent with the Regional Strategies and the PAHO Plan of Action. Within these

priorities the Government decided to channel PAHO/WHO technical cooperation into the development of human resources in health. This is being achieved through local seminars, workshops, courses, and fellowships in the areas of extension of health services, primary care strategy, education and training, basic sanitation, and disease control.

Colombia

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.117 Within the national health system's framework and objectives to consolidate and extend the network of service coverage, actions especially worth mentioning in the administrative development program are: analysis of the program's critical areas and training of health service management, administrative personnel, and local technical staff. Supervising and monitoring the primary care models applied at the local level in several regions, as part of the overall immunization and malaria programs, were also important activities. Among other significant activities are the training of a group of 40 health auxiliary workers in primary care, as well as the conduct of nursing workshops. The main efforts in the area of physical infrastructure were the preparation and analysis of an evaluation methodology and the training of five staff members in hospital design.

9.118 In the development of human resources, three workshops were held on self-instruction modules, supplying equipment and teaching materials to the continuing education program, and training educators and supervisors.

9.119 Cooperation in environmental health was channelled by the Government into four national priority areas: basic sanitation, pollution of Cartagena Bay, disposal of wastewater in Bogotá, and protecting water resources. The national basic sanitation program's main actions were: executing training courses on the design and evaluation of water treatment plants, workshops on garbage collection and on sanitary landfills, as well as monitoring water and air quality. The survey on controlling water losses resulted in the organization of 16 pilot agencies throughout the country. The study of the pollution of Cartagena Bay was completed; it identified environmental pollution aspects and presented alternate solutions. The technical evaluation of the wastewater treatment pilot plant in Bogotá proposed alternate solutions. Laboratory techniques and the operation of wastewater equipment were reviewed. The water resources protection program conducted an analysis of wastewater treatment alternatives in 21 municipalities of Sabana and formulated proposals for control.

Health promotion and disease control

9.120 The Expanded Program on Immunization (EPI) was broadened to include nine Departments, largely due to incorporating the community into its strategy. The operational problems of EPI in four Departments were studied, and adjustments were subsequently made to control standards and procedures, while intensifying personnel training, especially for the operational aspects of the cold chain. An operational and epidemiological evaluation was carried out to determine the coverage, efficiency, and impact of the antimalaria campaign. A study was made on transmission and control problems and socioeconomic factors affecting the campaign's progress. An international course on malaria for professionals was held. National and external extrabudgetary funds were obtained to intensify the campaign. Research continued on the ecology, biology, and control of *Aedes aegypti*, and the training of personnel was stepped up. A refresher course was given on the differential diagnosis of leishmaniasis.

9.121 A basic veterinary public health document was drafted for the campaign to eradicate foot-and-mouth disease, which will serve as the basis for negotiating external financing. The technical and legal aspects of producing and using the oil-adjuvant vaccine against foot-and-mouth disease were reviewed. Four workshops were held on foot-and-mouth disease, brucellosis, bovine

tuberculosis, and input control. A course on controlling the safety of seafood products was also given.

9.122 The Government added new research, training, production of biologicals, and drug function, to the National Institute of Health. The type of support that this Institute should provide to local health services laboratories was defined. A new oral rehydration salts plant was also created within the Institute.

9.123 The Government established the national health research policy. It also sponsored a workshop to identify priority research fields, and carried out research on congenital hypothyroidism, spastic paraparesis, and the quality of clinical laboratories.

Cooperation Provided by PAHO/WHO

9.124 **Professional staff assigned to the country:** Nine, including: the PAHO/WHO Country Representative who acts as the coordinating medical officer and advisers in health planning and administration, sanitary engineering (2), immunization, malaria, entomology, vector control, and veterinary medicine.

9.125 **Regional and intercountry advisers:** Twelve, in: nursing, hospital architecture, administrative methods, nursing education, drinking water pollution, water treatment plants, wastewater, nutrition, malaria, vector control (2), and entomology.

9.126 **Short-term consultants (STC):** Nineteen, in: health administration and planning, management, educational technology, treatment plant operation and maintenance, watershed pollution, wastewater (2), water control laboratories (2), sanitary engineering, EPI programming and supervision (2), epidemiology, leishmaniasis, chemical food analysis, production of oil-adjuvant vaccine for foot-and-mouth disease, seafood product control, rehydration salt production, and viral hepatitis.

9.127 **Fellowships:** Ninety-five, in health services, human resources, environmental health, nutrition, malaria, and other communicable diseases.

9.128 **Seminars and workshops:** Twenty, mostly in health administration, human resources, veterinary public health, laboratory services, and research.

9.129 **Courses:** Fifteen, in basic sanitation, *Aedes aegypti*, and veterinary public health.

9.130 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, ECO, and PANAFTOSA.

9.131 **Cooperation from other agencies:** IBRD, Government of the Netherlands, UNDP, and UNICEF.

General Appraisal and Future Trends

9.132 The national health policy is expressed in terms of health service equity to cover the population's needs. To achieve this, linkage among sector components making up the national health system is fundamental to facilitate programming and comprehensive development and to extend coverage. This policy includes the essential elements of the regional objective (Regional Strategies HFA-2000) to provide health services for the entire population with equity, effectiveness, and efficiency.

9.133 The Government, therefore, channeled its efforts and PAHO/WHO cooperation toward integrating and consolidating the system, as well as toward disease prevention and control and human resource development. The high priority awarded by authorities to the national basic sanitation program is worthy of special mention, due to the importance of the problems and the magnitude of national and external resources involved. Country/PAHO multidisciplinary groups examined national priorities in order to adjust cooperation with PAHO to their requirements. The Government's trend within these priorities is to concentrate PAHO/WHO cooperation selectively in critical areas, such as comprehensive programming of service coverage, training and development of human resources, strengthening the National Institute of Health, and establishing mechanisms to increase the availability of essential drugs, disease control, and basic sanitation.

Costa Rica

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.134 The national health service admininistration's objective was directed toward two well-defined areas: the administrative development of the Ministry of Health and administrative reform of the Costa Rican Social Security Fund. Both areas are within the technical cooperation agreement between PAHO, the Government of Costa Rica, and the Social Security Fund. Mention should be made of support in: the implementation, evaluation, and adjustment of current administrative models and systems; the design and execution of courses for training regional and local administrators of the programs to extend coverage; the progressive implementation of the revised information system; and the development of administrative and management control modules. The Costa Rican Social Security Fund was strengthened with support in both the purchasing and the financial-accounting areas.

9.135 The programs to extend coverage and provide primary care with community participation were strengthened by collaboration in formulating a proposal to restructure the health services. The analysis and readjustment of the process to regionalize health action functions by care levels were redefined; the programming, supervision, and control processes of the first and second care levels were consolidated; and the nursing care model was updated according to the primary health care approach. Finally, mention should be made of the materials prepared and printed about primary health care for health education activities and the evaluation of the community participation program.

9.136 Staff training was promoted to develop human resources in accordance with the primary care approach and the policy to coordinate prevention activities among the University, the Social Security Fund, and the Ministry of Health. Mention should be made of the workshop for the above institutions and the School of Nursing's education and service personnel, as well as the program to combine education and service, and the fellowships and courses for professional and auxiliary personnel in educational technology and health services admininistration.

9.137 Activities to improve environmental sanitation were promoted by defining 14 political-administrative strategies and preparing a plan of action to implement them. The most important are related to: preparing, developing, and evaluating the comprehensive rural sanitation program; promoting industrial hygiene training and water pollution safety and control; preparing, executing, and evaluating the program for controlling pollution of the soil as a result of solid waste and pesticide contamination; preparing, executing, and evaluating the food sanitation control program; organizing and developing administrative-technical aspects of the Division of Environmental Sanitation; developing activities for the International Drinking Water Supply and Sanitation Decade, as well as collaborating with the Water and Sanitation Institutions' Managers and Directors Meeting. Cooperation also took place with the Costa Rican Institute of Water Supply and Sewerage Systems (AyA), which gave priority to various training activities for its personnel.

Health promotion and disease control

9.138 The maternal and child health program included the following activities: a maternal care plan was structured based on risk criteria; perinatal clinical histories were implemented and followed-up; a workshop was held to analyze child care and information system standards; and a proposal was formulated for research, education, and assistance in maternal, child, and perinatal health at the primary level. Advisory services in nutrition were provided to design a sample and analyze nutrition surveys.

9.139 In oral health, mention should be made of the conduct of an interinstitutional workshop held to coordinate the Ministry of Health, Insurance Fund, and University activities; the design of a learning-while-working project for care and research in a

given geographical area; the evaluation of the information system; and the review of the program's manuals of procedures. The mental health actions taken emphasized integrating this area into the first- and second-level health services, as well as supporting the restructing and regionalization of the Social Security Fund's hospital services in mental health and psychiatry.

9.140 In disease control, the following actions are worth mentioning: training technical personnel for the malaria program; evaluating the *Aedes aegypti* surveillance program; preparing, tabulating, and analyzing a regional study on the health of the elderly. In zoonoses, activities included holding a national course on epidemiological surveillance, preparing a national census of livestock breeding, and implementing the epidemiological surveillance system in animal health.

Cooperation Provided by PAHO/WHO

9.141 **Professional staff assigned to the country:** Eight, including the PAHO/WHO Country Representative and advisers in human resources, sanitary engineering, education, nursing (2), communicable diseases, and administration.

9.142 **Regional and intercountry advisers:** Forty-four, in: comprehensive medical care, human resource development, environmental sanitation, infrastructure development and planning, and epidemiology.

9.143 **Short-term consultants (STC):** Eighteen, in various aspects of health administration, human resources, environmental sanitation, health statistics and information systems, and epidemiology.

9.144 **Fellowships:** Twenty-seven, in public health administration (7), environmental sanitation (5), medical care programs (7), communicable diseases (6), medical education and related sciences (1), and clinical medicine (1).

9.145 **Courses, seminars, and workshops:** Thirty-one, in health services admininistration, nursing, educational technology, environmental sanitation, medical records, primary care, women's participation in primary care and health, dental health, and continuing education.

9.146 **Technical cooperation from PAHO Centers:** CEPIS.

9.147 **Cooperation from other agencies:** USAID, IDB, IBRD, Kellogg Foundation, and UNICEF.

General Appraisal and Future Trends

9.148 The actions completed and promoted during 1983 emphasized development of the national health system, administrative development of the Ministry of Health, and administrative reform of the Costa Rican Social Security Fund. Mention should be made of the efforts to achieve coordinated program activities of the Ministry and the Social Security Fund in several aspects of medical care and of the emphasis on primary health care. PAHO/WHO played a significant role in coordinating the efforts of the National Government and international cooperation agencies in the identification of projects and financing sources.

9.149 Actions requiring PAHO/WHO technical and scientific cooperation are expected to continue in the near future in the defined priority areas. Developing the national health system is a priority for the country. The human resource development programs of the Ministry of Health, the University of Costa Rica, and the Costa Rican Social Security Fund will continue to have priority. The Environmental Sanitation Department is expected to be restructured in order to meet the country's needs and resolve highly complex problems and to promote and develop some necessary support services, such as the information system, laboratory services, legislation, operations research, and human resource development.

Cuba

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.150 The national objective is to increase material and strengthen human resources at

all levels of the national health system. Cooperation was directed toward technical, scientific, and administrative improvement of health service personnel and equipment, incorporating appropriate technologies and building and equipping new provincial, municipal, and rural units. In June 1983 the Ministry of Public Health initiated the reformulation of PAHO/WHO technical cooperation to strengthen the Ministry's capacity to utilize international technical cooperation. Actions proposed by the PAHO Regional Plan of Action and national health program planning activities were harmonized and supported by the administrative process of the Office of International Relations of the Ministry of Public Health and coordinated by the PAHO/WHO Country Representation.

9.151 In developing human resources, the country, in addition to fulfilling its own needs, took on the task of cooperating with several Third World countries in the provision of direct medical care and technical cooperation for the development of their health services. There was support in this area for: integrating in-service training into the human resource development program; the continuing education program; a study on utilizing human resources; training in supervision; and developing programs for educational supervision. Emphasis was also placed on training teaching staff in educational technology. Development of the pharmaceutical industry received significant support, stressing specialized training for the quality control of drugs and biologicals, and incorporating adequate techniques.

Health promotion and disease control

9.152 A program was carried out to contribute to the national objective of extending maternal and child health services and population dynamics activities. It covered operations research, statistical research methods, increasing and widening sex education activities, and providing information about fertility control services and their availability. Emphasis was also placed on designing and managing high-risk groups and prenatal medical care. Preferential attention was given to gerontology and geriatrics. Technical cooperation in this area contributed to formulating research projects, training professional personnel, and acquiring equipment and materials.

9.153 The support for disease prevention and control included the Expanded Program on Immunization, which marked improvements in the cold chain, thus ensuring higher quality vaccines for application in the country. Efforts were made to produce measles and meningococcidal vaccines locally; and to reduce the incidence of tuberculosis, mycosis, respiratory diseases, and sexually transmitted diseases. Epidemiological surveillance not only covers endemic diseases in the country, but also helps prevent the introduction of exotic diseases. The oral rehydration technique was introduced nationally to control enteric diseases. Preferential attention continues to be given to activities for vector control and *Aedes aegypti* eradication.

Cooperation Provided by PAHO/WHO

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

9.155 **Regional and intercountry advisers:** Seventy-four, in health systems development, coverage extension, health planning, human resources, epidemiology, preventive medicine, health administration, geriatrics and gerontology, and sex education.

9.156 **Short-term consultants (STC):** Forty-one, in research, human resources, medical education, health education, sex education, health statistics, family planning, bacterial diseases, ophthalmology, vector control, zoonoses, educational technology, and geriatrics.

9.157 **Fellowships:** Eighty-three, in public health administration (17), nursing (1), communicable diseases (24), medical education and related sciences (31), clinical medicine (3), and other health programs (7).

9.158 **Courses, seminars, and workshops:** Three, on developing health services, communicable disease control, and gerontology.

9.159 **Technical cooperation from PAHO Centers:** BIREME.

9.160 **Cooperation from other agencies:** UNDP, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.161 The national health system places high priority on developing and strengthening the community medicine model at the level of polyclinics, rural hospitals, and rural medical posts, which form the regionalized network of primary care services for all the population. The areas that required technical cooperation resources were staff education and training at all levels and programs and improving the utilization of the technical and scientific information system.

9.162 The undeniable advances achieved in health by the country led to a growing demand for technical cooperation by other developing countries. The National Health Service uses contingent medical and technical personnel to meet this need and receives fellows and visitors who acquire and exchange experience on the most appropriate models for universal coverage in primary health care.

9.163 The Government reviewed the service situation and defined priorities in regard to PAHO/WHO technical cooperation. This constituted the basis for national and PAHO/WHO multidisciplinary teams to identify priority areas for cooperation, which were then structured into 17 project proposals. The joint analyses contributed to strengthen the Country/PAHO cooperation program and to improve the utilization of resources.

Dominica

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.164 Significant progress was made in developing health services in the past year. A National Health Plan was prepared that included introducing organizational changes at the primary health care level and designing an information support system. The survey conducted on health service utilization proved useful to identify health development objectives. PAHO assisted in reviewing the nursing component of the Plan and continued to support the development of nursing services in the Princess Margaret Hospital by providing guidelines for a nursing audit, a patient classification system, and methodologies to determine nursing personnel categories and levels. Collaboration with the Government to develop human resources included fellowships funded by the European Economic Community, and by the Emmaüs Society of Switzerland for the water management project. Considerable interest was shown by the Government in the environmental health program areas of solid waste management and vector control. PAHO provided cooperation through fellowships and consultants in solid waste management.

Health promotion and disease control

9.165 Dominica continued to make progress in the maternal and child health program. PAHO provides ongoing administrative and technical support to the family health team, and also acts as the executing agency for the UNICEF project on providing selected services in rural health for children and for joint nutrition programs. The Organization is also the executing agency for the UNFPA-funded national maternal and child health and family life education program, and participates with CIDA and UNFPA in a family nurse practitioner program. The maternal and child health program has had a favorable impact in the country. Health education was extended to cover a broad range of health services, namely to educate the public in environmental health, nutrition, maternal and child health, and vector control. Progress was made in promoting health education in schools. The Organization collaborated fully in all aspects of this program—providing fellowships, preparing materials, supplying films, publications, and guidelines. Surveillance and control of communicable diseases continues to have a high priority. PAHO participated in the country's immunization program, and with

CAREC's assistance, Dominica developed and strengthened its surveillance and laboratory capabilities. Progress also took place in developing the leprosy control program. The Organization facilitated participation in a wide series of workshops that provided epidemiological training for epidemiologists and nurse tutors as well as practical training for laboratory technicians. The nutrition strategy continues to promote breastfeeding and provide guidance on feeding the weaning age group, on which subject the Organization collaborated in conducting a workshop. It also collaborated with the Government in implementing food production and marketing programs and in conducting an in-service course for agricultural extension officers. PAHO assisted in establishing and strengthening laboratory services by preparing laboratory manuals, setting up a referral system for histopathological specimens, and funding participation in subregional workshops on hematology and blood banks. PAHO's Disaster Preparedness Team located in Antigua supported the preparation of hospital disaster plans and participated in organizing the evaluation of disaster preparedness. The animal health and veterinary public health program reported no exotic diseases. The Organization collaborated by reinforcing zoonoses surveillance and by monitoring the development of the veterinary diagnostic laboratory.

Cooperation Provided by PAHO/WHO

9.166 **Professional staff assigned to the country:** Whereas there is no full-time professional staff assigned to Dominica, considerable cooperation comes from the Organization's staff located in various parts of the Caribbean, as well as from Headquarters, CAREC, and CFNI. Consultants in health systems development, manpower, disaster preparedness, disease control, environmental sanitation, nutrition, maternal and child health, veterinary public medicine, and vector control were provided in order to collaborate with the Government in its efforts.

9.167 **Fellowships:** Thirteen, in public health administration, other subfields of health organization, environmental sanitation, nursing education, public health nursing, nursing services (2), mental health (2), health statistics, communicable diseases, medical education and related sciences, and clinical medicine. Assistance was also provided to send several health professionals to seminars, meetings, and workshops in neighboring Caribbean countries.

9.168 **Technical cooperation from PAHO Centers:** CAREC and CFNI provided extensive cooperation during the year.

General Appraisal and Future Trends

9.169 The activities and collaboration provided by PAHO for the Dominica program benefited the country. Unfortunately, the delivery of cooperation in environmental health was not carried out as completely as planned. Subregional or intercountry activities in pesticide management, environmental impact assessment, project design and management were not provided due to difficulties in the availability of PAHO resources to carry them out. The Government developed a clear understanding of its objectives and priorities and is fully committed to primary health care. The Organization's cooperation is anticipated to continue along the same lines as in previous years and is hoped to prove even more effective.

Dominican Republic

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.170 Activities focused on institutional strengthening and improving general administrative services, especially personnel, financing, accounting systems, and developing the purchasing system for the health services. This effort included developing methods to set policies and implement the National Plan of Action. National and regional workshops were

carried out and a baseline drawn for the Plan's monitoring and evaluation system. Support for planning activities included the process of sectoral collaboration between the State Ministry of Public Health and Social Welfare (SESPAS) and the Dominican Institute of Social Security. The bases were defined for regionalization and reorganization of the medical records and health statistics departments. The actions mentioned above are part of a broad process expressed in the 1983-1986 health policy for the country. Work continued to expand health service coverage, through constructing and equipping 125 rural clinics, 17 health subcenters, and 2 polyclinics with external resources. A study was undertaken to evaluate rural health service coverage and a meeting was called to exchange real primary health care experiences. Three components to improve health services structure and operation were identified: medical care, strengthening the installed capacity, and training. A study on medical care was undertaken to define service care levels and to learn the areas of influence, especially in Santo Domingo hospitals. Five new establishments were put into operation to strengthen installed capacity. The project to exchange valid experiences at the hospital level was carried out through seven hospital workshops for training purposes. Analysis of the integrated information system structure and functions was supported to implement the use of hospital forms and assistance was given to reorganize the medical records and statistics departments.

9.171 Activities to develop human resources include a study on the health resources in service and a seminar-workshop to define health manpower needs according to the country's priorities. The process for training health manpower in educational centers is of special interest, hence, a working group was organized to analyze teaching medicine within the context of achieving the goal of health for all. SESPAS/ Universities collaborated in moving toward initiating the regionalized teaching-assistance integration process. External financing funded the conclusion of the first stage of the continuing education project and assisted in training 16 fellowship recipients from the Bureau of Human Resources and Universities.

9.172 Environmental sanitation activities focused on formulating and developing a national plan to adapt to, as well as creating a National Action Committee for the International Drinking Water Supply and Sanitation Decade (IDWSSD). PAHO/ WHO will act as executing agency for a project that is to contribute to the institutional development of the National Drinking Water and Sewerage Institute (INAPA), financed by the Inter-American Development Bank (IDB). Fluoridation of water supply systems in Francisco de Macorís, Baní, continued and other areas were incorporated, possibly including Santiago. A course on fluoridation was held for engineers working with water institutions, SESPAS, and the Universities. A project on sewage treatment with aquatic plants is also being developed, and the organization of a solid waste management program is being undertaken for Santo Domingo. Water supply and sewerage for Santo Domingo is an ongoing project designed to increase coverage and improve the service quality for the city. This same type of study is also being done in Santiago.

Health promotion and disease control

9.173 The maternal and child care program was reviewed and the corresponding Division restructured. The development of maternal and child health services continue in Santiago and Santo Domingo's periurban areas. A demonstration area was selected to expand nursing services coverage and improve the quality of this care, which includes developing standard nursing procedures and supervision guidelines for health centers.

9.174 A national nutrition program was formulated in accordance with the defined policy. The psychiatric epidemiology and occupational therapy program was considered an outstanding activity in the mental health area. A project to extend dental services to rural and marginal urban areas is being prepared to integrate service and education. Training oral health personnel deserves special mention: the efforts included a seminar on dental

epidemiological research, training in simplified technology, care for the school-age population, and training in pediatric dentistry.

9.175 In disease control, special attention was given to: developing the epidemiological surveillance system; providing an adequate, regular supply of biologicals, and other critical materials for the Expanded Program on Immunization (EPI); strengthening joint leprosy and tuberculosis programs; conducting research on several parasitic diseases; and carrying out several activities for controlling diarrheal diseases. A review of the EPI resulted in planning the operational program for 1984; vaccination standards were also reviewed at various service levels.

9.176 Activities to strengthen the national malaria program included several proposals to negotiate financing; follow-up and evaluation of the program's implementation at various stages; reformulation of the epidemiological surveillance system; assistance to develop an entomology course; and conduct of a meeting to evaluate the recommendations made at the second working meeting of the Haitian and Dominican Republic's malaria programs. Assistance for zoonoses control involved formulating, executing, and evaluating programs, and supporting intersectoral communication between the Ministries of Health and Agriculture, as well as integrating veterinary public health actions into primary health care. Continued cooperation took place with the Zoonosis and Animal Health Research Institute in seeking external financing sources to operate properly.

Cooperation Provided by PAHO/WHO

9.177 **Professional staff assigned to the country:** Four, including: the PAHO/WHO Country Representative who serves as the coordinating medical officer and advisers in public health administration, sanitary engineering, and oral health.

9.178 **Regional and intercountry advisers:** Sixty-two, in health administration, planning, rural health, maternal and child health, control and eradication of malaria, and vector control.

9.179 **Short-term consultants (STC):** Forty-four, in human resource development, maternal and child health, oral health, public health administration, planning, malaria, veterinary public health, laboratory services, and rural health.

9.180 **Fellowships:** Eighty-three, in public health administration (28), environmental sanitation (11), nursing (1), other health programs (14), communicable diseases (15), and medical education (14).

9.181 **Courses, seminars, and workshops:** Fifteen, in public health administration and planning, human resource development, environmental sanitation, maternal and child health, oral health, malaria control, and veterinary public health.

9.182 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, CLAP, ECO, and PANAFTOSA.

9.183 **Cooperation from other agencies:** USAID, IDB, CIDA, UNDP, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.184 PAHO/WHO cooperation focused on supporting the formulation of the document "1983–1986 Health Policy for the Dominican Republic," inspired by and geared to the Strategies of Health for All by the Year 2000 and its Plan of Action. Highest priority is assigned to comprehensive health services for the population not currently protected or with difficult access to health services—i.e., rural and marginal urban populations. The emphasis is on disease prevention, environmental sanitation, and extending health service coverage. Special emphasis is placed on intersectoral coordination to promote maximum utilization of the resources available in the country and those obtained from external financing sources. Other priority areas for the Government are health education and community participation, which should be developed together and at the same time as human resources are developed for the health services. Programming along these lines will help to further develop national capacity to deal with priority health problems.

Ecuador

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.185 The process of developing the health service system and extending coverage to the entire population reported important actions in functional regionalization, institutional development, and extension of both the infrastructure and comprehensive care by levels. Outstanding among these activities was the definition of program coverage areas; organizational and functional planning of the regional health system; programming the supervision system; implementing care models for marginal urban and rural populations using the primary care strategy and intra- and intersectoral cooperation. The preparation and use of administrative manuals on budget, costs, internal control and supplies, and training courses in personnel management and financial administration constitute important steps in administrative development. The national construction and equipment policy was consolidated and the building of health centers and units continued; health installation maintenance standards were also drawn up and disseminated. Provincial and local programming of comprehensive health activities was carried out through national seminars on updating priority program standards and coordinating them in the following areas: maternal and child health, immunization (EPI), supplementary feeding, diarrheal disease control, acute respiratory infections, and tuberculosis. Adjusting and implementing the nursing staff's functions at the local level was also given importance.

9.186 The review and adaptation of the curricula of the Schools of Nursing and Dentistry and strengthening the Center for Educational Technology were considered important actions in human resource development. Mention should also be made of instructor training at the Nursing School in Chimborazo, evaluating the hospital administration course, and training auxiliary staff, which incorporated traditional medicine. The continuing education program was reformulated by the National Institute of Training according to local health activities requirements.

9.187 The environmental health program for institutional development of the Ecuadorian Institute of Sanitary Works (IEOS) was reformulated and a seminar was organized for the managerial personnel. A plan was formulated to develop a water and sanitation information system. Personnel were also trained through one course on solid wastes (Guayaquil) and another on sanitation problems in the wake of disasters (Quito).

Health promotion and disease control

9.188 Developing compatibility between the maternal and child health component and the dietary assistance program in overall local-level health programs, together with adjusting of standards of care by levels of complexity, are major steps toward pooling community-level resources. Applying the maternal nutrition code and designing breastfeeding research in the coastal and the plains areas were considered important.

9.189 The EPI was evaluated in the 20 provinces where it operates, and as a result, supervision was adjusted, the cold chain was re-equipped, and three training seminars held for field staff. The diarrheal disease control program was implemented in 17 provinces and its activities will be incorporated into the primary care model. Oral rehydration services were organized in 20 provinces. Whereas progress has been slow in the campaign against malaria, important susceptibility studies of the vector and the parasite were carried out. Other outstanding activities were: conduct of a Chagas' disease survey, review of plague strategies, and training in leprosy diagnosis.

9.190 An important veterinary public health study on regional ecosystems contributed to refining the foot-and-mouth disease vaccination strategies. Importance was also placed on developing procedures and acquiring equipment for cell cultures to allow for future viral vaccine production. Rabies control activities advanced toward producing a vaccine, developing the information system, and training personnel to diagnose this disease.

Cooperation Provided by PAHO/WHO

9.191 **Professional staff assigned to the country:** Eleven, including the PAHO/WHO Country Representative and advisers in planning, health administration, epidemiology, nursing, sanitary engineering, immunization, administrative methods, malaria (2), and veterinary medicine.
9.192 **Regional and intercountry advisers:** Sixteen, in nursing, nursing education, medical education, health education, primary care, financial analysis, hospital administration, health administration, institutional development, water laboratories, maternal and child health, nutrition, diagnosis of Chagas' disease, health statistics, parasitology, and virology.
9.193 **Short-term consultants (STC):** Fourteen, in social anthropology, cost control, financing, human resources (2), educational technology (2), maintenance engineering, personnel management, dental education, hospital administration, information systems, and viral vaccines (2).
9.194 **Fellowships:** Fifty-one, in health services, human resources, disease prevention, and environmental health.
9.195 **Seminars and workshops:** Eleven, mostly in disease prevention and environmental health.
9.196 **Courses:** Fourteen, on aspects of disease prevention, environmental health, and veterinary medicine.
9.197 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, and PANAFTOSA.
9.198 **Cooperation from other agencies:** IDB, IBRD, CIDA, FAO, Kellogg Foundation, Government of Switzerland, UNDP, and UNICEF.

General Appraisal and Future Trends

9.199 Improving the health services, strengthening programs, and developing operational capacity of institutions to provide comprehensive health care effectively, efficiently, and equitably for the entire population is the main priority of the national health authorities and coincides with the Regional Strategies. Within this framework the following areas are stressed: consolidating and extending the system, developing human resources, controlling diseases, and continuing efforts in environmental sanitation. PAHO/WHO cooperation was oriented toward specific aspects of these areas. The program to develop health services and strengthen institutions, with external financing from the IDB, is a positive element in promoting and supporting consolidation and extension of the system. Research on factors conditioning service accessibility and utilization by communities in both rural and marginal urban areas will surely lead to formulating alternate strategies, based on social, cultural, and economic characteristics of the population covered. PAHO/WHO cooperation is not expected to undergo radical changes, but the development of services and greater knowledge of the population's needs and attitudes are expected to result in the introduction of adjustments in specific areas.

El Salvador

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.200 Several actions were carried out to support the development of health programs by cooperating in the planning and organization of hospitals, health centers, and posts; preparing organizational manuals for hospitals and health centers; organizing the logistics and management system; and organizing the maintenance system of buildings, installations, and medical equipment.
9.201 Despite sociopolitical and economic difficulties, some progress was made through activities relating to the development, improvement, and operation of planning, administration, and information systems, according to the objectives and strategies of the administrative development program. The program's reorientation in light of the primary health care approach has become the

fundamental objective of the Ministry of Health and Social Welfare. Administrative adjustments were made at the national level and activities were undertaken to train personnel in order to strengthen and develop the Ministry's technical and administrative capability.

9.202 One example of the programming and development of medical care establishments can be found in the actions carried out for the Aguachapán hospital. This project included programming services, designing and preparing plans and buildings for the special installations, supplying general equipment, and organizing the physical plant. Hospital maintenance received special attention, and efforts concentrated on logistical management, operating and maintaining medical equipment, installation of basic equipment, building maintenance, and human resource development. The National Health Information System was reviewed, updated, and reoriented in order to integrate it into the planning and administration processes. A proposal was formulated to organize a National Blood Transfusion Center and strengthen hemotherapy services.

9.203 Collaboration in human resource development included reviewing the curricula of three nursing schools, especially that of San Miguel; training nursing school staff; training people for the maintenance programs; two seminars on the strategies and goals of health for all by the year 2000, and a workshop on the strategies and plan of action for managerial and senior staff. Several courses on health statistics, medical records, and epidemiology were held. Support was provided for studies on blood banks and pathological anatomy services in the country's hospitals.

9.204 The environmental health program included reviewing and implementing the sanitation program in coordination with the Ministry of Public Health's Environmental Sanitation Division; a course was held for sanitation inspectors, and advisory services were provided to prepare the food control program. PAHO participated in the formulation of a solid waste disposal program and in a course on sanitary landfills. Collaboration was provided in extending drinking water supply systems. Advisory service was provided to the National Drinking Water and Sanitation Committee (CONIAPOS) to develop activities in regard to the International Drinking Water Supply and Sanitation Decade (IDWSSD).

Health promotion and disease control

9.205 Family planning has been integrated into all the services of the health sector. Due to scarce human resources, some maternal and child health care functions have been delegated to paraprofessionals—mainly nurses, rural health aides, and lay midwives trained to work in rural areas. Collaboration in dental health was directed at improving the dentistry program by expanding rural coverage and updating periodontal treatment techniques for pregnant women. Collaboration in epidemiology was provided to modernize the programs, structure the noncommunicable disease epidemiological surveillance program, hold the second national epidemiological surveillance course, and strengthen the national system of epidemiological surveillance.

9.206 Support of the malaria program was directed toward improving operational techniques, studies, and field investigations on disease control methods, and evaluating the results of the measures applied. The Division of Malariology of the Ministry of Public Health was given assistance in analyzing an *Aedes aegypti* survey. In support of the veterinary public health program, efforts focused on preparing the emergency plan for animal health and coordinating activities with the Ministry of Agriculture.

Cooperation Provided by PAHO/WHO

9.207 **Professional staff assigned to the country:** Five professionals, including the PAHO/WHO Country Representative and advisers in epidemiology, environmental sanitation, health services development, and malaria.

9.208 **Regional and intercountry advisers:** Thirty-four, in health administration, human resources, nursing, equipment maintenance, information and health statistics, research, epidemiology, maternal and child health, zoonoses, oral

health, malaria, mental health, disaster preparedness, and nutrition.

9.209 **Short-term consultants (STC):** Twenty-six, in administration, planning, sanitary engineering, health statistics, nursing education, maintenance, research, family planning, primary care, epidemiology, and laboratory services.

9.210 **Fellowships:** Thirty-one, in public health administration (12), environmental sanitation (4), nursing (2), other health programs (4), communicable diseases (7), and medical education (2).

9.211 **Courses, seminars, and workshops:** Thirty-five, in administration, human resource development, nursing, maintenance, health statistics, educational research, manpower planning, epidemiology, immunization, epidemiological surveillance, environmental sanitation, food hygiene technology, dental health, utilization of insecticides, community education and participation, and disaster preparedness.

9.212 **Technical cooperation from PAHO Centers:** CEPIS, CLAP, CLATES, INCAP, and PASCCAP.

9.213 **Cooperation from other agencies:** USAID, IDB, CDC, UNDP, UNFPA, UNICEF, and the Knights of Malta.

General Appraisal and Future Trends

9.214 Activities at the country level with PAHO/WHO cooperation targeted prevention and control of diarrheal diseases, infectious and parasitic diseases, malaria, acute respiratory infections, and tuberculosis and concentrated on meeting the urgent need to extend coverage to those populations unprotected by the existing service network. The other two priority areas were environmental sanitation and human resource development.

9.215 Despite existing sociopolitical conditions, the primary care strategy is promoted by the Ministry of Public Health and Social Welfare's highest policy- and decision-making levels, which are committed to more aggressively conducting coordinated actions so that health services can be extended to the entire community. In addition to support provided by PAHO/WHO, international and bilateral cooperation agencies are contributing external resources to meet the country's needs.

9.216 Reorienting the programs with a primary health care context, as a means of achieving health for all, constitutes the fundamental goal of the work of the Ministry of Public Health and Social Welfare. Administrative adjustments at the national level are underway in the forms of training staff and improving planning processes to strengthen and develop the technical and administrative capacity. This approach will determine changes in the Government's need for technical cooperation with PAHO/WHO and other agencies.

Grenada

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.217 The Government assigned high priority to defining objectives to develop the health sector. A health plan was completed and numerous training seminars were organized for district health staff. The national health manpower development program for nursing education was developed with Government support to strengthen the basic, postbasic, and continuing nursing education. The program's main focus is on designing a curriculum for the School of Nursing and conducting a survey of training needs for nursing instructors. The standards for nursing education were discussed and accepted by the Ministry of Health. The Organization collaborated in environmental health with activities in environmental health surveillance, vector control, and development of a new solid waste management program.

Health promotion and disease control

9.218 The maternal and child health program was supported by the Organization in arrangements made for the supply of oral rehydration salts and in sponsorship of several participants' attendance at meetings outside the country. Strategies in nutrition

continued to develop breastfeeding and feeding of the weaning age group. Over the past decade, the Government has placed high priority on health education. Epidemiological surveillance and communicable disease control likewise continue to be important national priorities. Grenada participates in the immunization program and, with CAREC's assistance, is developing and strengthening its surveillance of laboratory capabilities.

9.219 The *Aedes aegypti* campaign efforts were successful, as indicated by the low index reported. Hiring vector control personnel to carry out this program on the island of Cariacou was a very positive measure. The regional laboratory services project is progressing satisfactorily; it includes organizational development of laboratory services and preparation of laboratory manuals. A referral system for histopathological specimens was set up; Grenada participated in a subregional workshop on hematology and a regional one on blood banking. The Grenada laboratory was assisted in the development of the Histology Department. Efforts in animal health include the vaccination of dogs and cats against rabies. Emphasis continues to be focused on zoonoses surveillance and improving rabies diagnostic capability. National personnel attended a subregional seminar on community participation in animal health and veterinary public health programs in the Caribbean.

Cooperation Provided by PAHO/WHO

9.220 **Professional staff assigned to the country:** Whereas no full-time professional staff is assigned to Grenada, considerable cooperation comes from the Organization's Headquarters staff located in various parts of the Caribbean, as well as from CAREC and CFNI. Consultants in health systems development, manpower 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.

9.221 **Fellowships:** Six, in public health administration, a subfield of health organization, sanitary inspection, health education (2), and communicable disease control.

9.222 **Technical cooperation from PAHO Centers:** Both CAREC and CFNI provided extensive cooperation during the year.

General Appraisal and Future Trends

9.223 During the past year, Grenada's health sector underwent the same difficulties that all the other sectors experienced due to the political situation. Collaboration continued, however, in so far as possible, and most of the program activities were carried out. It is anticipated that the Organization's program will continue essentially along the same lines as it has in the past, since the new Government expressed its concurrence and interest in the primary health care strategy as it has been applied to date.

Guatemala

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.224 PAHO technical cooperation was channelled in two directions: the first supported and strengthened centralized institutional development of the health system; and the second targeted a cooperative process applied in health areas at the operational level. Strengthening the health infrastructure included a broad range of actions: programming, information systems, human resources, management systems, monitoring, evaluation, and supervision. The second group included support for feasibility studies and implementing a primary health care operational model. The Government initiated the process in the Department of Escuintla, and in view of its positive results, decided to apply it throughout the country. The first stage of this process included EPI and oral rehydration programs, using appropriate technologies and stimulating the effective participation of the community. In

an effort to disseminate the National Health Plan 1982–1986, the Organization collaborated in holding a central workshop and 24 operational-level workshops in various parts of the country, with a total of 280 people participating. Emphasis was also placed on developing and strengthening the health system's planning, programming, and evaluation processes in order to apply the policy aimed at extension of service coverage and to improve the quality of care. Another area that received preferential attention was developing a model to evaluate and monitor the health service system by care levels. Analyzing and redefining the legal and functional structure of the primary health care operational model was considered an important activity, as was the financing of 25 workshops for central-level and senior area health personnel, to transmit the implementation of administrative reforms. Collaboration was provided to implement the technical auditing system, develop the central engineering and maintenance division, and develop Totonicapán's Regional Maintenance Center. Support was provided to develop the staff training program, install and maintain equipment, and implement the maintenance service management course and 14 in-service training courses for technical personnel.

9.225 Human resource development workshops were carried out at different levels, especially at the highest governmental level, to disseminate the Plan of Action and promote intersectoral cooperation. The Ministry of Health, the Guatemalan Social Security Institute, and other institutions were supported to educate and train supervisory personnel. Collaboration in health education and community participation was given to the Social Security Institute to develop the educational aspects of its preventive medicine program.

9.226 In environmental health, PAHO actively promoted and cooperated in formulating the National Plan for the International Drinking Water Supply and Sanitation Decade. This included workshops on operating and maintaining rural water supply systems for 30 professionals from the Executing Unit of the Rural Acqueducts Program (UNEPAR), supervision, integration of UNEPAR programs with health areas, and the sanitation component of the Escuintla operational model. Cooperation was offered to formulate the basis for the program to improve Guatemala City's public sanitation service; provide advisory services on market sanitation and design of sanitary landfills; and acquire appropriate equipment. A proposal was formulated for a program to control water pollution in the country. The Municipality of Guatemala was assisted in the formulation of a proposal to study the restoration and management of Lake Amatitlán and in the conduct of research on the pollution with arsenic of the Paz River.

Health promotion and disease control

9.227 Actions in this field aimed at strengthening the maternal and child health program by executing operational plans and mechanisms for inter- and intrasectoral coordination. Mention should be made of the collaboration in reorganizing maternal and child health care and family planning services at the operational level. Another significant achievement was training technical and auxiliary personnel.

9.228 Disease control support was provided through participating in programming a national epidemiological surveillance system and implementing it in six health areas, implementing surveillance guidelines for diseases that require epidemiological surveillance, designing the epidemiological surveillance curriculum, and providing training support. The immunization program was supported in the form of programming and implementing evaluation of the EPI and carrying out a national study on the cold chain infrastructure. Parasitic disease and diarrheal disease control were the subjects of other activities.

9.229 In malaria, the Organization participated in studies on *Plasmodium* behavior in the presence of antimalaria medication, in updates of the epidemiological stratification studies in affected areas, and in efforts to distribute antimalaria medication run by voluntary collaborators on the Pacific coast. Zoonoses received impetus when the Department of Zoonoses was restructured in coordination with the Ministry of Agriculture.

9.230 Development of the epidemiological surveillance systems and the conduct of a workshop on disasters were two important activities carried out by the disaster preparedness program.

Cooperation Provided by PAHO/WHO

9.231 **Professional staff assigned to the country:** Thirteen, including the PAHO/WHO Country Representative and advisers in public health administration, nursing (2), sanitary engineering, laboratory services (2), maternal and child health, veterinary medicine, epidemiology, hospital administration, medical records, and vector control.

9.232 **Regional and intercountry advisers:** Sixty-seven, in epidemiology, maternal and child health, health services administration and planning, environmental sanitation, nutrition, and hospital administration.

9.233 **Short-term consultants (STC):** Fifty-four, in health service administration, maintenance, information systems, sanitary engineering, epidemiology, health education, maternal and child health, and systems analysis.

9.234 **Fellowships:** Ninety-nine, in public health administration and hospital administration (44), environmental health (18), medical education and related sciences (12), communicable diseases (10), medical care programs (8), nursing (6), and maternal and child health (1).

9.235 **Courses, seminars, and workshops:** Thirty-seven, in environmental health, public health and hospital administration, maternal and child health, and epidemiology.

9.236 **Technical cooperation from PAHO Centers:** CEPIS, ECO, and INCAP.

9.237 **Cooperation from other agencies:** USAID, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.238 Despite political changes during the year, a 20% reduction in funds assigned to public institutions, and institutional reorganization, the Organization assisted in launching effective intra- and intersectoral coordination, by extending its support to institutions outside the Ministry of Health. Cooperation was directed at supporting and strengthening the central level of the health system's infrastructure and at implementing the cooperation process at the operational level. The following priority areas were established: provision of advisory services for the applied level, application of an operational primary health care model; strengthening of the health service infrastructure; support to environmental health; and intensification of assistance to the maternal and child health program. The new primary health care operational model is an expression of the Government's interest in supporting actions directed toward environmental sanitation, maternal and child health care, infrastructure development, health service coverage extension, and human resource development.

Guyana

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.239 The recently completed Guyana/IDB/PAHO project to develop health services resulted in a proposal to completely reorganize the Ministry of Health and the creation of a planning, programming, monitoring, and evaluation unit within the Ministry of Health. The Government began to implement this reorganization and set up the necessary infrastructure. The entire system for delivery of health services is now geared to the primary health care approach. In light of the Ministry's new policy, the plan to develop human resources was revised to provide staff members with the skills required for their changing roles. The Government undertook a review of the manpower situation, both in terms of productivity and utilization. The tendency is now to take the Ministry of Health out of manpower training and concentrate most of that effort at the Faculty of Health Sciences of the University of Guyana, for which the University and the Government revised curricula and estimated the needs for various

personnel categories in the Ministry of Health. A major change was made in the national environmental health program. The Ministry of Environment was closed and its functions assigned to the Ministry of Health and Public Welfare. The Guyana Water Authority was established as a corporation with budgetary and administrative ties to the Ministry. Other environmental health programs are now directly under the Ministry except for Occupational Safety and Health, which is under the Ministry of Labor. High priority was placed on developing project proposals for funding by the Organization of Petroleum Exporting Countries (OPEC) and IDB in community water supply.

Health promotion and disease control

9.240 The national dental health program targeted laying the foundation for a medium-term plan of action (1982–1992). Preventive dental care services were provided in the Georgetown area. An oral health survey of schoolchildren in 10 regions of the country was completed, and preventive dental health education at schools was maintained. The malaria control program experienced severe financial constraints. As a result, malaria incidence increased in nearly all hinterland areas. The Government, realizing the importance of food production, continued the veterinary public health services, and the Ministry of Agriculture placed special emphasis on developing the livestock industry. Steps were taken toward the goal of developing improved technology to strengthen animal health. The major achievement of the year was to complete and put into operation a well-equipped and effective Veterinary Diagnostic Laboratory and to train national professional and technical staff in all fields related to its operation. This laboratory, now fully operational, provides diagnostic services for epidemiological surveys, epidemiological surveillance, immunization, and strengthening of the diagnostic capability of animal diseases in the country; its leptospirosis work was singled out as excellent.

Cooperation Provided by PAHO/WHO

9.241 **Professional staff assigned to the country:** The PAHO/WHO Country Representative and advisers in malaria, dental health, sanitary engineering, and pathology.

9.242 **Regional and intercountry advisers:** Collaboration was provided in epidemiology and disease prevention from other PAHO units.

9.243 **Short-term consultants (STC):** Short-term consultants in environmental health and human resource development were provided during the year.

9.244 **Fellowships:** Fourteen, in public health organization (2), public health subfields (2), sanitary inspection (1), environmental health (3), health services development (2), laboratory services (1), and medical education and related sciences (3).

9.245 **Courses and seminars:** Several courses in statistics, epidemiology, dental health, and veterinary laboratories were held.

9.246 **Technical cooperation from PAHO Centers:** CAREC and CFNI provided services.

General Appraisal and Future Trends

9.247 The major health service reorganization, following completion of the Government/IDB/PAHO project, has overwhelming implications for the future of health programs. Every effort should be made to use this reorganization as an entry point for developing programs in the years to come. Since the project is all-encompassing, the development of any new program can be carried out using the primary health care approach. The Government is striving to deliver easily accessible health services to the entire population. The challenge to make resources available as effectively as possible is considerable due to the serious financial constraints facing the Government.

Haiti

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.248 Two major policy documents outlining national health priorities were developed and published in 1983. The "New Orientation in Health Policy" and "Strategy and Priority Projects in Health" describe the Ministry of Public Health and Population's new focus. The Government's priorities in the coming years are diarrheal disease control, immunization, maternal and child health, tuberculosis control, nutrition, and malaria. The Ministry of Public Health and Population completed a regionalization process adding the West and Transverse regions to the already existing North and South regions. The Government is now addressing general administrative problems such as logistics, information systems, and personnel management, which resulted from the recent regionalization of the health services. The rural health development project supported by USAID showed some progress. Great emphasis was placed on improving the financial management system, logistics, and community outreach services, through a training program for 450 health agents. A community pharmacy system (75 pharmacies included to date) was created to provide essential drugs more economically and is served by an autonomous distribution unit. Community medical officers were appointed to half of the 150 "communes" (districts) in the country. The Ministry of Public Health and Population established a Division of Health Education and Training for human resource development, which has already made major efforts to improve coordination and develop educational programs. The Government made special efforts in environmental health to improve the functioning of the drinking water supply agency for the metropolitan area (CAMEP) and for operating the drinking water quality control laboratory. An international workshop on community participation in drinking water supply and sanitation was organized with representatives from 10 French-speaking African countries participating. The Government also began to implement a drinking water sector plan for rural areas and pilot drinking water supply projects in the poorer sections of the capital.

Health promotion and disease control

9.249 Maternal and child health and family planning is one of six national priority programs. Due to organizational changes, progress in terms of risk population coverage was relatively modest compared to expectations. Nutrition is also one of the six national health priorities identified. The major operational objectives were to establish community-based rally posts run by health agents to provide regular child growth monitoring as part of the primary care package. A noteworthy innovation in the nutrition program was creating a unit for community and multisectoral intervention that will provide established community groups with expertise and material for nutrition projects. Other important organizational changes were decentralizing the technical supervision of delivery services to regional nutrition supervisors and merging the Nutrition Division with the Bureau of Family Health.

9.250 The proposed reorganization of the epidemiological surveillance unit was established and clear guidelines set to develop activities within general health services. Major efforts in planning, launching, and developing the monitoring and evaluation mechanisms to finance diarrheal disease control activities were undertaken. The malaria control program continued to provide routine intradomiciliary spraying. An operational study was undertaken to determine whether phenitrothion could be used effectively to control malaria in the country. A high-level meeting between the Ministry of Public Health and Population of Haiti and that of the Dominican Republic was of great importance to control malaria in all Hispaniola. This included joint efforts to elicit international funding for that end.

Cooperation Provided by PAHO/WHO

9.251 **Professional staff assigned to the country:** Two medical officers, one serving as the PAHO/WHO Country Representative, a nurse administrator, an epidemiologist, a sanitary engineer, and a sanitarian. The malaria eradication program also received assistance from an epidemiologist, an entomologist, and three sanitarians.

9.252 **Regional and intercountry advisers:** Technical assistance from other PAHO units was provided in epidemiology, tuberculosis control, and veterinary public health.

9.253 **Short-term consultants (STC):** Short-term consultants were provided in water supply, laboratory services, diarrheal disease control, epidemiological surveillance, disaster preparedness, and veterinary public health.

9.254 **Fellowships:** Twenty-five, in public health administration (9), other areas of health organization (4), specialized sanitation fields (2), health services (1), mental health (1), occupational health (1), health statistics (1), veterinary public health (3), communicable disease control (2), and medical education and related sciences (1).

General Appraisal and Future Trends

9.255 The Public Health Secretariat has amply trained and dedicated leadership. The Government made the commitment to proceed with a well-planned approach to achieve health for all by the year 2000. This includes a thoroughly defined plan of action and definite goals. Major initiatives stated in the two aforementioned policy documents place priority on disease control, regionalization, rural health care delivery, community pharmacies—areas in which efforts are already underway. These plans, nevertheless, face serious constraints in regard to the health system's operational capacity, especially in providing health care services. Haiti receives considerable external resources from many bilateral and multilateral agencies. The Government and PAHO face the challenge of articulating those resources as part of a program that can meet the population's needs.

Honduras

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.256 The national health policy was transformed into the National Health Plan and the Strategy of Action through 1986. The main objectives are to reorganize the sector; develop and strengthen the planning, programming, and evaluation processes in the health system; and develop and strengthen the administrative processes to achieve effective decentralization. Support for planning processes was given to the Higher Council on Economic Planning (CONSUPLANE), specifically to prepare the health sector's Annual Work Plan for 1984. Extending coverage to marginal urban areas has high priority. A programming methodology is being applied that was adapted from the one used for local programming in rural areas. By applying this methodology the metropolitan health region will be structured into a system of different levels of complexity. This will allow activities directed at family groups within the community to be carried out with the aim of providing them comprehensive care. The primary health care goals in marginal rural areas were surpassed, bringing about a total renovation of the Rural Health Centers without Physicians (CESARES), including the supply of new equipment. Supplying equipment for the Health Centers with Physicians (CESAMOS) was to be completed early in 1984, since the equipment was ready to be distributed to 26 of those Centers. The Ministry of Health and the Honduran Social Security Institute signed an agreement to promote the coordination of their respective actions to extend health service coverage. Cooperation was provided to review and adjust hospital services and local programming mechanisms and to examine the formulation of planning standards and procedures. Indicators were developed to monitor and evaluate several programs at

different levels. At the same time, several adjustments were made in the information system and in personnel and budget management areas, among others.

9.257 The development of human resources received high priority, especially in education and training programs for mid-level technical and auxiliary health personnel. The Community Health Training Program for Central America and Panama (PASCCAP) provided substantial assistance in that regard, especially in the development of educational modules and instructional materials. The Textbook Program expanded to include all the teaching nuclei in health sciences and engineering.

9.258 In the environmental health area, the National Drinking Water and Sanitation Plan for the International Drinking Water Supply and Sanitation Decade was completed. PAHO/WHO cooperation was directed at coordinating activities among the Ministry of Health, National Autonomous Water and Sewerage Service (SANAA), and CONSUPLANE; studying community participation; training personnel to design and construct wells; and operating the rural drinking water systems, stabilization lagoons, and solid waste program.

Health promotion and disease control

9.259 The national maternal health program established the priority of improving delivery care, for which efforts to train traditional midwives are underway. Emphasis in child health was placed on reducing diseases preventable by immunization and controlling diarrheal diseases and acute respiratory infections in infancy. Encouraging breastfeeding and family planning are considered supplementary activities that can contribute considerably to lowering child and maternal morbidity and mortality rates. UNFPA's financial support has been important for the organization and operation of maternal and child and family planning services.

9.260 Immunization coverage improved considerably, with an estimate of more than 60% of the children under one year of age protected. Diarrheal disease prevention intensified through the use of oral rehydration salts, and mortality was reduced—especially in rural environments. The malaria program emphasized training staff and supervisory field personnel. Other areas of cooperation were alcoholism and drug abuse prevention and implementation of the health sector's National Disaster Preparedness Program, with two related courses being given.

Cooperation Provided by PAHO/WHO

9.261 **Professional staff assigned to the country:** Twelve professionals including the PAHO/WHO Country Representative and advisers in nursing, planning, maternal and child health, epidemiology, health administration, and a technical officer for communicable diseases.

9.262 **Regional and intercountry advisers:** Thirty-four, in information systems, medical records, hospital administration, public health administration, sanitary engineering, maternal and child health, epidemiology, parasitology, disaster preparedness, veterinary public health, laboratory services, and mental health.

9.263 **Short-term consultants (STC):** Twenty-eight, in planning, nursing, sanitary engineering, epidemiology, medical records, public health administration, hospital administration, maternal and child health, information systems, health statistics, human resources, communications, demography, mental health, disaster preparedness, parasitic diseases, and laboratory services.

9.264 **Fellowships:** Seventy-three, in health administration (18), environmental health (3), nursing (1), maternal and child health (6), health services (18), communicable diseases (14), medical education (7), and clinical medicine (6).

9.265 **Courses, seminars, and workshops:** Twenty-six, on human resource development, communicable disease control, and environmental health.

9.266 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, CLAP, ECO, INCAP, PANAFTOSA, and PASCCAP.

9.267 **Cooperation from other agencies:** USAID, IDB, CARE, EEC, GTZ, UNDP, UNFPA, UNICEF, and the Swiss Government.

General Appraisal and Future Trends

9.268 The Ministry of Health's activities in 1983 were identified by the "Strategy of Overall Development 1982-1986" and the "National Health Plan 1982-1986," which were approved by the Congress of Honduras. PAHO/WHO technical cooperation programs took the priorities defined in those documents into consideration and sought to sustain coordination with other international agencies in supporting the basic programs of interest to the Government. Creating the Project Development and International Cooperation Unit was encouraged by PAHO and should help improve the management of external cooperation in 1984.

9.269 The primary health care program in marginal areas is expected to continue using the same approach, and the Organization's cooperation will serve to support it. A national training program will be drawn up for staff required by the National Water Supply and Sanitation Plan. The maternal and child health program will continue to prepare a proposal for extension of the project financed by UNFPA, based on an evaluative analysis of maternal and child health conditions.

Jamaica

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.270 The focus of attention in Jamaica continued along the lines of developing and managing primary health care. The Ministry of Health also placed increasing priority on improving the management of secondary and tertiary institutions by upgrading administrators' skills at each level. Progress in varying degrees toward these objectives was made during the year. Health services development was advanced by completing a draft of the health policy documents that now await Cabinet approval. Serious efforts were made to strengthen the health care infrastructure by refurbishing and equipping health centers and hospitals despite serious economic constraints. The Government began developing community health service management processes in public health districts and initiated surveys of health needs in order to define policies. Guidelines have been developed for community projects to be disseminated for application and testing on a nationwide basis. Within this overall effort the Government placed great importance on developing a national health information system. Efforts were made to review the monthly clinic summary report system, which supplies the data for management and supervision of several health programs. Some progress has been achieved in areas of the national environmental health program. The water operation course given at the College of Arts, Sciences, and Technology entered a new phase, with nationals taking over the tutorial role.

Health promotion and disease control

9.271 The maternal and child health program continued with the objectives of improving the health status of mothers and young children, reducing pregnancy among teenagers, and increasing the quality of health services for mothers, young children, and youths. The Government is also upgrading its capacity to impact on perinatal mortality through in-service training for nursing staff, provided by the University of the West Indies. The children's diarrheal disease program is being integrated into the public health system and in 1983 was made available to 12 new centers around the island. The Ministry of Health established epidemiological surveillance sentinel stations throughout the island to monitor and report communicable diseases. This system also provides information to facilitate planning and programming strategic inputs for the national program of immunization against diarrheal diseases. The sexually transmitted disease control program advanced as a result of training medical health officers to manage and control them. The Government is developing dental health plans to fluoridate the water in the Kingston and St. Andrew Corporation areas. Progress was made in establishing an immunological laboratory service to make possible the early diagnosis

of communicable diseases. Staff were trained and appointed to the immunology unit within the government laboratories. The mental health program was under review. A workshop was held on drug education that brought together a wide spectrum of health and social welfare professionals to discuss the problem. The veterinary public health area emphasized developing manpower for the meat inspection system and supporting laboratory services. A program that involves conducting simulation exercises was implemented to prevent animal diseases from spreading.

Cooperation Provided by PAHO/WHO

9.272 **Professional staff assigned to the country:** The PAHO/WHO Country Representative, a health management adviser, a health statistician, a part-time dental officer, a sanitary engineer, and a management adviser.

9.273 **Regional and intercountry advisers:** Advisers in mental health, maternal and child health, primary health care, communicable diseases, epidemiology, and veterinary medicine were provided from other units of the Organization.

9.274 **Short-term consultants (STC):** Short-term consultants in food chemistry, immunology, mental health, primary health care, information systems, veterinary public health, and medical records were provided.

9.275 **Fellowships:** Forty-five, in public health administration (2), hospital and medical administration (1), other public health administration subfields (4), specialized areas of sanitation (3), nursing education (7), public health nursing (1), nursing services (2), maternal and child health (1), health services (7), mental health (2), rehabilitation (1), leprosy (3), laboratory services (3), other communicable disease areas (4), and medical education and related sciences (4).

General Appraisal and Future Trends

9.276 Progress was made in varying degrees towards the objectives established by the Government. In most instances, however, there were delays due to problems of an economic, social, and environmental nature, which had an impact on the quality of the services provided. No major changes occurred in the organization of the technical program areas, but efforts were made to coordinate activities through more structured meetings for program managers.

Mexico

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.277 The national objective "Toward a National Health System," which involves integrating the sector and decentralizing service, triggered the carrying out of some important activities. Sector and institutional planning achieved design and programming of services; decentralization of administrative, operative, and evaluation functions to the coordinated service level; and institutional development of state services. Service extension and consolidation in rural and marginal urban areas showed progress in developing and evaluating the projects in León (Guanajuato) and Tijuana (Baja California), designing and evaluating primary care models in rural areas and analyzing the technologies applied, analyzing and evaluating the nursing supervision process, and integrating the primary service level training into the curriculum of four nursing schools.

9.278 Outstanding activities in human resource development included: redesign of the curriculum of the School of Public Health and the health and hospital service seminars; conduct of a course in applied epidemiology for service and teaching nurses; holding a mental health course at the Nursing School in San Luis Potosí; development of sanitary engineering educational resources at eight state universities, by reviewing curriculum and granting fellowships; and sponsorship of two veterinary medicine seminars—one to standardize the epidemiology curriculum at 20 veterinary medicine schools and the other on epidemiology for educators.

9.279 Environmental health activities were placed within the framework of the "Water and Sanitation Plan," emphasizing the administrative reorganization of the subsector by coordinating institutional resources and training personnel. This includes: a course to evaluate water purification plants, that triggered a national evaluation program; a seminar on formulating water and sanitation projects; design of the national solid waste program in cooperation with the Under-Secretary for Ecology; application of the stabilization lagoon manuals prepared by CEPIS; and participation in the Latin American workshop on pesticide risks.

Health promotion and disease control

9.280 Mention should be made of the supervision, monitoring, and evaluation actions carried out within the maternal and child health and family planning program. The definition and evaluation of child care levels in marginal areas are also worthy of mention. Importance was placed on programming and developing a study of diarrheal diseases. Disease control activities carried out in epidemiological surveillance included three workshops on disease control epidemiology, evaluation of the surveillance system, and the conduct of activities to monitor dengue, trachoma, and hospital infections. The Expanded Program on Immunization (EPI) emphasized retraining central-level and state-level personnel and adjusting the technology applied, especially in cold chain logistics. The tuberculosis reporting system to facilitate the control of cases was modified; a course on improving the tuberculosis diagnostic laboratory networks was held; laboratory technical standards were reviewed; and a course on tuberculosis epidemiology took place. A national seminar was given on acute respiratory diseases. The malaria transmission problem, aggravated by the arrival of foreign refugees in the States of Chiapas, Oaxaca, and Campeche, was researched. The activities of the national antimalaria program are being decentralized to state health services, creating a need for programatic and operational adjustments.

9.281 The laboratory services program places priority on training activities for central and state personnel through courses on preparation and quality control of reference reagents, viral vaccines, computer use in hematology, and food bacteriology. The program to develop rehabilitation centers continued with dissemination of orthesis and prosthesis preparation techniques, establishment of standards, and training of auxiliaries. In the area of development of the national capacity for health research and studies, the experience acquired by demonstration areas was analyzed; health service research courses on programming and methodology were held, new research and study units were developed at the School of Public Health, the Inter-American Studies Center of the Social Security Institute, and at the State Health Services of Jalisco and Mexico. Epidemiological surveillance of zoonoses was extended to cover the entire country. Animal health services were consolidated to prevent the introduction of exotic diseases.

Cooperation Provided by PAHO/WHO

9.282 **Professional staff assigned to the country:** Twelve, including the PAHO/WHO Country Representative and advisers in planning, research, maternal and child health, nursing, health statistics, sanitary engineering, epidemiology, malaria, laboratory services, prosthesis, and veterinary medicine.

9.283 **Regional and intercountry advisers:** Eighteen, in health administration, health statistics (2), maternal and child health, nursing (2), epidemiology (5), veterinary medicine, sanitary engineering, radiation protection, family health, malaria, and laboratory services (2).

9.284 **Short-term consultants (STC):** Eleven, in planning, sanitary engineering, psychiatric nursing, obstetrics, health statistics, epidemiology, entomology, tuberculosis bacteriology, acute respiratory infections, BCG laboratory, and veterinary medicine.

9.285 **Fellowships:** Eighty-four, in health services, maternal and child health, disease control, and environmental health.

9.286 **Seminars and workshops:** Eighteen, in human resources, disease control, and environmental health.
9.287 **Courses:** Twelve, in human resources, tuberculosis, environmental health, and laboratory services.
9.288 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, ECO, and PANAFTOSA.
9.289 **Cooperation from other agencies:** Kellogg Foundation, UNDP, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.290 Actions promoted and developed by the health authorities with PAHO/WHO cooperation were carried out within the context of the health policy adopted by the Government to focus efforts "Toward a National Health System." Two major strategies are being followed: integration of the health sector and decentralization—administratively and operationally—to the states. The first stage includes steps to identify areas of responsibility and authority, as well as the communication and coordination between the central structure and state agencies. A Country/PAHO joint analysis was made of the possible adjustments in PAHO/WHO cooperation to cover these priorities.
9.291 On the whole, all the national objectives coincide with the Regional Strategies and the Plan of Action, including those priority aspects determined by socioeconomic conditions and health problems in the country. Outstanding efforts were made to combine multi-institutional plans and resources to consolidate and extend the health services coverage to marginal rural and urban populations; increase training for personnel; improve disease control; and, especially, solve environmental problems.
9.292 Adoption of the "Development Plan 1983-1988" required that a balance be struck in regard to economic, industrial, and social growth, while preserving natural resources. This objective, combined with a process of restructuring institutions, will necessitate the introduction of changes and adjustments in some priority components of the National Plan. That need, in turn, may also condition the areas and types of cooperation that the Government requires from PAHO/WHO and other agencies.

Netherlands Antilles

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.293 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. The Ministry supports and complements the work carried out by the insular governments by providing those necessary services that—due to technical, economical, and administrative reasons—they are unable to deliver on their own. Renovating hospital installations was considered necessary to provide health services in Curaçao, St. Maarten, and St. Eustatius, as well as the Public Health Laboratory service and building in Aruba. The Organization participated in discussions at the ministerial level regarding primary health care in line with the Regional Plan of Action. Cooperation in health manpower training will continue to be required. The Government placed a great deal of attention on developing human resources, particularly for medical education. Supplying sufficient drinking water for the needs of Aruba and Curaçao continues to be a major environmental health problem. Sewerage and solid waste disposal are programs of particular interest to St. Maarten. Large oil installations in Aruba and Curaçao complicate environmental health. All these factors are of great concern, particularly since the islands have a well developed tourist industry.

Health promotion and disease control

9.294 The Government is continuing to study the possibility of joining the Expanded Program on Immunization's (EPI)

Revolving Fund for communicable disease surveillance and control. The Dutch Government is also considering joining CAREC and CFNI. EPI provided technical cooperation, emphasizing the assessment of immunization level in schoolchildren, vaccination requirements for school entry, and vaccine storage. The Organization collaborated by providing the laboratory in Aruba services related to the need for a new complex. Bonaire, Curaçao, and St. Maarten are infested with *Aedes aegypti* mosquitos. Dengue and yellow fever continued to pose threats, although no outbreaks were recorded in 1983. The Organization also collaborated in supplying yellow fever vaccine, monitoring dengue surveillance, and evaluating the *Aedes aegypti* situation in St. Maarten. The Government accepted the proposal of a visit by a vector control specialist scheduled for early 1984. Animal health and veterinary public health received reduced support from the Organization, partly due to the lack of a veterinarian counterpart in the national program; however, CFNI reviewed a proposal to the Ministry of Nutrition and Agricultural Education in this respect.

9.295 The disaster prevention and relief program was awarded a high priority, and PAHO assisted in developing a disaster plan and expressed considerable interest in the Pan Caribbean Disaster Preparedness and Prevention Project.

Cooperation Provided by PAHO/WHO

9.296 **Professional staff assigned to the country:** Whereas no full-time professional staff is assigned to the Netherlands Antilles, considerable cooperation comes from the Organization's staff located in various parts of the Caribbean, CAREC, CFNI, the Caribbean Program Coordinator's Office, as well as from Headquarters. Consultants in epidemiology, health manpower development, laboratory services, disaster preparedness, vector control, environmental health, and nutrition were provided to collaborate with Government efforts.

9.297 **Fellowships:** Three, in health services, environmental health, and animal health and veterinary public medicine.

9.298 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.299 The Organization will continue in its role as coordinator for technology transfer, human resource development, and promotion of technical cooperation among developing countries. Major efforts in the past year were in health service development, *Aedes aegypti* eradication, animal health, veterinary public health, and environmental health. It is likely that future cooperation will be along the same lines, strengthening some CAREC, CFNI, and EPI activities in accordance with the indications of the Government.

Nicaragua

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.300 Emphasis was placed on extending coverage and developing health areas through the implementation of a new organizational model in several regions to achieve the basic objective of providing the entire population with health care. The following activities contributed to this objective: continued development of the system to control and monitor health actions; development of a referral system; several studies on health services, including primary care strategy; and promotion of intersectoral linkages and external resources to develop the health system. An international seminar on primary care in Latin America was carried out to define operational approaches. A medium-term plan for maintaining health establishments was drafted, and the Division of Engineering and Design for hospital maintenance was created at the National Center of Engineering.

9.301 Human resource development emphasized training national personnel in priority areas. Activities worthy of special mention were: educating 1,067 auxiliaries and mid-level technicians; incorporating 1,072 staff members into the two-year

compulsory rural social service; continuing education activities with 3,500 participants; incorporating 226 medical professionals into the program for specialized residencies; and conducting six courses for health teams. PAHO also supported the participation in international events of 51 national staff members from the Ministry of Health (MINSA), the Nicaraguan Water and Sewerage Institute (INAA), Ministry of Agricultural Development (MIDA), and the Autonomous University of Nicaragua (UNAN). The Organization also exchanged experience with 31 professionals from among national staff, experts from other countries and intergovernmental institutions.

9.302 The first master's degree course in health administration and epidemiology was analyzed; the Health Information and Documentation Center continued to expand and produce educational materials; several community health education activities were carried out; and research on the education component in breastfeeding and diarrheal disease was conducted.

9.303 The PAHO Textbook Program distributed books and medical and odontological instruments to the Managua and León campuses of the National Autonomous University's School of Medicine, the "Luis Moncada" Health Polytechnical School in Managua, the Program for Diagnostic Instruments at UNAN's School of Medicine in León, and the School of Nutrition of the University of Central America (UCA), in Managua.

9.304 Environmental health received outstanding support for the institutional development of INAA. The main actions were directed toward developing an optimum design for water distribution networks; increasing INAA's technical capability; developing tariff studies for water supply and sewerage services; formulating 16 drinking water treatment plant projects; conducting a course on wastewater treatment; and programming courses in sanitary engineering at the national university.

Health promotion and disease control

9.305 Maternal and child health services achieved adequate levels, covering 85% of the infant population, 89% of prenatal care, and 42% in family planning. PAHO/WHO cooperated in other actions directed toward: educating and training nursing auxiliaries, and technologists in cytology; presenting a national workshop on reproductive risk; and conducting workshops on maternal and child health and human fertility. Subsidies to several institutions were provided to buy equipment for maternal and child health services within the health centers and to continue the study on risks. In oral health, PAHO assisted UNAN's School of Dentistry in readjusting its curriculum, supplying textbooks to the School, and preparing supervision and control manuals for maintaining equipment; a course on the latter subject was also held.

9.306 The Expanded Program on Immunization continued to develop and improve disease prevention and control with preferential attention given to conducting a course for cold chain personnel and preparing maintenance manuals. A comprehensive analysis of the program was carried out, including purchasing vaccines. Other activities in this area were: continuing to structure the National Hygiene and Epidemiology Center; preparing research protocols; and presenting a workshop on epidemiological surveillance. Malaria and *Aedes aegypti* control and eradication advanced, with further integration of these areas into the regional programs of the Unique National Health System of the country; research on vector control was conducted and measures applied.

9.307 A disaster preparedness plan was drawn up and an international seminar held on disaster programs.

Cooperation Provided by PAHO/WHO

9.308 **Professional staff assigned to the country:** The PAHO/WHO Country Representative and one medical officer.

9.309 **Regional and intercountry advisers:** Forty-two, in nutrition, planning, immunization, maternal and child health, oral health, essential drugs, environmental sanitation, hospital construction, equipment maintenance, and animal health.

9.310 **Short-term consultants (STC):** Fifty-four, in various program areas

according to national priorities.

9.311 **Fellowships:** Seventy-six, in public health administration, epidemiology, veterinary public health, health education, nutrition, laboratory services, hospital equipment maintenance, planning, information systems, oral health, demography, and maternal and child health.

9.312 **Courses, seminars, and workshops:** Six master's level courses were held in health administration and epidemiology. Courses were also given in optimizing water supply networks and sewerage systems. Operations manuals were prepared on different application levels for cold chain staff and several courses were held for 380 health area directors. Several seminars and workshops were held on equipment maintenance service, epidemiological surveillance, reproductive risk, EPI cold chain, and health education.

9.313 **Technical cooperation from PAHO Centers:** BIREME, CEPIS, CLAP, ECO, and INCAP.

9.314 **Cooperation from other agencies:** IDB, BIREME, UNDP, UNFPA, and UNICEF.

General Appraisal and Future Trends

9.315 The country's difficult situation in 1983 made careful planning necessary in order to improve utilization of resources available and to deal with various priority problems in the most efficient way possible. The resulting program-budget, in keeping with the Government's health policy, emphasized extending coverage and developing health areas; educating and training human resources necessary for primary health care; improving water and sanitation services; attending to the health of certain priority groups; and preventing and controlling the most prevalent diseases. Financial support for executing the programmed actions was made available by several institutions and agencies, which contributed substantially to the resources applied to the health sector.

9.316 The increasingly clear definition of a health policy will make it possible to consolidate a Unique National Health System and to participate in cooperation programs with several agencies. This will allow PAHO to collaborate with the Government in the immediate future in preparing the first Five-Year Health Plan within the country's general economic and social development plan. PAHO will then be required to make an in-depth analysis of its capacity to collaborate technically and operationally with the country in the most efficient way possible. This entails placing appropriate importance on joint programming mechanisms with other countries and bilateral or multilateral agencies and institutions willing to implement bilateral scientific-technical cooperation. The Government's acceptance to participate as a model country in implementing the strategy of health for all will also require increasingly efficient coordination between PAHO/WHO and UNICEF.

Panama

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.317 PAHO/WHO cooperation was provided to Panama to develop the health system and services. A preliminary health plan was prepared that would permit an overview of the actions needed to attain the goal of health for all. With this goal in mind, the process of redefining and reorganizing the health infrastructure was initiated and included care levels, regionalization, and service integration. Several national and local seminars were held for the purpose of designing policies to implement the strategies of health for all, analyzing technical and administrative aspects of the health system, and evaluating its administrative services. Provisional drafts were made for a functional and architectural plan to build a new hospital, to remodel seven others, and to improve Santo Tomás Hospital. Collaborative efforts aimed to develop and implement the administrative process that will allow the national computer network to become operational. Cooperation was provided to develop a program to strengthen

primary care activities and extend the coverage of health services to marginal rural populations in the provinces of Darién, Chiriquí, and the San Miguelito District in the province of Panama. Several coordination mechanisms allowed for closer ties and communication among agencies of the health sector—the National Drug Commission, the Commission for Civilian Protection during Disasters, and the Commission for Programs and Publicity. The Social Security Fund and the Ministry of Planning and Economic Policy set up the terms of reference to study the health sector, which will make a comprehensive diagnosis of sector policies and strategies possible. The study will include identification of the population's needs and the services it receives and analysis of the resources available to provide services and their utilization.

9.318 The program to develop human resources for the health sector is carried out at several levels by institutions within the sector and by the National University. The School of Nursing was supported in its efforts to extend maternal and child health services. A public health administration course was planned within the Preventive Medicine Department of the School of Medicine. Personnel training in primary health care at all levels continued and was carried out by the Ministry of Health with PASCCAP's support. A review of the curricula of the Schools of Dentistry, Pharmacy, and Engineering was conducted for the purpose of introducing concepts and strategies of primary care and health for all.

9.319 The environmental health area advanced considerably with the work carried out by the National Water Supply and Sewerage System Institute (IDAAN), which made increasing the population's drinking water service coverage possible; a solution was proposed for solid waste disposal in Panama City and Colón; national personnel participated in several courses on water supply management, microbiology, and water treatment, as well as operating and maintaining water treatment plants.

Health promotion and disease control

9.320 Development of the program to extend maternal and child health service coverage included a number of important activities: implementation and evaluation of the perinatal clinical history; supervision of the national program; conduct of several courses on maternal and child health administration; and activities in adolescent health, sex education, and the supervision of the school health program. A tripartite review of the Project to Extend Maternal and Child Health Services carried out by the Ministry of Health, UNFPA, and PAHO/WHO, made it possible to evaluate the performance and progress achieved and to establish the work plan and budget for 1984.

9.321 A National Food and Nutrition Plan was formulated and its standards established. A project aimed at promoting breastfeeding in the country was formulated and presented to USAID for financing. An evaluation of the program to fortify sugar with vitamin A resulted in a recommendation that some adjustments in the program be made. Several preventive activities in oral health were executed, and the dental services were integrated into primary health care.

9.322 Disease prevention and control saw the increase of protection against the diseases included in the Expanded Program on Immunization. A permanent, systematic vaccination program against jungle yellow fever was conducted in the province of Darién. An intersectoral and multidisciplinary national commission was established to review the standards of the program for surveillance and control of sexually transmitted diseases, since their incidence has increased considerably in the country. Several national commissions were being established to propose the most appropriate measures to prevent and control chronic noncommunicable diseases. The malaria epidemic that broke out in the Darién province and in the San Blas region was to be discussed at a ministerial meeting planned to coordinate the Colombian and Panamanian malaria eradication services.

9.323 The animal health epidemiological surveillance system was implemented nationally and will make it possible to determine program priorities to rapidly

identify the most important problems. A project is being formulated to create a veterinary medicine research institute at the University of Panama. In the area of food control, the results were published of a survey on preclassification of industrial dairy farms. The second national course on epidemiological surveillance was held and attended by 48 veterinary doctors from the Ministry of Agricultural Development.

Cooperation Provided by PAHO/WHO

9.324 **Professional staff assigned to the country:** Four professionals including the PAHO/WHO Country Representative, and advisers in veterinary public health, health statistics, and planning.

9.325 **Regional and intercountry advisers:** Thirty-two, in epidemiology, nutrition, family health, environmental health, health service development, and extension of coverage.

9.326 **Short-term consultants (STC):** Fifteen, in development of health service infrastructure and administration, human resources, environmental health, family health, nutrition, and epidemiology.

9.327 **Fellowships:** Sixty-nine, in public health administration (26), environmental health (4), nursing (1), maternal and child health (7), various areas of medical care (8), communicable diseases (17), and medical education and related sciences (6).

9.328 **Courses, seminars, and workshops:** Twenty-four, especially in maternal and child health, public health administration, epidemiology, and environmental health.

9.329 **Technical cooperation from PAHO Centers:** CEPANZO.

9.330 **Cooperation from other agencies:** IDB,, IICA, UNDP, UNFPA, UNICEF, USAID, and WFP.

General Appraisal and Future Trends

9.331 Research on the health sector and the hospital network carried out through a series of studies will make it feasible to identify and regulate the role that each institution can play to benefit the health sector. These studies are also expected to result in a review of the regulation of the functions performed by both the Ministry of Health and other sector agencies. Activities in planning and institutional development included the development of information systems. The standardization of administrative procedures at the central level and throughout the system was also expected to facilitate the flow of information for supervising and controlling administrative management at regional and central levels.

9.332 Future activities will be oriented by the Ministry of Health's goal to achieve the greatest efficiency and effectiveness possible with the available resources, to extend coverage even further, and to improve the quality and content of some health actions. Enhancing the integration of the Ministry of Health and the Social Security Fund is expected to contribute to the improved use of sector resources and to consolidate and extend the coverage of services.

9.333 National staff participated in a very broad and complete manner in defining priorities and programming PAHO/WHO technical cooperation actions for 1984.

Paraguay

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.334 The national program to extend the health service network, in combination with integrated rural development projects, registered substantial progress, especially in increasing installed capacity—with priority placed on primary- and intermediate-level institutions. The first phase of the IDB-financed project was completed: 81 posts, 9 health centers, and 1 regional center were built, 60% of which are already functioning. The project included preparing and implementing manuals on operational service programming, technical and administrative standards and procedures for various care levels, and the system of supervision. This required training personnel, especially those working at the intermediate and auxiliary technical level, through in-service programs and workshops on local programming and

the provision and administration of services. Some concrete institutional development steps were taken in planning the development of the health system, operational programming, the information system, maintenance of installations and equipment, and provision of critical drugs and supplies.

9.335 Human resource development activities centered on designing the manpower information system, formulating the project for the School of Medicine's new curriculum, and preparing the proposal to create the "National Center for Health Personnel Training." This Center will be responsible for training intermediate technical and auxiliary personnel, as well as those required to extend health service coverage. A seminar held on technology in education was attended by representatives from 12 national health resource training units.

9.336 Substantial progress was made in the national environmental health program, with priority given to training in rural water supply. The first phase of the IBRD-financed project to build 47 water supply systems was completed, with those now operating in settlements with less than 4,000 inhabitants. The project for the second phase was formulated to include another 46 systems with IBRD resources. Another project for 200 settlements with less than 200 inhabitants was prepared for possible IDB financing. The West German Agency for Technical Cooperation (GTZ) financed 13 water supply systems now under construction. The environmental health program also stressed hydrogeological studies for Central, Las Cordilleras, and Paraguarí Departments; development of the administrative systems of 50 rural sanitation boards; training to operate and maintain water systems; and development of the information center of the National Sanitation Service (SENASA). Two training courses were given on solid wastes in Coronel Oviedo and Encarnación. The national solid waste plan was formulated and a pollution strategy developed to facilitate controlling industrial waste and water systems pollution.

Health promotion and disease control

9.337 The family health program, which includes maternal and child health, was reviewed and adjusted. This UNFPA-financed program was extended to five health regions. The oral rehydration and diarrheal disease control programs were consolidated into one program. The nutrition component of this program included outstanding research on breastfeeding patterns.

9.338 The Expanded Program on Immunization (EPI) was intensified in the flood area, due to improvements in the cold chain. A seminar on evaluating tuberculosis programs was held, as were courses on tuberculosis epidemiology and control and on acute respiratory infections.

9.339 Epidemiological surveillance of malaria was consolidated in all areas where the disease has been eradicated. A project was formulated on eradicating *Aedes aegypti* for possible external financing. Research on the epidemiology of Chagas' disease was carried out and a course organized.

9.340 The veterinary public health program to vaccinate against foot-and-mouth disease did not meet its objectives due to the conditions created by floods. Nonetheless, epidemiological surveillance was maintained in disease-free areas. The program to modernize diagnostic laboratories and produce brucellosis and tuberculosis antigens continued. An important regional course was held on epidemiological surveillance.

Cooperation Provided by PAHO/WHO

9.341 **Professional staff assigned to the country:** Six, including the PAHO/WHO Country Representative and advisers in health administration, administrative methods, nursing, sanitary engineering, and veterinary medicine.

9.342 **Regional and intercountry advisers:** Nine, in training of health personnel, medical education, nursing education, nutrition, immunization, epidemiology of Chagas' disease, serology, viral vaccines, and tuberculosis laboratory techniques.

9.343 **Short-term consultants (STC):** Fourteen, in programming health services (4), regional programming, systems analysis, information systems, development of technology, medical education, maternal and child health (2), family health programming, health education, and operation and maintenance of water systems.
9.344 **Fellowships:** Thirty, in health services, environmental health, family health, disease control, and human resource development.
9.345 **Seminars and workshops:** Eighteen, in environmental health, human resources, and disease control.
9.346 **Courses:** Twenty-eight, in development of health services, human resources, environmental health, and disease control.
9.347 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, and PANAFTOSA.
9.348 **Cooperation from other agencies:** IDB, IBRD, Kellogg Foundation, the Governments of West Germany and Japan, UNDP, and UNICEF.

General Appraisal and Future Trends

9.349 The health sector in Paraguay was committed to the goal of health for all by the year 2000, despite severe economic conditions and related problems arising from heavy flooding in several areas of the country. These circumstances, coupled with growing needs of the sector, have conditioned the demand for and characteristics of international cooperation.
9.350 Cooperation concentrated mainly on extending the health service network to unserved populations in rural areas, as part of comprehensive rural development projects. This approach is consistent with that of the Regional Strategies to achieve and improve the standard of living and well-being through the goal of health for all. The scheme is supplemented by a vigorous rural water supply and sanitation program, whose accelerated extension and consolidation received substantial support from external financing agencies. Major efforts were carried out in family health, disease prevention, and human resource development. In the context of the country's development process, subsequent phases of national health strategies are expected to continue to grant priority to extending and consolidating service coverage and providing water and sanitation to marginal populations. PAHO/WHO cooperation and that of other agencies are expected to follow this same course.

Peru

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.351 Organization of the national health service system emphasized: disseminating the Regional Plan of Action for HFA-2000 and the national strategies through sectoral and intersectoral seminars; developing the evaluation system for installed capacity; identifying maintenance training priorities of hospitals and other installations; training information system technicians and auxiliaries; and formulating an administrative programming manual for the regions of the country.
9.352 Coverage extension of health services advanced with the program in the eastern region (Iquitos). Progress was noted in the integration of regional programs and in training health auxiliaries, promoters, and lay midwives, especially for disease control and rural sanitation. Advances were also made in installing appropriate equipment and developing transportation and communication.
9.353 The training of human resources emphasized the School of Public Health's self-evaluation and continuing education process, implementing the nursing supervision model, and developing eight seminars and two workshops on supervision and continuing education in this field. Training in sanitary engineering reviewed the curricula of three universities and the training of instructors.
9.354 The National Basic Sanitation Plan (International Drinking Water Supply and Sanitation Decade) set coverage goals for urban and rural areas and established a

mechanism to use extrabudgetary resources appropriately; the national drinking water and sanitation information network was established and a workshop held to train staff from participating national centers; applied research in design, operation, and maintenance of water systems and sewerage continued; and the national surveillance program for water quality control was formulated and implemented in Lima and in three regions of the country. Advances were recorded in water pollution control, in evaluating and controlling the Rimac and Mantaro rivers, and in protecting the country's coastal water quality. Studies on recycling wastewater for agricultural purposes continued. Regulations were prepared to continue the National Urban Sanitation Plan to be implemented in six cities in the interior, and the personnel responsible for these activities were trained. The foundations were laid to study and program air pollution control in the city of Ilo, and occupational health programs were evaluated and reformulated. Three General Environment Bureau laboratories were also evaluated, and a proposal for a national reference laboratory on the environment was formulated.

Health promotion and disease control

9.355 The maternal and child health area emphasized evaluating family planning and formulating the 1984 plan, which was to include six new regions, and adapting standards and procedures including monitoring child development. Strengthening the central and operational level of maternal and child health programs was also stressed through wage supplements, courses for midwives, health auxiliaries, promoters, and the provision of supplies, and improvements in transportation. The food and nutrition program, applying the primary care strategy, was prepared for three departments. The current endemic goiter situation was evaluated and the foundations were laid for its control, including producing and marketing iodized salt.

9.356 The disease control area increased coverage of the Expanded Program on Immunization (EPI). Regional evaluations of this Program led to strengthening the cold chain, preparing guidelines, and providing equipment vaccines. Due to epidemiological surveillance, research and the control of outbreaks have improved. Three short courses in epidemiology were given for the operational levels. Studies continued on the tuberculosis situation, and a plan was designed to identify cases with improved reference laboratories. Information on the leprosy problem situation was updated. An analysis of the malaria problem was conducted, the laboratory systems were evaluated, and a new action plan was designed. The veterinary medicine rabies program was reviewed and expanded and its field staff trained; the quality of the vaccine against this disease was improved. Also noteworthy were training in hydatidosis control, evaluation of the zoonoses epidemiological surveillance system, and improvements in the diagnosis of brucellosis.

9.357 The program for educating health research personnel was promoted under the auspices of the National Council of Science and Technology. Research was also done on malaria, leishmaniasis, and Chagas' disease.

9.358 The disaster preparedness program, which received assistance from CIDA, was implemented for the victims of Piura.

Cooperation Provided by PAHO/WHO

9.359 **Professional staff assigned to the country:** Six, including the PAHO/WHO Country Representative and advisers in planning, epidemiology, sanitary engineering, maternal and child health, and family planning.

9.360 **Regional and intercountry advisers:** Fourteen, in health administration (2), nursing, epidemiology, information systems, sanitary engineering, wastewater treatment, solid wastes, environmental protection (2), systems analysis, occupational health, nutrition, and veterinary medicine.

9.361 **Short-term consultants (STC):** Sixteen, in planning, maintaining health installations, community participation, human resources, water quality control, food hygiene, water pollution, environmental pollution, occupational health, public information, bacteriology, tuberculosis,

parasitology, entomology, rabies vaccine, and research.
9.362 **Fellowships:** Eighty-four, in human resources, environmental health, maternal and child health, and disease control.
9.363 **Seminars and workshops:** Fifteen, in human resource development, environmental health, and veterinary public health.
9.364 **Courses:** Fourteen, in rural health services, information systems, maternal and child health, and epidemiological surveillance.
9.365 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, and ECO.
9.366 **Cooperation from other agencies:** IBRD, IDB, GTZ, UNDP, UNFPA, UNICEF, and USAID.

General Appraisal and Future Trends

9.367 Peru, like other developing nations, is affected by the world crisis and the inherent socioeconomic factors that determine common problems throughout the public sector and impose operational constraints on developing health plans. This situation was aggravated in 1983 by the floods in Piura and the drought in the south.
9.368 Notwithstanding these limitations, the Government made efforts to solve health problems within the context of PAHO's Regional Strategies for achieving the goal of HFA-2000. National authorities channeled PAHO/WHO cooperation to extend health service coverage, to strengthen the health system, to train personnel, especially field staff, and to develop priority programs. The following activities deserve special mention: the environmental health program, particularly as it takes advantage of substantial external resources from bilateral and multilateral financial agencies; the disease control program, especially preventable diseases; and zoonoses communicable to man. The maternal and child health and family planning program also received special attention.
9.369 In the immediate future, the study and formulation of alternatives to solve technical, operational, and financial problems—both in health services and the environment—along with the training of human resources, are areas where PAHO/WHO cooperation is expected to be needed.

St. Kitts-Nevis

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.370 The Government introduced health planning as a component of the proposed national development plan. The approach is to improve health resource utilization, mainly essential drugs, and to carefully adjust inputs to the Government's absorptive capacity. A survey of the utilization of health services was conducted and the findings were used to help identify health development objectives. The Government was represented at the Caribbean Conference on Development and Financing Water and Sanitation Projects and the Caribbean Conference on Food Safety and Control Strategy.

Health promotion and disease control

9.371 The Government participates with the PAHO-executed national maternal and child health and family life education program funded by UNFPA. The health policy statement indicated that maternal and child health is a high priority and therefore the program is of great importance for the country's overall national development.
9.372 An oral rehydration workshop served as an impetus to and learning experience in managing diarrheal diseases. The Organization assisted in following up the training of family nurse practitioners and supported their integration into the health system.
9.373 The Government expressed great interest in health education by deploying a second health educator.
9.374 Surveillance and control of communicable diseases continue to have a high national priority. The country receives collaboration from the Expanded Program on Immunization (EPI), and CAREC is developing and strengthening its surveillance in laboratory diagnostic capability. During

the year, several activities were promoted through CAREC to facilitate participation in the statistical surveillance officers' workshop, training epidemiologists, providing training for epidemiology nurse tutors, on-the-bench training for laboratory technicians, referral of laboratory specimens, and assisting the leprosy control program.

9.375 Progress is also being made in developing a leprosy control program. CAREC provides training and continuing education for disease prevention and control activities. The country also received assistance from the Pan Caribbean Disaster Preparedness Health Team located in Antigua.

Collaboration Provided by PAHO/WHO

9.376 **Professional staff assigned to the country:** Whereas no full-time professional staff is assigned to St.Kitts-Nevis, considerable cooperation comes from the Organization's staff located in various parts of the Caribbean, as well as from Headquarters, CAREC, and CFNI. Consultants in health systems development, manpower, health statistics, disaster preparedness, disease control, environmental health, nutrition, maternal and child health, veterinary public health, zoonoses control, and vector control were provided to collaborate with Government efforts.

9.377 **Fellowships:** Six, in disaster preparedness, mental health and alcoholism, blood banking, nursing services (2), and vector control.

9.378 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.379 The Organization's collaboration with the Government of St.Kitts-Nevis has been productive. The Government is making great strides despite the limited resources available. As a result, it is very important that PAHO/WHO provide assistance so as to carefully identify priority areas and work consistently in those areas in order not to overwhelm the absorptive capacity of the Government's institutions. PAHO's collaboration is anticipated to continue as in previous years.

Saint Lucia

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.380 The findings of a survey conducted on health services utilization are useful in identifying health development objectives. The Organization collaborated very closely in strengthening the planning approach to deliver health services. The infrastructure area benefited from assistance to develop a primary care project funded by the Kellogg Foundation to implement a health plan. Assistance was also given to train family nurse practitioners to facilitate extension of coverage, and mid-level staff for supervisory skills. The Government's human resource development program stressed nursing and worked actively to strengthen the role of nursing services in primary health care. The Organization collaborated in several environmental health activities considered of great importance by the Government, namely environmental health surveillance and vector control. Collaboration was provided to reinforce the animal health and veterinary public health programs and develop a zoonoses surveillance system, as well as to provide advisory services and promote the development of diagnostic laboratory capability.

Health promotion and disease control

9.381 PAHO acted as executing agency for an UNFPA-funded national maternal and child health and family life education program, as well as for the CIDA/UNFPA-funded family nurse practitioner program. The family life education component is considered the strongest, since family planning still needs to be fully coordinated with government health services. Operations research in health education and community participation is being carried out through a community-based health services utilization study. The nutrition strategy is to promote breastfeeding and feeding the weaning age

group and surveys are being carried out to determine community acceptance. Surveillance and control of communicable diseases continue to be a high national priority. The country participates in the immunization program and, with CAREC's assistance, is developing and strengthening its surveillance and laboratory capabilities. Progress was also made in developing a leprosy control program. PAHO, through CAREC, provided a large number of disease prevention and control training and continuing education workshops. The program is making satisfactory progress. Efforts to develop laboratory services are continuing, and PAHO provided services in this area for laboratory organization and development as well as fellowships outside the country.

Cooperation Provided by PAHO/WHO

9.382 **Professional staff assigned to the country:** Whereas no full-time professional staff is assigned to Saint Lucia, considerable cooperation comes through the Organization's staff located in various parts of the Caribbean, as well as from Headquarters, CAREC, and CFNI. Consultants in health systems development, manpower, disaster preparedness, disease control, environmental health, nutrition, maternal and child health, and veterinary public medicine were provided to collaborate with Government efforts.

9.383 **Fellowships:** Seven, in sanitary inspection, mental health (5), and communicable diseases. Assistance was also provided to send several health professionals to seminars, meetings, and workshops in neighboring Caribbean countries.

9.384 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.385 Favorable factors in programming collaboration were the Government's political commitment to primary health care, the national staff's dedication and enthusiasm, and the implementation of the national health plan. However, the country's poor resource endowment and limited absorptive capacity have at times been a challenge. As a result, the input rate must be carefully modulated to permit national decision-making processes to develop. Once the Government develops its National Development Plan, health planning is anticipated to become instrumental in ensuring the best use of available resources. PAHO's cooperation is expected to continue essentially along the same lines.

St. Vincent and the Grenadines

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.386 A health plan was completed, but no specific actions have been undertaken as yet to organize its systematic implementation. A considerable program delivery has, however, taken place in several areas. The Government places high priority on developing human resources and has adopted a plan for health education services. The national health manpower development program set the goal of strenghtening nursing education at the basic, postbasic, and continuing education levels. The following activities were carried out: a curriculum developed for the nursing school; a learning needs survey for nursing instructors; a follow-up of nursing education standards; and training an instructor in the fundamentals of epidemiology. The environmental health program proceeded without any major changes in its surveillance activities.

Health promotion and disease control

9.387 St. Vincent and the Grenadines is attempting to institutionalize a planning process for nutrition programs in order to develop its food and nutrition policy and to strengthen its Food and Nutrition Council. The Government actively sought technical cooperation in maternal and child health. The family planning-family life education program was integrated into the maternal

and child health program. The essential drug supply system is given high priority within the total effort, but improvement still depends upon the availability of external funding and physical resources. Laboratory services are progressing in a satisfactory manner. Laboratory manuals were prepared, a referral system for histoplasmosis specimens was set up, and laboratory equipment and literature were purchased. The country is also developing and strengthening its surveillance and laboratory diagnostic capability. These efforts were actively supported by the Caribbean Program Coordination (CPC) and CAREC.

9.388 Animal health and veterinary public health activities progressed satisfactorily, and the country remains free from exotic diseases. Attention was focused on strengthening zoonoses control and laboratory diagnostic capability. Budgetary constraints were a hindrance to the *Aedes aegypti* eradication campaign.

Cooperation Provided by PAHO/WHO

9.389 **Professional staff assigned to the country:** Whereas no full-time professional staff is 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, CAREC, and CFNI. Consultants in health systems development, manpower, disaster preparedness, disease control, environmental health, nutrition, maternal and child health, and veterinary public health were provided to collaborate with Government efforts.

9.390 **Fellowships:** Seven, in sanitation (2), public health nursing (2), health education, communicable diseases, and clinical medicine.

General Appraisal and Future Trends

9.391 The Government made a political commitment to primary health care and developed a health plan. With this in mind, PAHO should continue to support Government efforts to reinforce its commitment. Attention should also be given to ensure that the infrastructure and program development areas are mutually supportive. The introduction of short-term programming can facilitate implementation of the new health plan.

Suriname

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.392 Reorganization of the Ministry of Health included a new Division of Environmental Sanitation. The human resource development program continued the strategy to strengthen national health manpower training institutions, while facilitating the access of health personnel to higher technical and professional training and continuing education.

Health promotion and disease control

9.393 The new family health program developed as planned. Nutrition activities were coordinated, and a program to monitor day care nurseries was strengthened. The dental health program continued to train auxiliaries to provide care for schoolchildren. The immunization program set a trend with a close to 100% coverage expected in first vaccinations (DPT and TOPV) and more than 80% complete vaccination by age one. The groundwork was laid for the diarrheal disease control program. The malaria eradication program continued its operations. The program's attack phase and operative areas are under the direct supervision of the Medical Mission. Consolidation and maintenance are under the Public Health Department. There was a slight general decrease in malaria incidence. Budgetary limitations did not allow for an active *Aedes aegypti* eradication program, but monthly spraying cycles were carried out in port areas and good results were obtained at the airport. The control of leprosy, sexually transmitted diseases, and dermatological conditions need professional staff. Program activities were reduced to curative services. Schistosomiasis control activity included

holding a five-week workshop in July on epidemiology of the disease, with funds from the WHO Special Program for Research and Training in Tropical Diseases. The veterinary public health program made some progress. The national veterinary diagnostic laboratory is complete, fully equipped, and technically capable to satisfy the country's needs to develop the livestock industry.

Cooperation Provided by PAHO/WHO

9.394 **Professional staff assigned to the country:** PAHO technical cooperation to Suriname included the PAHO/WHO Country Representative and one sanitarian.
9.395 **Regional and intercountry advisers:** Support was provided in epidemiology, entomology, diarrheal disease control, and nutrition.
9.396 **Short-term consultants (STC):** These included those in laboratory services, veterinary medical statistics, sanitary engineering, solid waste, and the acquired immune deficiency syndrome (AIDS) disease.
9.397 **Fellowships:** Seven, in specialized sanitation fields (2), public health medicine (2), health education (1), communicable diseases (1), and clinical medicine (1).
9.398 **Courses and seminars:** Several, in malaria, virology, and health services development.
9.399 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.400 Political changes in the Government in 1983 curtailed and affected most activities including those in public health and those with PAHO/WHO technical collaboration. It is hoped that more attention will be given to further cooperation to develop health services. Programming has already been made along those lines. Cooperation should focus more on strengthening national capacity. In 1984, the Organization will direct its cooperation toward finding more flexible ways to collaborate in health activities.

Trinidad and Tobago

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.401 The Government emphasized and is implementing a policy to improve the utilization of resources in all public sectors including health. The outstanding event along these lines was a national workshop on primary health care, which resulted in enhancing national awareness of the primary health care approach. The Government's commitment to initiate a formal managerial process towards national health development led to creation of a Planning Committee, consisting of all the senior Ministry of Health and Environment officers, and also of strengthening the planning unit, particularly the research section. Progress in community health services was made by fully implementing the team approach. Services were regionalized along county lines and attention was given to building a health team in each county. These teams worked closely with other units that normally were not part of community health services. Some progress was made in health training by developing a strategy more consistent with the Government's commitment to primary health care. Preliminary plans for a series of management training programs have started, as has the initiation of postbasic training in nursing administration. Progress at the School of Dental Nursing was slow, with no new students registered during the year. The new approach included strengthening the Ministry of Health and Environment's Training Unit and revitalizing the Training Advisory Committee.
9.402 Progress in environmental health took place within the Ministry of Health and Environment. The Plan of Action adopted in 1981 met with some delays in its implementation. Agencies outside of the Ministry of Health and Environment were, however, quite active. The Trinidad and Tobago Solid Waste Management Company pioneered extensive community participation in environmental health through the promotion of neighborhood action groups.

Health promotion and disease control

9.403 Maternal and child health and family planning services care for more than 80% of the pregnant women annually at government clinics, and more than 75% of the country's births take place in government hospital delivery units. The community mental health program took steps with a voluntary organization, the Council on Alcoholism, to stimulate a program to control alcoholism in industry. Preparations have already begun for the International Conference on the Prevention of Alcohol and Drug Abuse, to be held in Trinidad in October 1984. Dental care in health centers improved as a result of the work of locally trained dental nurses. The occupational health unit expanded somewhat in 1983 with the appointment of additional public health inspectors. The European Economic Community (EEC) accepted a project proposal to train an industrial hygienist and support staff. Routine epidemiological surveillance activities continued with CAREC's assistance. The immunization program emphasized covering children in infancy and introduced measles-rubella immunization. Oral rehydration was successful, achieving 80% reduction in mortality due to gastroenteritis in young children. Mention should be made of Trinidad and Tobago's role as a donor of technical cooperation among developing countries, since nationals involved in oral rehydration control participated increasingly in training courses throughout the Caribbean, including Cuba. *Aedes aegypti* eradication was revitalized under the new directorship of the Insect Vector Control Division. The Chemistry/Food and Drug Division worked in food hygiene with the Occupational Health Division to prepare regulations for pesticide safety. A health statistics and medical records task force was appointed by the Ministry of Health to implement the recommendations made by the regional adviser. Significant improvement was achieved in the medical records system.

Cooperation Provided by PAHO/WHO

9.404 **Professional staff assigned to the country:** The PAHO/WHO Country Representative and advisers in health planning and sanitary engineering, an administrative officer, and a sanitarian.

9.405 **Regional and intercountry advisers:** Advisers were provided from other units of the Organization for programmed periods of time in planning, health services development, nursing, health education, sanitary engineering, dental care, nutrition, epidemiology, vector control, and family planning.

9.406 **Short-term consultants (STC):** These were provided in dentistry, medical records, laboratory techniques, mental health, veterinary medicine, and health statistics.

9.407 **Fellowships:** Twenty-seven, in public health administration (1), other public health administration subfields (9), nursing education (4), nursing services (6), health services (1), health statistics (1), rehabilitation (1), laboratory services (3) and in another specialized field (1).

9.408 **Technical cooperation from PAHO Centers:** CAREC and CFNI.

General Appraisal and Future Trends

9.409 The Government of Trinidad and Tobago is making great strides in the area of public health. The National Economic Commission's Task Force on Health recommended, in its report, that Global and Regional Strategies to attain health for all by the year 2000 be used as the guideline for government action. The Government is responding to the economic strain by streamlining and maximizing the use of its limited available resources.

9.410 Efforts and new working relationships were consolidated in 1983, especially with the Women's Desk at the Ministry of Labor, Social Security and Cooperatives and the Ministry of Sport, Culture and Youth Affairs. The efforts made, to ensure that technical cooperation was relevant for Trinidad and Tobago's needs and consistent with the Governing Bodies' resolutions, appear to have been not only welcome at all government levels, but also had considerable impact especially in intersectoral coordination.

Uruguay

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.411 The national objectives of consolidating the installed capacity and increasing service operation and performance were achieved through: a survey of the population's health problems, an identification of the demand and utilization of service, and an analysis of institutional coverage; the identification of the sector's physical resources; and a study of the sector's financing, including the origin, flow, and destination of resources, as well as institutional productivity. This analysis was the basis for formulating the National Health Plan, reviewing strategies, developing programming methods and guidelines, and designing the national monitoring and evaluation system. The medical care programs were prepared by levels of complexity, regionalization of the service network was initiated, and the area of influence of each service was identified. A review of nursing procedures was also conducted and a plan drawn up for outpatient care in the Montevideo area. Personnel were trained through short courses on medical records and health education. Priorities in reorganizing the administrative development unit of the Ministry of Health were identified, and a proposal was formulated to include the provision of supplies.

9.412 The human resource area emphasized holding the national nursing supervision seminar, reviewing the School of Nursing's curriculum, and analyzing training programs for auxiliaries.

9.413 The Government gave high priority to the Basic Sanitation Program within the State Sanitary Works, which targeted a census of system users, leak reduction, meter replacement, extending the system, improving administration, and formulating the financial plan. Preparation of a rural water and sanitation plan was stressed and included the financial proposal. Monitoring air pollution and the wastewater program continued. Two training courses for health inspectors were also organized.

Health promotion and disease control

9.414 The Expanded Program on Immunization (EPI) carried out an evaluation of the cold chain and, as a result, provided additional equipment and held three short courses to retrain personnel responsible for different cold chain levels. A course in epidemiological surveillance was developed for department directors, the laboratory diagnosis manuals were reviewed, and four fellowships in laboratory techniques were granted.

9.415 Maternal and child morbidity research was carried out as planned as was the oral rehydration seminar. Two workshops were held, one in mental health and another in dental health.

Cooperation Provided by PAHO/WHO

9.416 **Professional staff assigned to the country:** Four, including the PAHO/WHO Country Representative and advisers in medical care, sanitary engineering, and administrative methods.

9.417 **Regional and intercountry advisers:** Eleven, in nursing (3), nursing education, sanitary engineering, epidemiology, systems engineering, health statistics, project formulation, laboratory technology, and health education.

9.418 **Short-term consultants (STC):** Twelve, in surveys and sampling, financial analysis (2), hospital architecture, service programming, project formulation, systems analysis, nursing education, water systems, water resources, maternal and child health, and sociology.

9.419 **Fellowships:** Twenty-five, in development of health services, human resources, and environmental health.

9.420 **Seminars and workshops:** Six, in human resources, environmental health, and maternal and child health.

9.421 **Courses:** Six, in health services, immunization, and epidemiology.

9.422 **Technical cooperation from PAHO Centers:** CEPANZO, CEPIS, and CLAP.

9.423 **Cooperation from other agencies:** IDB, UNDP, and UNICEF.

General Appraisal and Future Trends

9.424 Health authorities concentrated efforts and requests for PAHO/WHO cooperation in conducting an overall review of the problems prevalent in health infrastructure, expenditures and available resources, and the type and extension of services provided by the system. The latter refers to access by all the population—measured in terms of demand, the possibility of meeting this demand, and the actual utilization of services.

9.425 This analysis provided a first approximation of the National Health Plan, strategies were adjusted, and the standards and procedures to be followed were redefined. The next step is to break the Plan down and implement activities through medium- and short-term programming, human resource development, and financial strategies and plans.

9.426 The Plan's components and the basic sanitation program constitute the areas the Government has identified as requiring future cooperation from PAHO/WHO and other agencies.

Venezuela

Actions with PAHO/WHO Cooperation

Developing the health service infrastructure

9.427 Although not implemented fully, the Sixth National Plan includes the general health and nutrition policy outline, as well as the main strategies to achieve the goal of health for all by the year 2000. Regionalization policies and complexity levels were formulated accordingly; extending coverage through strengthening outpatient care and primary care programs; and coordinating the planning, statistics, and medical care systems. Intersectoral communication included promoting the creation of multisectoral councils with representatives from the Ministry of Health and Social Welfare, the Venezuelan Social Security Institute, and other institutions. Health care sectoralization by complexity levels was supported in cooperation with the physical development and equipment committees of the Ministry of Health and Social Welfare. Operating capacity has been strengthened, thereby improving the programming procedures and service evaluation. The preparation and application of a manual to standardize clinical and administrative procedures nationwide was supported.

9.428 The human resource development area established a permanent system to upgrade the sector's manpower. Outstanding activities in this field were: the course on personnel planning; special continuing education programs in areas such as the Latin American Cancer Research Information Project (LACRIP); the training program for administering scientific health research; and the socioepidemiological research proposals on the health-disease process and types of care. The Textbook and Instructional Materials Program for medical students expanded, and a work program was established with the Pan American Federation of Faculties (Schools) of Medicine Associations (FEPAFEM), and the Graduate Program on Physical Medicine and Rehabilitation. The programs for training auxiliary dental personnel continued to develop.

9.429 Environmental health strengthened all levels of the National Institute of Sanitary Works' (INOS) managerial and operational capacity, as well the coordination between this institution and the Ministry of Health and Social Welfare. Coordinating activities with the Ministry of Environment and Renewable Natural Resources was also supported.

9.430 PAHO/WHO cooperation was also directed at providing advisory service to produce vaccines for animal and canine use within the Regional Center for Production of Rabies Vaccines and at supporting development of a course on laboratory management at the National Institute of Hygiene.

Health promotion and disease control

9.431 PAHO collaborated in the study on the expanded role of nurses in community care, within the maternal and child health

program; training middle-level and nursing personnel in perinatology; support for the breastfeeding program; analysis and interpretation of the national nutrition survey; and the training of personnel for the program's priority areas. Advisory services were provided in psychiatric rehabilitation, including epidemiological aspects of mental health, and in the campaign against alcoholism and drug abuse.

9.432 Disease control received collaboration in planning and conducting epidemiological research and training all levels of personnel in critical areas of epidemiology. The Expanded Program on Immunization (EPI) continued to develop, as did the infant enteric disease program. Support was given to immunology and other areas of the Pan American Center for Research and Training in Leprosy and Tropical Diseases (CEPIALET), to several activities carried out by the central laboratory of the National Institute of Tuberculosis, and to the acute respiratory infections program. The animal health and veterinary public health program included collaboration to design and execute epidemiological studies and serological surveys; epidemiological surveillance to prevent introducing exotic diseases; and institutional research on pesticide residues in food.

Cooperation Provided by PAHO/WHO

9.433 **Professional staff assigned to the country:** Eight, including the PAHO/WHO Country Representative and advisers in health administration, health statistics, veterinary public health, health sciences (2), epidemiology, and sanitary engineering.

9.434 **Regional and intercountry advisers:** Thirty-nine, in oral health, human resource development, environmental health, laboratory services, epidemiology, nutrition, maternal and child health, and food quality control.

9.435 **Short-term consultants (STC):** Thirty-three, in epidemiology, nutrition, laboratory services, health planning, human resource development, food quality control, and communicable disease control.

9.436 **Fellowships:** Sixty-two, in public health administration (15), environmental health (1), nursing (1), maternal and child health (2), different health programs (20), communicable diseases (16), medical education and related sciences (6), and clinical medicine (1).

9.437 **Courses, seminars, and workshops:** Fourteen, in areas related to planning and programming, health service, and oral health.

9.438 **Technical cooperation from PAHO Centers:** CEPIS and PANAFTOSA.

9.439 **Cooperation from other agencies:** IDB and UNDP.

General Appraisal and Future Trends

9.440 The policy of public spending austerity implemented by the Government led to a reduction in the resources allocated to the Ministry of Health and Social Welfare. This in turn led to promoting a series of measures directed toward regionalization, reforming the central level of the Ministry of Health and Social Welfare, establishing health districts, and strengthening health care levels. The Sixth National Plan includes the general policy to execute actions related to achieving the goal of health for all by the year 2000. Two national centers—the Pan American Center for Research and Training in Leprosy and Tropical Diseases (CEPIALET) and the Venezuelan Center for Classification of Diseases (CEVECE)—were supported by the Organization. Creating a National Committee for the International Drinking Water Supply and Sanitation Decade, presided over by the Minister of Health and Social Welfare, will promote efforts to attain the Decade's goals.

9.441 It is hoped that the Health Sector Planning Committee will contribute to rationalizing actions to extend coverage and achieve the goal of health for all by the year 2000. Since human resource development is considered a priority area, emphasis is expected to be placed on health training and research to fulfill the objectives outlined in the policies and national programs. Given the continuing importance of environmental health problems, the training of personnel in

planning, management, and administration of water supply services and solid waste management systems should be promoted. PAHO/WHO intervention could be important in the dialogue initiated with UNICEF on the possibility of carrying out a joint nutrition program.

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Acronyms and Corresponding Agencies or Programs

ACMR	PAHO Advisory Committee on Medical Research
AMPES	American Region Programming and Evaluation System
BIREME	Latin American Center on Health Sciences Information
CAREC	Caribbean Epidemiology Center
CARICOM	Caribbean Community
CDC	Centers for Disease Control (USA)
CEPANZO	Pan American Zoonoses Center
CEPIALET	Pan American Center for Research and Training in Leprosy and Tropical Diseases
CEPIS	Pan American Center for Sanitary Engineering and Environmental Sciences
CFNI	Caribbean Food and Nutrition Institute
CIDA	Canadian International Development Agency
CLAP	Latin American Center for Perinatology and Human Development
CLATES	Latin American Center for Educational Technology in Health
COSALFA	South American Foot-and-Mouth Disease Control Commission
ECLA	Economic Commission for Latin America (UN)
ECO	Pan American Center for Human Ecology and Health
EEC	European Economic Community
EPI	Expanded Program on Immunization
FAO	Food and Agriculture Organization (UN)
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development (World Bank)
IDB	Inter-American Development Bank
IDRC	International Development Research Center (Canada)
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labor Organization
INCAP	Institute of Nutrition of Central America and Panama
LACRIP	Latin American Cancer Research Information Project
NIH	National Institutes of Health (USA)
OAS	Organization of American States
OIRSA	International Regional Organization for Health in Agriculture and Livestock
PADEF	Pan American Development Foundation
PAHEF	Pan American Health and Education Foundation
PAHO	Pan American Health Organization
PANAFTOSA	Pan American Foot-and-Mouth Disease Center
PASB	Pan American Sanitary Bureau
PASCCAP	Community Health Training Program for Central America and Panama
PLADES	Latin American Program for Educational Development in Health
UN	United Nations
UNDP	United Nations Development Program
UNDRO	United Nations Office of the Disaster Relief Coordinator
UNEP	United Nations Environmental Program
UNFDAC	United Nations Fund for Drug Abuse Control
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UNU	United Nations University
USAID	U.S. Agency for International Development
WFP	World Food Program
WHO	World Health Organization
WHO/TDR	WHO Special Program for Research and Training in Tropical Diseases