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To the Member Countries of the Pan American Health Organization

I have the honor to submit for your consideration the 1987 report on technical cooperation activities of the Pan American Sanitary Bureau, Regional Office of the World Health Organization. Within the context of regional health-for-all strategies and of policies set by the Pan American Health Organization's Governing Bodies, this report analyzes the year's salient activities in the Organization's technical cooperation program.

This report has been produced with the same structure and content as the 1986 *Report*.

Chapter I presents an overview of features in PAHO/WHO's work, of the main technical cooperation efforts undertaken, and of prospects for the near future.

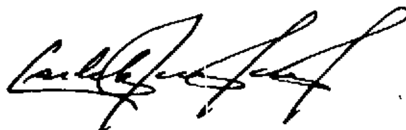
Chapters II and III analyze, at the regional level, progress and problems in developing the Organization's activities in, respectively, health systems infrastructure and health programs development.

Chapter IV summarizes programs and special initiatives the Organization has conducted in the past few years.

Chapter V describes activities carried out in Member Countries with PAHO/WHO cooperation. These summaries are based on information processed in the countries with cooperation from PAHO/WHO Representatives.

Finally, **Chapter VI** summarizes support and administrative control activities carried out by the Secretariat in the course of its technical cooperation program.

Respectfully,



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Director

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I. Overview and Prospects

PAHO/WHO shares a complex challenge with its Member Countries: how to best use the century's remaining 12 years to orchestrate effective social and economic development that fulfills the population's basic requirements, including those for health. To steer the social process towards new horizons and higher levels of achievement, the countries and the Organization, by learning from the past, must seek innovative ways to assure a brighter future. Only through a shared commitment to achieve health for all will it be possible to bring together efforts from all the social forces and to mobilize the resources needed to attain the goal.

General Situation

During 1987, the global economic crisis continued to have a profound effect on the countries' activities. More than $US28 billion was transferred away from Latin American and Caribbean countries, bringing the net capital lost in the last five years to $US130 billion. This financial drain not only has limited each country's capability to finance current growth, but also has drastically diminished investments essential for future growth. Last year's per capita Gross National Product (GNP) barely reached 1977 levels, and shrinking government spending continued to curtail resources available to the health sector. Adjustment measures have aggravated the already considerable social debt throughout the Region, severely affecting the social and economic status of vulnerable population groups.

PAHO/WHO has called for a review of development strategies and for an active search for new ways to stimulate economic growth without disregarding social demands, including those of health. In this context, macroeconomic adjustment policies must contemplate the commitment to protect basic health needs of the most vulnerable social groups. The economic crisis not only has damaged the welfare of vast sectors of the population, it also has diminished financial resources available to public institutions providing health services. Many of the Region's countries have experienced both an economic stagnation, or at least a reduction in their allocations for existing health services, and a drastic decline in investments in the health sector. These constraints have made it increasingly difficult to maintain or improve access to services by a growing population, or to guarantee the availability and timely supply of inputs crucial for providing health care. The economic crisis also has delayed Member Country compliance with financial obligations to international organizations.

Other features in the pattern of development, such as population growth and the massive expansion of major cities, have magnified serious service shortages, environmental pollution, unemployment, violence, insecurity, and poverty. The population of the Region is projected to increase by approximately 190 million by the year 2000 (160 million in Latin America and the Caribbean) to a total of 860 million people. The percentage of urban population in the countries of the Region, now 71%, will increase to76% by the end of the century. Much of this growth will occur in 15 cities, each of which already has four million or more inhabitants. At the same time, the ranks of those in social and eco-

nomic margins of society will continue to swell, and estimates say that those living in extreme poverty will reach one-third of the population in Latin American countries—about 140 million people.

Health Conditions

There is awareness in the Region of the particular significance of this moment in the evolution of societies, and of its consequences in the years to come. We are living through rapid changes that manifest themselves throughout all aspects of community life and which greatly affect health conditions. These changes must be understood if we are to attain the goal of health for all by the year 2000 with equity, effectiveness, efficiency, and participation of the people.

Both the population's structure and the pattern of diseases that affect it have undergone changes. In Latin America in particular, the percentage of adolescents and of the elderly in the total population is increasing drastically. These trends, coupled with rapid urbanization, have further taxed the existing capabilities of the health systems.

Within this context, three major problem groups emerge:

- youth, especially the 15 to 25 age group living in urban areas, whose leading cause of death is accidents, who are deeply involved with alcohol and drugs, who commonly face unwanted pregnancies, and who suffer a large toll from homicide and suicide;
- the urban poor, who suffer from high rates of malnutrition and violence, poor medical care for mothers and children, and illnesses associated with unsatisfactory water and sanitation services—in short, a group that falls prey to all the health problems of living on the margins of society; and
- the elderly, prone to chronic ailments that require more intense care, often leading to higher health care expenditures due in part to expensive technology.

Preventable deaths still constitute a considerable proportion of the mortality in the Region. Diarrheal diseases, acute respiratory infections, and diseases preventable by vaccination still show a considerably high incidence and mortality, particularly among children. In fact, in Latin America and the Caribbean, infectious diseases closely associated with malnutrition are directly or indirectly responsible for more than 50% of all deaths in children under five.

Malaria, which has persistently plagued the Region, shows no sign of abating. Even when the situation appears to stabilize, some countries still show steady increases, and in light of diminished national and international resources allocated to the problem, the outlook for eradication, or even for a reduction in overall incidence, is bleak.

Dengue, another tenacious vector-borne disease, also has steadily increased over the past 20 years—with no end in sight. A frightening prospect is the combination of a high frequency of dengue hemorrhagic fever with dengue shock syndrome, as already has occurred in Asia, with a consequent surge in hospitalizations and deaths.

Flavivirus infection also is beginning to receive more attention as a result of the arrival in the Americas of *Aedes albopictus*. This mosquito has been associated with many dengue epidemics in the Far East and is capable of transmitting all four forms of the virus. An even greater threat is that *Aedes albopictus* could also become a transmitter of yellow fever; the Region could then face widespread infestation by a hardy, adaptable species which carries not only dengue viruses between forest and city but could also introduce yellow fever into urban settlements.

There is growing concern in the Region regarding the increase in frequency of noninfectious diseases affecting the population. Perinatal disorders, accidents, the effects of violence, environmental problems, and chronic conditions such as cancer, cardiovascular diseases, cerebrovascular disorders, mental problems, and diabetes progressively

rise in prominence within the disease profiles of the countries of the Americas, sometimes supplanting infectious and parasitic diseases as leading causes of morbidity and mortality.

Food security remains an unmet goal for many of the Region's countries, and the ongoing drought in Central America has exacerbated the challenge this subregion faces. These agricultural problems, compounded by the overall economic crisis, have virtually halted all progress in reducing malnutrition. Studies show that low birthweight and poor nutritional status are crucial factors in increasing the potential for fatal consequences of otherwise controllable diseases. Vitamin A and iron deficiencies still are issues of great concern, but in Latin America, the fundamental problem of nutrition is directly linked to the problem of poverty.

Just as it simultaneously confronts diseases of underdevelopment and diseases of development, the Region faces the same double challenge in environmental issues. According to 1986 data, clean drinking water—the most fundamental element for sustaining human life—is unavailable to 30% of the population in 27 Latin American and Caribbean countries. In rural areas, more than half of the population has no easy access. Sewage and sanitation services are denied to nearly 40% of the Region's population. These basic environmental sanitation issues, which have been around for centuries, are now joined by new ones such as toxic waste disposal, pesticides, and other modern-day causes of environmental pollution.

The most important new health problem confronting the Americas is the acquired immunodeficiency syndrome (AIDS). The number of reported cases in the countries of the Region by the end of December 1987 was 56,368, approximately 74% of the world's reported cases. For the most part, those initially affected throughout the Region have been homosexual and bisexual men and, to varying degrees depending on the country, those infected through blood or blood products. In addition to these categories, in the United States of America intravenous drug users also have contributed significantly to spread the disease. The alarming increase of the disease among heterosexuals in some countries may bring about a much more rapid rate of transmission. In addition to its immeasurable toll in human suffering, AIDS uses up substantial medical resources in patient care, public education, and research. If current projections materialize, and those afflicted are cared for until they die, AIDS will greatly strain the already overburdened and underfunded health systems of the Region. Strengthening these health systems will become increasingly crucial for undertaking effective programs in AIDS treatment, control, and prevention.

The sheer magnitude of the numbers of people to be served by the health service systems is staggering. An estimated 270 million persons in Latin America and the Caribbean have access to health services; another 135 million are without formal care. Not only must the health care system extend coverage between now and the year 2000 to those on the margins of society, it must do so while incorporating the 160 million individuals who will be added to the population of Latin America and the Caribbean between now and the end of the century.

Vast population segments in most countries in the Americas remain without real access to health services; furthermore, the serious restrictions on resources available to the sector continue to widen these coverage gaps. This situation presents a major challenge to the organizational and managerial capacity of national health systems. PAHO/WHO maintains that, to mitigate the effects of the crisis, it will become crucial for the countries to make the most efficient possible use of their resources to promote and protect health, and that they also must simultaneously mobilize resources, both national and external, to enable health systems to meet the growing needs of the population.

The health sector faces great operating and management challenges, at times intensified by excessive centralization. In addition, use of

expensive and, on occasion, unwisely incorporated technology further skews the distribution of and access to health resources.

Besides insufficient resources for coping with the Region's health problems, most of the countries of the Americas also experience reductions in social sector investments and in current expenditures as a result of budget cuts. Member Countries continue to search for new ways to offset these severe limitations by strengthening their health system infrastructures in order to meet the needs of their people more effectively, by responding to priority health problems of their most vulnerable groups, and by mobilizing resources in new ways that include using those already available more efficiently.

Development of the Technical Cooperation Program during 1987

In response to this situation and based on the collective policies adopted by the global and regional Governing Bodies, the Organization has emphasized the prominent role to be played by health in the development process. Programming focused on a more precise definition of priorities, on needs expressed by Member Countries, and on innovative concepts of technical cooperation that set intermediate goals for transforming the health services and foster corresponding programs.

This year, in response to the XXII Pan American Conference's adoption of the "Orientation and Program Priorities for PAHO during the Quadrennium 1987-1990," the Organization began to shift the focus of its technical cooperation in order to help the countries transform their health systems. It had become clear that in order to meet rising health needs and to fulfill the requirements for equity, efficiency, and effectiveness implicit in the goal of health for all, health policies had to shift in such a way as to produce greater impact programs. Although this transformation will vary from country to country, each Government must—with support from the Organization—conduct a careful analysis of the ways and means to accomplish the required changes.

In the *development and strengthening of local health systems*, the Organization has identified an effective way to implement the needed transformation in the health systems of the Member Countries. This most promising approach will activate the primary care strategy adopted by the governments to attain the goal of health for all. This mechanism encourages more effective planning and management methods based on local needs and consistent with trends toward political, technical, and administrative decentralization of the sector which are already apparent in many countries of the Region. In addition, this approach should link all available resources within a given geographical area (hospitals, centers, health posts, and extrasectoral resources) and utilize them in a way that best fits local needs and circumstances.

Other noteworthy characteristics of local health systems refer to a shared responsibility with the population regarding health development at the local level. As long as the population and the territory to be served are clearly defined, the health services can be held accountable for their responses to local health needs, and the community's participation can be increased in promoting health and in providing services.

Based on these concepts, a series of strategic approaches that take into consideration each nation's governmental structure and the level of development of each country's health services are being developed for PAHO/WHO's course of action. Ultimately, these approaches will support institutional development in the countries.

Technical cooperation programming in the coming years should consider this strategic approach in conducting country analyses, in defining cooperation activities, and in allocating resources at the country and regional levels. Moreover, this programming should guide the

joint working relationship of the Organization with other technical cooperation and financing agencies.

Among special initiatives and programs that PAHO/WHO currently pursues is the commitment of the countries of the Americas to eradicate poliomyelitis before 1991. Negotiations to secure external financing have been finalized with the United Nations Children's Fund (UNICEF), the Inter-American Development Bank (IDB), the United States Agency for International Development (USAID), and Rotary International. National plans of action have already been implemented in several countries. The polio eradication campaign is an instrument to achieve the broader goals of the Expanded Program on Immunization and, even more, to support the development of the health services infrastructure.

The Organization and the countries have set ambitious goals in the effort to end the threat of urban rabies in the Americas, objectives which were approved and endorsed by the Ministers of Agriculture during the 1987 Inter-American Meeting, at Ministerial level, on Animal Health. The countries also have intensified activities to prevent and control foot-and-mouth disease and have set a goal for the disease's eradication by the year 2000.

Other special initiatives that received particular attention during the year included the regional plan of action on food safety that calls for the adoption of policies, strategies, and technologies by more than half the Member Countries by 1990; the International Drinking Water Supply and Sanitation Decade efforts to extend coverage, develop institutional infrastructures, and improve water quality for human consumption; the Emergency Preparedness and Disaster Relief Coordination activities, jointly carried out with other UN agencies and in collaboration both with governmental and nongovernmental organizations; the Women, Health, and Development Regional Program that deals with increasing the countries' interest and support for women's development as essential for achieving the goal of health for all by the year 2000, and with carrying out technical cooperation activities in prevention and control of perinatal disorders with special emphasis on risk approach and health services research aimed at evaluating maternal and child health services. New technological approaches have been developed and are being implemented in environmental health (worthy of note is a simplified device for water purification), maternal and child health, scientific and technical information dissemination, and other areas.

AIDS prevention and control efforts were emphasized. In addition to activities designed to consolidate epidemiological surveillance systems and to establish joint ventures with the United States National Institutes of Health to strengthen prevention, surveillance, and research activities, substantial progress was achieved in developing national plans of action and in implementing the Global Program on AIDS in the Region of the Americas.

The serious consequences of the economic crisis notwithstanding, PAHO/WHO continues to actively pursue an increase of health related knowledge as part of the development process. Studies to measure the impact of the crisis on the health status, the provision of health services, and health sector financing have been conducted in several countries. Technical cooperation was provided to conduct an economic and financial analysis of the health sector, health policy and development analyses, and to develop strategies and methods of health planning. PAHO/WHO also has promoted the development of health leaders as a way to improve health sector management and to bring about necessary transformations in the health services system.

In order to have a broad understanding of the relationship between health and the constitutional ordinance of society in each of the PAHO Member Countries, a major study, *The Right to Health in the Americas: A Comparative Constitutional Study*, was completed in 1987 and will be published in 1988. The work comprises original contributions from 31 recognized scholars, who analyze, from the point of view of the right to health, the constitutional history, the current Constitution, the

national health legislation, and the relationship of the right to health with other selected social rights in their countries. A chapter with an overall analysis was done by the Organization's Office of Legal Affairs. This study will greatly contribute to the understanding of the relationship between health and constitutional rights in the Member Countries.

Management of Technical Cooperation

The new direction charted for the Organization by the XXII Pan American Sanitary Conference (1986) calls for several changes in the formulation of cooperation activities, both within program budgets and in technical and administrative operation plans. It also requires that PAHO/WHO's overall policy for technical cooperation, whose basic premise is to maximize benefits from international technical cooperation in the countries while rationalizing as much as possible the use of institutional resources, be applied effectively. The Organization is improving its efficiency, enabling it to mobilize resources that will help Member Governments meet the growing demands of the health sector.

Special consideration was given to refining the American Region Planning, Programming, and Evaluation System (AMPES) to tailor it to prevailing economic, political, and social conditions and to have it respond to health needs and priorities established for PAHO/WHO activities in the countries. Consequently, the effort to integrate planning, programming, budgeting, and evaluation, which began at the end of 1985 with the annual operating program budget (APB), has continued. Given that the APB serves as the main tool for planning the Organization's program activities and for allocating its resources, steps have been taken during recent years to improve the budgeting process for regional and country programs. So that the APB can function as a management tool that considers the orientation of priority activities in the allocation of resources, several policies and guidelines have been issued for preparing the annual operating program budget. This process intends to turn the APB into a tool for allocating resources available throughout the Organization to those cooperation projects with strategic impact, rather than simply disbursing obligatory small amounts of funding to many activities on an annual basis. The APB review also deserves special mention, since it represents both a critical stage in the operational decision-making process that allocates resources to the Organization's programs and administration as well as a key step in the coordination of the many program components within an overall program of technical cooperation. These analytical and decision-making functions ensure that all pertinent levels of the Organization will be able to subsequently monitor the delivery of technical cooperation according to the mandates of the Governing Bodies.

For the biennial program budget (BPB), which provides a foundation for short-term planning of the Organization's activities, similar steps to those described for the APB also have been taken. In the formulation of both the proposed PAHO/WHO regular program budget for 1988-1989 and the provisional draft of the program budget for 1990-1991, extensive efforts were made to ensure that the Organization's technical cooperation addresses global and regional priorities. The 1988-1989 biennial program budget, ratified in September by the XXXII Meeting of PAHO's Directing Council, incorporated the concern of focusing the Organization's activities along significant priorities and of rationalizing institutional management.

Another aspect of AMPES that is receiving increased attention is the monitoring and evaluation of technical cooperation programs. The annual evaluations of country and regional programs, a part of the planning cycle, are designed to facilitate analysis and follow-up of program execution and to provide the basis for redirecting action toward identified problems as necessary. This approach has been developed in conjunction with adminis-

trative information systems in both PAHO/WHO Country Offices and at Headquarters. Utilizing data generated by AMPES as a baseline, the necessary information for decision making has been defined and indicators have been identified to conduct an evaluative analysis of the efficiency and effectiveness of the Organization's technical cooperation.

The biennial or triennial joint meetings for the analysis and evaluation of PAHO/WHO's technical cooperation at the country level also deserve particular mention. They constitute a special opportunity within the ongoing dialogue between Headquarters and the countries, which serves not only to establish medium-term commitments and reformulate technical cooperation programs, but also to evaluate the efficiency and effectiveness of activities as well as their impact on national health development. By the end of 1987, 13 joint reviews had been conducted.

During 1987, PAHO/WHO continued supporting efforts to mobilize external financing for health. The flow of external financing to the Region during 1987 was estimated at $US802 million. Due to the national fluctuation of loan approvals within the World Bank and the Inter-American Development Bank, the total flow exceeds that of 1985 ($US758 million) but is below that of 1986 ($US1,298 million).

Principal sources of financing were the Inter-American Development Bank, the World Bank, the Caribbean Development Bank, the European Community, and the Governments of Canada, France, Federal Republic of Germany, Japan, Netherlands, Norway, Sweden, the United Kingdom, and the United States of America. In addition to WHO, United Nations contributors included the United Nations Development Program (UNDP), United Nations Fund for Population Activities (UNFPA), and UNICEF. Nongovernmental sources included the W.K. Kellogg Foundation, the Carnegie Corporation of New York, the Rockefeller Foundation, and Rotary International.

In support of special initiatives in Central America and the Caribbean, the Organization constituted delegations of national and PAHO/WHO officials to seek potential financial sources in North America and Europe. The Carnegie Corporation of New York convened a special meeting to present the Caribbean Cooperation in Health initiative to foundation representatives. These visits and meetings constitute the beginning of the mobilization process, which will continue through national and subregional efforts to develop and negotiate projects.

Recognizing that to mobilize finances effectively a balance must be struck between promotion of financial supply and actual country demand as stated in project documents, PAHO/WHO has continued to sponsor meetings and seminars on project development and financial mobilization, such as one in Caracas for the Andean countries, one in Saint Lucia for two countries of the Eastern Caribbean, and one in Georgetown, Guyana. Given the importance of training in the countries themselves, the Organization plans to continue offering support to Member Countries as they request it. As part of its country and regional support, PAHO/WHO continued to issue updated guidelines on external financial mobilization which offer a strategy for attracting funds and also include profiles of major official and nongovernmental sources currently offering cooperation in the Region.

To strengthen the countries' efforts to identify, plan, and carry out their own cooperative activities, PAHO/WHO continued to support and encourage joint activities within the context of Technical Cooperation Among Countries (TCC). TCC is one of the main mechanisms operating in the subregional initiatives and in health activities in the border areas. Similarly, PAHO/WHO regional programs, through their networks of Centers and Focal Points, have increasingly fostered the use of TCC as a supplement to their operations, such as in maternal and child health, health manpower development, and veterinary public health programs.

It should be stated, however, that implementing the Organization's basic mission is not simple. It implies searching for and finding ef-

fective means to bring about profound institutional changes both in procedures and in program content, as well as establishing links with technical cooperation recipients in the countries. This great political, technical, and administrative challenge must be addressed to consolidate the progress gained so far.

Outlook for the Future

The challenge set forth by the Governing Bodies in the orientation and program priorities for the current quadrennium remains before us. Advances toward the goal of health for all will largely depend on the sort of national and regional response to those priorities. Unfortunately, as the economic crisis lingers throughout the eighties, health objectives become more elusive. And until the Region as a whole grapples with this crisis well enough to permit a sustained, equitable growth, Member Countries will remain severely handicapped in their struggle to attain our shared health goals. But to do this requires more than fiscal and monetary adjustment—it requires a different concept of development as well as a clearer consideration of the social effects of national economic policies and programs, particularly on the most vulnerable groups of society.

The health sector can and should encourage this process and participate in it by advocacy and example. Sectoral integration, intersectoral coordination, and setting specific priorities are essential; however, the ultimate test will be whether progress has been made in transforming national health systems by reordering health policies and health service structure. A more serious and broad-based movement to decentralize decision-making and the local health service administration with more community participation still needs to come about. Without this, resources for and accountability of local health services and the capability to promote greater efficiency and equity in the overall health system will be in doubt. While the efforts the countries have undertaken in this direction are impressive, much remains to be done. PAHO/WHO has set as its highest priority assisting its Member Countries reach this goal.

II. Health Systems Infrastructure

During 1987, technical cooperation in the Health Systems Infrastructure Area was framed by the guidelines established at the XXII Pan American Sanitary Conference through Resolution XXI, "Orientation and Program Priorities for PAHO during the Quadrennium 1987-1990." The strengthening of the conceptualization and methodology for developing activities in each component aimed at transforming the health service systems was characterized by intense participation from national and Regional technical and institutional resources.

The coordination of efforts among the area's program units facilitated the progress of cooperation activities that focused on strategies for decentralization and for strengthening local health systems, and served to speed progress on issues pertaining to established priorities. The most significant accomplishments were in the following fields:

- Research on health profiles, the economic crisis' impact on the health sector, on health services, the use of health personnel, the labor market, and technological development in health began to yield substantial and useful information to more clearly determine needed changes for programs and activities aimed at identifying health problems and administering the human and financial resources required for finding alternative solutions.
- Initiatives that promote leadership in health and advance training in public health, health administration, and epidemiology have led to, as part of an effort of mutual cooperation and exchange of experience that offers possibilities of attaining extensive growth throughout the Region, an expansion of the network of institutions and programs that train staff in these fields.
- A renewed momentum to improve administrative capabilities in the health services, with emphasis on the central leadership and local operating levels, has helped spur the analysis and adjustment of approaches and methods for the planning, administration, and evaluation of services through specific activities in all countries of the Region.
- The introduction of new technology for managing technical and scientific information and the development of national documentation centers that work closely with one another and with the relevant resources of the Organization marked an important step in improving information dissemination and use.

Despite the fact that, to a greater or lesser degree, the economic crisis continues to affect the overall availability of resources for the operation of health systems, in all the countries 1987 was characterized by intensive activity aimed at improving the operational capability of institutions in the sector.

Health Situation and Trend Assessment

The transformations that currently buffet the Region of the Americas affect all aspects of society and will have far-reaching repercussions on the health situation, its problems, and resources. Understanding this process and adjusting health sector actions, and society itself, accordingly is an essential requirement for accomplishing the goals that governments have set for themselves, including the goal of Health for All by the Year 2000.

Undoubtedly, the most important epidemiological phenomenon confronting the devel-

oping countries of the Region is the rapidly changing health profile of their populations. While infectious diseases persist in most countries, noninfectious diseases and chronic conditions affecting rapidly aging populations are gaining importance. In addition, accidents, occupational illness and injuries, and the effects of widespread environmental deterioration are also becoming more prevalent. This epidemiological mosaic forces most countries to simultaneously address health problems associated with traditional infectious diseases as well as those stemming from chronic diseases and the environment. The emergence of the human immunodeficiency virus and the acquired immunodeficiency syndrome (AIDS) adds major stress to an already difficult situation.

In response to this complex health situation, the countries must define priorities, distribute available resources based on target population needs, and improve the evaluation of the outcome of public health programs and services. Epidemiology's concepts and methods have an important role to play in this process, both in disease prevention and surveillance and in evaluating and analyzing the impact of public health sector activities.

Participants at a 1983 Buenos Aires seminar on the uses and perspectives of epidemiology recommended that the practice of epidemiology be reoriented to provide the most knowledge possible of the health situation, assuring improved prevention and evaluating health care services. In response, PAHO/WHO developed specific strategies to expand the practice of epidemiology and improve analytical capabilities in Member Countries. These strategies included epidemiological surveillance and dissemination of technical information on epidemiology and statistics; education and training in epidemiology and statistics; promotion of epidemiological and statistical research in health situation analysis; and promotion of the utilization of epidemiology and statistics for decision making within health care delivery services at central and decentralized levels.

Since 1984 most countries in the Region have organized national meetings to analyze the characteristics of the practice of epidemiology at different levels in the health care sector. Throughout this year, the Organization continued to support these national meetings and conducted an ongoing review of technical cooperation strategies aimed at emphasizing promotion of research, dissemination of information, reorientation of training, and broadening of the practice of epidemiology in the countries. PAHO/WHO staff traveled to 22 countries to provide direct technical collaboration in epidemiology and statistics. The Caribbean Epidemiology Center (CAREC) provided coverage for the 19 English-speaking Caribbean countries.

In response to the growing demand for technological information in the countries, PAHO/WHO increased the dissemination of epidemiological and statistical information. In 1986, as a first step in the Organization's project to collect, analyze, organize, and distribute bibliographical information on epidemiology and related material, the book, *The Challenge of Epidemiology, Issues and Selected Readings*, to be published early in 1988, went into production. The Organization also continued to publish the *Epidemiological Bulletin*, an important tool for disseminating information on epidemiology and for promoting the need for its broader application.

Efforts in disease surveillance according to the International Health Regulations continued, and the Organization periodically published these data in the *Epidemiological Bulletin*. In addition, specific data bases on mortality and population, fundamental components of Region-wide surveillance of health conditions in the Americas, were maintained.

At all national meetings on epidemiology, the issue of training was debated intensely. In response to this, PAHO/WHO used the First National Meeting on Training and Epidemiology, held in Venezuela in 1985, as a model to promote similar events in other countries. Two events involving schools of public health, national epidemiology commissions, and specialized institutes are worthy of note. The first, a series of meetings held in several Latin

American schools of public health and jointly sponsored by the Latin American and Caribbean Association for Education in Public Health (ALAESP), the American Association of Schools of Public Health (ASPH), PAHO/WHO, and the W.K. Kellogg Foundation, was designed to explore new ways to improve institutional collaboration among the Region's associations of schools of public health and to strengthen teaching and research capabilities. One of the meetings, held in Venezuela in October, drew participants from various institutions, including schools of public health of the United States of America, and dealt with improving national health care information systems and with developing epidemiology, including the need to strengthen the discipline in schools of public health. The meeting recommended projects to strengthen both the institutional capacity in epidemiology and academic teaching and research capabilities.

The second event, a meeting to discuss training in epidemiology, held in Taxco, Mexico, in November, was jointly organized by ALAESP, ASPH, the United States' Centers for Disease Control, and PAHO/WHO. This meeting, attended by deans and directors of many institutions and schools, as well as practicing epidemiologists and chiefs of departments of epidemiology, served as the basis for strengthening the teaching of epidemiology and statistics throughout the Region, one of the Organization's major priorities.

Among research activities developed within the "health profiles" priority area and designed to obtain the best possible knowledge of the health situation, the Organization pursued a strategy emphasizing the analysis and utilization of mortality data available in the countries. Individual research projects were designed to systematize procedures traditionally used to analyze mortality figures and to gain experience with some infrequently used procedures, such as years of life lost prematurely. PAHO/WHO Headquarters and field personnel worked with national researchers to carry out the studies. Of the 11 projects begun in 1985, those in Argentina, Brazil, Cuba, Paraguay, Suriname, and Uruguay were completed this year; projects in Chile, Mexico, and Venezuela were well established; and efforts in Bolivia and Colombia were initiated. In at least two countries, Argentina and Brazil, results were discussed in the Ministries of Health and used to stimulate analysis of the health situation at decentralized levels.

To fully promote epidemiology and statistics, strategies must be designed to improve the quality and coherence of available data at national and international levels, and efforts should be made to improve the timeliness of data used in health care planning and evaluation. To strengthen the processing and utilization of data within the context of decentralization of health care services, PAHO/WHO worked with WHO Collaborating Centers for the International Classification of Diseases (ICD) in Brazil and Venezuela and with many national statistics units to develop Regional contributions for the preparation of the 10th Revision of the ICD. By year's end, research projects had been designed in Argentina, Mexico, and Uruguay to compare the currently used 9th Revision with a draft of the 10th Revision.

PAHO/WHO field epidemiologists carried out many activities to promote the utilization of epidemiology. In Honduras, improvements on the use, at a decentralized level, of epidemiological indicators to evaluate the impact of health activities were undertaken. In Mexico, educational institutions that train health personnel carried out a study of the practice of epidemiology to determine necessary adjustments in educational curricula to prepare personnel for the future needs of the country. In Ecuador, the Second National Meeting of Epidemiology proposed national research priorities and a national coordinating committee for epidemiological research. In Haiti, a unique in-service training program for practical preparation of epidemiologists assigned to the country's four sanitary regions was successfully completed. In Panama, a national workshop on the practice of epidemiology was held to evaluate progress of the national epidemiology program. In Bolivia, PAHO/WHO staff continued working with epidemiologists from

the National Epidemiology Administration to analyze the health situation and trends.

In the future, emphasis will be placed on examining and using the latest technology to disseminate as much technical information as possible to the countries; strengthening the health situation analysis, emphasizing mortality and morbidity statistics in the countries, and developing major national projects for extrabudgetary funding; continuing to coordinate, at Headquarters and in the field, ongoing analyses of the health situation in the Region, including the national evaluation of "health for all by the year 2000" strategies, to prepare for the next publication of *Health Conditions in the Americas;* and developing training in epidemiology and statistics at national levels.

Health Policies Development

PAHO/WHO's cooperation in this field was steered by the 1987-1990 program priorities for the quadrennium that deal with the relationship between health and development, the transformation of health systems, the economics and financing of health, and the technological development in health. The objective is to provide support to the countries' efforts in the analysis, execution, and evaluation of overall health policies, emphasizing the development of approaches for and ways to address the following issues: social forces that influence health policies and the political process relating to the sector; the formulation, implementation, and evaluation of plans, programs, and projects; institutional organization and legislation; economics and financing; and technological development in health.

These lines of action emerged from the identification of several still unsolved problems dealing with strategies for achieving health for all by the year 2000, including an inadequate incorporation of plans and programs for health sector development within the broader context of economic and social development plans, and constraints that hinder coordination of activities conducted by institutions in the sector. Moreover, as the structural crisis of the Region's economies deepened as a result of the external debt, the governments renewed their search for new sources and ways to finance health services and for more efficient management of resources allocated to the sector.

From another point of view, the extraordinary technological development in health and medical care has sparked an interest in developing appropriate policies and tools to guide the incorporation and use of new technology, ensuring that most of the population has access to it and minimizing waste and possible adverse effects from over- or misuse.

In policy analysis, the seminar on formulation, implementation, and evaluation of policies conducted jointly with the Latin American Center for Development Administration (CLAD) in San José, Costa Rica, and the Inter-American course on social and health policy and planning conducted with the Center for Economic and Social Development Research (CIDES) of the Organization of American States (OAS) in Buenos Aires, provided a theoretical and methodological foundation for action in this field. These events also offered a way to identify and train some 60 national professionals who are likely to play a leading role in activities stemming from both events.

Considerable attention was devoted to planning, both in terms of developing new approaches and in project management. In an effort to identify activities that could narrow the gap between the current situation and the goal for the year 2000, the dialogue among health administrators, epidemiologists, economists, and planners intensified, leading to a proposal for action-oriented research scheduled to begin in 1988. This proposal has also stimulated a critical review of the planning curricula for the training of health personnel in the Region, to be conducted as a joint activity with the Latin American and Caribbean Institute for Economic and Social Planning (ILPES).

Based on several country experiences and on PAHO/WHO's background in investment projects in health and sanitation, a modular

training program in project management with relevant audiovisual materials, reference texts, methodological tools, and computer-support programs is being prepared. Six intercountry courses based on this program are scheduled for 1988. Further technical support was provided to prepare and execute health-development projects financed by IDB, the World Bank, and UNDP in Belize, Brazil, Guyana, Jamaica, Peru, Suriname, and Trinidad and Tobago.

Intensive cooperation was provided to design, implement, and prepare health management information systems. When applied to the regionalization and decentralization of health systems, these approaches have become progressively more useful as a result of advances in health information procedures. Moreover, the Organization's experience in this field should yield increasing benefits in its cooperation with the countries, which still encounter many problems in selecting and using the information-management technologies that best fit their respective circumstances.

Institutional organization within the sector was strengthened by redistributing responsibilities in the cooperation with social security institutions. PAHO's Directing Council, at its XXXII Meeting (1987), mandated that efforts to strengthen this cooperation consider the aims of achieving greater coordination and of managing the sector in a way that more closely fits necessary changes in health systems. A documentation system for health legislation, scheduled to begin functioning next year, began to be organized to support the countries and other PAHO/WHO programs.

In the field of health economics and financing, a course conducted in Brasilia in cooperation with the World Bank's Economic Development Institute was attended by 30 participants from Argentina, Brazil, Colombia, Ecuador, and Uruguay. The course provided a way to define PAHO/WHO's future technical cooperation in this field and to identify prospective multiplier agents for follow-up activities to be conducted from 1988 on. In addition, given the Region's interest in the economics of health, a special issue of the *Boletín de la Oficina Sanitaria Panamericana* featuring several original articles on the subject was prepared.

In the technological-development area, the relevant project was redirected according to a new approach better suited to the policies in this field. According to this approach, research on such matters as the production of equipment and critical inputs, technology acquisition through investment projects and central purchasing authority, and the development of technology management, including the design of appropriate information systems, assumes a leading role.

Research activities promoted and supported by the Organization gathered considerable momentum, both in economics and financing and in health technology. This growth was manifested in the number of projects, participating countries, topics covered, and resources allocated. One of these studies, a joint activity of PAHO/WHO and IDB, seeks to examine the effects of the current economic crisis on the health services in Brazil, Ecuador, Honduras, Mexico, and Uruguay; another, conducted in cooperation with the University of the West Indies and CARICOM, examines the effect of adjustment policies on health conditions in the Caribbean.

The nature of this cooperation within the broad field of health-policy development has involved a concerted effort to coordinate this work with work conducted by the Organization's other units, as well as establishing closer links with national officials in the implementation of work programs. Especially noteworthy was the Organization's 1987 experiences in promoting and executing technical cooperation activities, conducted in close collaboration with other agencies and institutions including CLAD, the OAS, the World Bank, IDB, and ILPES, aimed at developing research and training personnel.

Health Services Development

To encourage closer ties between PAHO/WHO's cooperation and the redirecting and

reorganizing of national health systems, activities and resources allocated to essential drugs were incorporated into the Program of Health Services Development, thus completing the reorganization of the Health Systems Infrastructure Area begun in 1986.

Decentralization and Local Health Systems

Cooperation for the development of health services was primarily directed to supporting decentralization and the strengthening of local health systems (SILOS).

Extensive consultations among several units from the Health Programs Area and the Health Systems Infrastructure Area produced a document and a work program to facilitate interprogram activities to benefit SILOS. Based on approaches that have emerged from interprogram operations, varied activities for overall promotion were carried out. Some highlights are summarized below:

- At a working meeting held in Buenos Aires, several national experiences in local health systems development were examined, emphasizing participation of hospitals in the service network. The meeting was attended by 50 hospital directors from Argentina, Bolivia, Brazil, Colombia, Cuba, Guatemala, Mexico, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela.
- A group of experts, including specialists from Argentina, Colombia, and Cuba, met in Washington, D.C., and prepared a reference document on social participation and local health service development.
- A workshop on health facilities maintenance was conducted in Havana for 30 participants from Argentina, Bolivia, Brazil, Cuba, Ecuador, Guatemala, Nicaragua, Peru, Uruguay, and Venezuela.
- A group of experts from Argentina, Brazil, Canada, Colombia, and Mexico met in Washington, D.C., to discuss promoting health service research in support of local health services. Based on the group's recommendations, two workshops were conducted in Mexico and Buenos Aires where 30 professionals from the health services participated; 15 research protocols on this subject were developed.
- An instrument for systematizing information on decentralization was developed in cooperation with WHO and applied in Brazil, Guatemala, and Mexico.
- With technical and financial support from the W.K. Kellogg Foundation, an assessment of national experiences in applying integrated health service models was undertaken in Argentina, Brazil, and Colombia.

Highlights of PAHO/WHO's technical cooperation in support of national efforts to reorganize health service systems are summarized below.

In Bolivia, cooperation was given to the design of a model for restructuring regional units as a means to pursue decentralization and the development of local health services.

In Brazil, PAHO/WHO continued to help develop policies determined by the proposed reforms for integrated health sector development, coordination with social security, and decentralization.

In Colombia, strategies to consolidate the national health system and develop health services at the municipal level were supported.

In Cuba, cooperation was given to an assessment of the impact of incorporating family physicians into the structure and of the operation of the health sector.

In El Salvador, intensive work was carried out with bilateral cooperation agencies from France, the Federal Republic of Germany, Italy, the Netherlands, and the European Community to define a health service development plan for the San Salvador Metropolitan Area which will serve to guide the development of proposals for the rehabilitation and reconstruction of health units affected by the 1986 earthquake.

In Peru, the Organization cooperated with the Departmental Committees for Functional Integration in planning, decentralization, and information and computation systems.

In Uruguay, further collaboration was provided to strengthen the sector's leadership capacity and to train hospital administration staff.

In Central America and Panama, a project to develop administrative capabilities in the health services was further advanced with technical and financial support from UNDP. Activities focused on local programming, development of administrative information systems, sectoral leadership and decentralization, administrative decentralization, and training. Each country's experience is shared extensively with other participating countries.

In the English-speaking Caribbean countries, an initial proposal was formulated for the institutional development of the Ministries of Health, with emphasis on planning, budgetary programming, and development of human resources in health administration. In addition, the opening of the Eric Williams Medical Complex in Trinidad and Tobago and the institutional development of the Queen Elizabeth Hospital in Barbados received further support.

Regarding the strengthening of installed capacity, PAHO/WHO collaborated in formulating projects for rehabilitation, expansion, construction, and outfitting of health facilities in Argentina, Barbados, Bolivia, Colombia, Guyana, Haiti, Jamaica, Mexico, Panama, Peru, Saint Lucia, Suriname, and Trinidad and Tobago. Many of these projects were later submitted to international financing agencies such as the World Bank and the Inter-American Development Bank; others were in the early stages of implementation.

In coordination with the Center for Research on Development of Health Facilities at the University of Buenos Aires, Colombia's National Hospital Fund, and the Campinas (Brazil) State University Biomedical Engineering Center, further advances were made in preparing technical guides for developing health facilities. (These guides include information on formulating, programming, designing, equipping, and construction of such facilities, as well as their operation, maintenance, and project execution.)

Central America and Panama approved the subregional project, carried out in cooperation with the Government of the Netherlands, to strengthen and develop engineering and maintenance services in health facilities. The first phase of the project, to begin in 1988, is scheduled for 18 months and has a budget of US$3,500,000 for training national technicians, organizing and outfitting national workshops, and replacing essential equipment.

With PAHO/WHO support, national projects designed to maintain facilities and equipment continued in Belize, Costa Rica, Guatemala, Nicaragua, and Panama.

As part of the Andean Cooperation in Health effort, a study on maintenance needs was conducted, which will serve as the basis for formulating a subregional cooperation project in this field.

In health services organization, the development of information systems was supported further. A document to develop a records data base for use in hospitals and other health facilities was prepared for all countries of the Region. In Argentina, the Bahamas, Bolivia, Cuba, the Dominican Republic, El Salvador, Mexico, Peru, and Trinidad and Tobago, PAHO/WHO cooperated to reorganize medical records. In human resource development, the Organization helped conduct two six-month courses, one in Ecuador and one in Honduras, on medical records and health statistics; a seminar in Trinidad and Tobago; and a program to train medical-records personnel to support the decentralization process in Mexico. A handbook of guidelines for developing medical and health records which could be applied to local establishments and to the central levels was completed, as were four self-help modules on organizing specific areas in medical records and health-statistics departments.

Given the important role played by nursing staff in health care delivery, technical cooperation in this field aimed at improving management capabilities of nurses that work in multidisciplinary teams at all levels of the health systems; to this end, activities were carried out in Bolivia, Brazil, Chile, Costa Rica, the Do-

minican Republic, Ecuador, El Salvador, Guatemala, Paraguay, Peru, and Uruguay.

In Brazil, an assessment was made of the nursing situation in the hospital services of the National Medical Care and Social Welfare Institute in the states of Bahia, Rio de Janeiro, Fortaleza, and São Paulo.

The use and training of auxiliary nursing personnel to contribute to the development of health services were examined at a regional meeting in Ecuador attended by nurses in service and teaching nurses from Brazil, Chile, Colombia, Costa Rica, Peru, and Uruguay.

PAHO/WHO collaborated in studies on the status of nursing in Ecuador, Guatemala, and Paraguay; in developing a subregional refresher course on comprehensive cancer-patient care in the hospital and the community held in Paraguay with the participation of nurses from Bolivia, Brazil, Chile, Paraguay, and Uruguay; and in preparing a manual for comprehensive oncological care.

In Chile, a Regional-level workshop on evaluation of the supervisory process and another on the role of the nurse in the care of the elderly were conducted, and a meeting was held to evaluate the process of integrating service and teaching staff as a way to improve the quality of care.

In collaboration with the Pan American Health and Education Foundation (PAHEF), the "Guía de Contenido Educacional de un Program de Educación Continua sobre Gerencia para Personal de Enfermería" ("Guide to the Educational Contents of a Continuing Education Program on Management for Nursing Staff") and the "Manual de Descripción de Puestos para Personal de Enfermería del Caribe" ("Position Description Manual for Nursing Personnel in the Caribbean") were revised and distributed. Both publications were used in courses and workshops in Guyana, the British Virgin Islands, St. Kitts and Nevis, and St. Vincent and the Grenadines.

To establish systems for assessing the quality of nursing staff, further advisory and training assistance was given to groups of nurses in Anguilla, Barbados, Guyana, Jamaica, Montserrat, and Trinidad and Tobago.

Laboratory and Radiology Services

In laboratory services, the Organization focused on personnel training and in a collaborative effort with the Oswaldo Cruz Foundation and the Adolfo Lutz Institute in Brazil, the General Management for Biologicals and Reagents in Mexico, the Institute of Public Health in Chile, the National Institute of Oncology and Radiology and the National Institute of Endocrinology in Cuba, and the Polychaco Foundation in Argentina provide reagents. Laboratory services in all the countries of the Region were supported in the diagnosis of Acquired Immune Deficiency Syndrome (AIDS), particularly in staff training in laboratory procedures for identifying the HIV virus. Support for radiology services continued to be extended in the control of ionizing radiations and the determination of appropriate radiation levels based on the use of simplified radiation equipment. Initial contacts were made with Brazilian industrial firms to explore the production of such equipment in the Region. The Organization cooperated with the Government of Venezuela in diagnostic studies on food contamination, and in Mexico a theoretical and practical course on prevention and treatment of radiation contamination accidents was conducted. Brazil's contamination accident led to cooperation with WHO technical staff, and sparked a deep concern in the Region for taking the utmost precautions with these potential contaminants.

Essential Drugs and Vaccines

The essential drugs program continues to be a priority in PAHO/WHO technical cooperation. The year's leading activities under this program are summarized below.

In Costa Rica, programs and materials that can be applied throughout the Region were

prepared; in Guatemala, activities focused on community education, and support also was given to the Sololá project; and in Honduras a program to develop pharmaceutical services was begun at the hospital school. The Essential Drug Revolving Fund for Central America and Panama, which completed its first cycle of joint purchases for the countries of the Isthmus, proved its usefulness by achieving significant savings in procuring essential drugs. Technical cooperation was begun in the Andean area countries to establish national pharmaceutical information centers, to formulate policies, and to organize national programs for essential drugs. Support was given to the National Institute for Quality Control in Health in Brazil and to the National Pharmacology and Nutrition Institute in Argentina. Cooperation also was extended to several countries in biologicals production and quality control, especially regarding vaccines included in the Expanded Program on Immunization and other biologicals produced in the Region, including yellow fever vaccine, antitoxin sera, and human blood derivatives.

PAHO/WHO cooperated with the Rockefeller Foundation in a feasibility study to establish international centers to prepare and utilize vaccines to fight diseases of importance to the Region. In regard to blood banks, advisory services were expanded, particularly in terms of controlling the transmission of AIDS and hepatitis B, in cooperation with the British Overseas Development Agency (United Kingdom), and in training of blood-bank technicians in the Caribbean. The Organization promoted the participation of the Region's blood banks in the international training program of the American Association of Blood Banks.

Health Promotion, Education, and Community Participation

The main thrust of this project encompassed the development, implementation, and evaluation of health promotion, education, and community development programs. PAHO/WHO's technical cooperation included activities in appropriate use of essential drugs, maternal and child health, environmental health, veterinary public health, health of the adult, health education for schoolchildren, and training of health personnel in educational methodologies which were carried out in Argentina, Brazil, Chile, Costa Rica, the Dominican Republic, the Eastern Caribbean, El Salvador, Guatemala, Honduras, Mexico, Peru, and Venezuela. National and international meetings, seminars, and courses on health promotion and education were held, and for the first time an international charter for health promotion was developed. In the area of training and continuing education of health personnel, the Organization produced publications, reference documents, working documents, guides, manuals, and audiovisual materials. Basic research also was conducted to define and apply the most appropriate functions and skills for health personnel in health promotion, education, and community development. Community participation, as a basic target for the development of local health systems, also received special attention. A Regional collaborative program that would work with the decentralization process and local health systems was defined in most of the countries of the Region.

Oral Health

During the year, emphasis was placed on implementing national programs for dental caries prevention; developing the capability to incorporate oral health within local health systems concepts and programs; establishing mechanisms to collect and transfer information; and promoting inter-country and subregional collaboration. Notable activities were the national implementation of salt fluoridation in Costa Rica and Jamaica; the joint development of the center for dental bibliographic information in Buenos Aires with the Argentine Dental Association, and the establishment of links with BIREME and some Bra-

zilian universities; the development of a proposed inter-country Collaborating Center in oral health within the WHO network and a dental epidemiology study in Ecuador; and the incorporation of oral health activities within the program developed in conjunction with the Organization's Regional activities.

Technical collaboration was provided to 22 countries, and integrated oral health programs coordinated with the educational and health delivery sectors were initiated in El Salvador and Uruguay. The World Dental Congress of the International Dental Federation (FDI) was held in Buenos Aires in October; 5000 dentists from throughout the world and dental officers from 20 countries of the Americas participated. Presided over by the first Latin American president of FDI, the Congress included a special program for dental health officials at the ministerial level.

The second meeting of the PALTEX advisory group in oral health took place in March, also in Buenos Aires, and expanded the range of books, manuals, and instruments to be offered to dental education institutions through this program in the future. Technical collaboration was provided to El Salvador, Spain, and Uruguay for redesigning the dental curriculum, and innovative dental services were begun in Argentina, Mexico, Trinidad and Tobago, Uruguay, and Venezuela.

A meeting held in Venezuela in September aimed at identifying research capabilities and needs in oral health; 12 countries of the Region participated. The Organization continued to collaborate with the nongovernmental sector. Two working groups, one to study the impact of current tariff classifications and import practices on dental products used in primary care, the other to evaluate teaching-with-service programs, were jointly started with FDI and the Latin American Dental Federation (FOLA).

PAHO/WHO collaborated in the development of human resources in dental health with the two associations of dental schools in the Region—the Organization of Faculties, Schools, and Departments of Dentistry/ Union of Universities of Latin America (OFEDO/UDUAL) and the Latin American Association of Dental Schools (ALAFO)—as well as with the W.K. Kellogg Foundation and the Latin American Program for Development of Dental Education (PROLADEO). Another collaborative activity with the Kellogg Foundation related to the fluoridation of salt in Costa Rica, Mexico, and Peru. The first vehicles for use in dental work, provided by the Dental Association of the Netherlands and PAHO/WHO to extend care coverage, were put into operation in Chile, Colombia, and Nicaragua.

Documents were produced on salt fluoridation and oral health technology, and the first audiovisual materials in Spanish were prepared in conjunction with the Veterans Administration of the United States of America and the Latin American Institute for Communication and Educational Sciences of Mexico.

Human Resource Development

As a result of changes begun in 1986 regarding the Organization's program priorities, the Human Resource Development Program was restructured along three major components: coordination and policies, administration of health personnel, and training of health personnel. This adjustment reflects the main features of the process to develop the sector's labor force in most countries of the Region, among them the trend toward tighter links between training models and health service requirements, emphasizing decentralization of health systems and strengthening of capabilities for leadership in health.

Policy and Coordination

Through its Human Resource Development Program, the Organization coordinates its work with many other agencies, including the Latin American Associations of Social Medicine (ALAMES), of Faculties and Schools of Medicine (ALAFEM), of Public

Health Education (ALAESP), of Faculties, Schools and Departments of Dentistry (OFEDO) and of Faculties and Schools of Nursing (ALADEFE) in addition to the Union of Latin American Universities (UDUAL), the Association of Schools of Public Health in the United States (ASPH), the Pan American Federation of Associations of Faculties and Schools of Medicine (FEPAFEM) and various collaborative centers such as the University of Illinois at Chicago, the University of Pennsylvania, the Meharry School of Medicine in Nashville, Tennessee, and the Galveston campus of the University of Texas. In this context, during the year the Organization supported 30 scientific or technical meetings attended by 375 professionals from different fields. A notable example was the Conference on Training in Epidemiology, cosponsored by ALAESP, where participants agreed on the need to redirect the concepts and use of epidemiology as a tool to develop health services.

Based on the conclusions of the Technical Discussions of the 37th World Health Assembly which dealt with the university and health for all, a dialogue with selected university groups began, aiming at incorporating the Region's universities into the effort to attain the goal of health for all by the year 2000. An agreement was reached that lays the groundwork for a cooperative program that seeks to identify interdisciplinary nuclei in countries of the Region in order to identify innovative ways to train personnel according to quadrennial priorities.

Efforts in human resource development policies focused on promoting research on the health labor force, with specific projects under way in Argentina, Brazil, Ecuador, Mexico, Peru, Uruguay, Venezuela, and the Central American countries. In addition a study on the profile and social and working conditions of nursing staff was conducted in six countries.

Regarding the Expanded Textbook and Instructional Materials Program, a reorientation of its objectives has been proposed in order to align them with the Organization's priorities. In addition, a new approach was introduced to support the ministries of health in their efforts to extend health coverage and to strengthen training of personnel that will take charge of decentralized services. To accomplish this, contents have been redirected, the countries have participated in developing these contents, new distribution and marketing mechanisms have been established, and a cooperation network has been set up among countries best equipped to produce handbooks in order to establish a "common market for technical books in health." At this early stage, activities are focused in Argentina, Brazil, Colombia, Costa Rica, Guatemala, Mexico, Peru, and the Caribbean.

The Program includes 63 textbooks on basic sciences, medicine, nursing, dentistry, and veterinary medicine as well as two series of manuals — one for midlevel technicians and auxiliaries and another for health programs administrators; 9 titles have been issued in the first, 13 in the second. Another 14 publications were in process of being prepared. Within the diagnostic tool portion of the program, some 130,000 units of equipment valued at US$2,500,000 were distributed in 1987.

Educación Médica y Salud reached its 21st year of continuous publication in 1987; issues in volume 21 were devoted to continuing education of health personnel, new developments in health education, research on health personnel, and labor-force planning.

Health Personnel Administration

The Organization continued to cooperate with the countries in formulating policies and developing strategically oriented personnel planning models emphasizing qualitative aspects to support local health systems. An advanced training program in human resource development was established. This program includes a planning reorientation and concepts of macro- and microeconomic dimensions of health work in terms of productivity and cost-benefit ratios. Foundations were laid for establishing a collaborative network for

training in this field in Argentina, Brazil, Mexico, and Central America.

In continuing education, a proposal was formulated to reorient health personnel training and transform it into an ongoing, multidisciplinary, and participatory process developed within the context of the services; the proposed methodological approach is consistent with the expected operation of local health systems, and will be developed in Argentina, Brazil, Guatemala, Honduras, Mexico, and Nicaragua. The proposal will be rounded off with the design of an instructional training plan for workers in the services and with a system to monitor and evaluate the learning process.

Other developments in continuing education included a review of the social service requirements for graduates in health professions and the design of continuing education programs for nursing auxiliaries; both of these activities began with Regional meetings in Mexico and Quito, respectively, to be followed by a working stage at the country level.

Training

The Organization's cooperation in this area focused on developing and applying a prospective analysis methodology which could subsequently support institutional development and study the links between biological and social knowledge and the health professions. Special emphasis also was given to promoting leadership through advanced training in public health.

Using normative future scenarios as a departure point, an attempt has been made to reflect the connections between medical education, its sociocultural, economic, and political context, and health conditions and the organization of health services, redirecting training toward alternative patterns of medical practice, available technology, and the possibility for more integration between training and service activities. The application of this analytical scheme in many schools of medicine (Argentina, Bolivia, Dominican Republic, Ecuador, Mexico, Peru, Venezuela, and all of Central America) has been well received and has prompted broad faculty involvement in the evaluation and reorientation of programs.

Based on this experience it was possible to adapt this same analytical tool for use in schools of dentistry and nursing, where a curriculum review is currently under way. This same approach was presented to a group of nurses from other WHO Regions during a worldwide seminar held in Washington, D.C., and was widely accepted by the participants who recommended that PAHO operate as a focal point in this field.

As a follow-up to the application of the prospective analysis in several countries, discussions of possible strategies for developing plans and programs has been promoted in specific schools. A new approach to link biological and social knowledge to health professions has also been initiated. A first meeting on this subject was held at Headquarters, marking the beginning of an analytical process scheduled to continue throughout 1988 and aimed at redirecting educational programming on the basis of the goal of health for all by the year 2000.

Leadership development in health has been promoted, especially in schools of public health, to support the process of change in the health service systems. To this end and in close coordination with ALAESP and ASPH, it was agreed to promote the establishment of exchange networks among schools that focus on the development of the six priority issues for the infrastructure area that have been approved by the Organization for the current four-year period.

Working meetings were held in the schools of public health of Argentina, Brazil, Colombia, Mexico, Puerto Rico, and Venezuela to address health and intersectoral development, information systems and epidemiology, the health sector's financial analysis, the health labor force, technology development and evaluation, and health service organization, respectively. In addition to fostering a broad faculty participation including representatives of most of the schools of public health

of the United States, these meetings also have opened up new avenues for developing health research and will lay the foundation for an extensive reformulation of public health training plans.

Specific cooperation was provided to review and reorganize a number of the Region's schools of public health, including those of Argentina, Cuba, Mexico, and Venezuela. The universities of the English-speaking Caribbean also received support to formulate a proposal for training in health administration, which was subsequently approved for financing, within the context of the Caribbean Health Cooperation Initiative, by the Pew Memorial Trust.

Leadership promotion also comprises the international health residencies program. This program, in operation since 1985, has had extensive involvement from several Headquarters programs; this year's ten residents from Argentina, Bolivia, Brazil, Chile, Costa Rica, the Dominican Republic, Ecuador, and Uruguay belong to these programs.

Regarding the Organization's fellowship awards, the redirection of program priorities at the Regional level, the particular features of training needs in each country, the recent developments in national potentials for training in particular fields, and the decentralization of the fellowship award process, resulted in significant shifts in the patterns of program use and led to an in-depth review of the program's performance. To this end, information on fellowship awards for the past 15 years was compiled and a protocol for reviewing the program in each country and in the Region as a whole was begun. This effort also seeks to assess the program's performance and the degree of compliance with fellowship policies set forth in Resolution EB71.R6 adopted by the WHO Executive Board in 1983.

During the year, 1,066 new fellowships awarded in the Americas (Table 1) at a cost of US$3,552,583. An additional US$418,081 was used to extend fellowships granted in previous years. The combined cost for new fellowships and extensions was US$3,970,664. There were 125 group fellowships awarded, constituting 11.7% of all fellowships. Short-term fellowship awards (753) accounted for 70.6% of the total, and long-term awards (188) for 17.6%. The professional and occupational profile of fellows indicates that 50% of them were physicians, dentists, nurses, sanitary engineers, and veterinarians. Fellowships granted to women represented 45.5% of total awards for the year.

The number of fellows placed in the Americas from other WHO Regions was 337.

Scientific and Technical Health Information

In scientific and technical health information, the Organization channeled its efforts along two major areas: information and documentation, and publications.

Information and Documentation

In 1987, national and Regional coordination mechanisms were established to facilitate online access to the data banks at the U.S. National Library of Medicine (NLM) by professionals from Argentina, Chile, Colombia, Costa Rica, Jamaica, Mexico, Trinidad and Tobago, and Venezuela. The countries received further support for purchasing books (more than 24,000 this year) and scientific journal subscriptions (3,669 titles). Some 6,000 documents were added to the information file and bibliographies were published on disasters, gerontology, women's health, community education and participation, cancer, and technology in health. The Latin American and Caribbean Center for Health Sciences Information (BIREME) celebrated its 20th anniversary with a ceremony attended by authorities from many countries of the Region. BIREME activities this year included the transfer of the LILACS (Latin American Health Sciences Literature Databank) methodology to national coordinating centers that constitute the Latin American Health Information Net-

Table 1. Fellowships Awarded by Country of Origin and Type of Training, 1987

Country of origin of fellows	PAHO/WHO-organized or assisted group courses	Long-term fellowships	Short-term fellowships	Total
Antigua and Barbuda	3	3	1	7
Argentina	2	2	15	19
Bahamas	0	5	8	13
Barbados	2	6	19	27
Belize	0	7	4	11
Bolivia	9	1	11	21
Brazil	5	0	58	63
British West Indies	1	8	11	20
Canada	0	2	9	11
Chile	2	8	41	51
Colombia	7	0	33	40
Costa Rica	6	4	49	59
Cuba	3	8	92	103
Dominica	2	4	3	9
Dominican Republic	0	0	11	11
Ecuador	11	4	12	27
El Salvador	5	9	19	33
French Antilles and French Guiana	1	1	0	2
Grenada	2	3	0	5
Guatemala	9	39	51	99
Guyana	0	4	4	8
Haiti	2	4	18	24
Honduras	5	10	26	41
Jamaica	4	4	12	20
Mexico	5	3	52	60
Netherlands Antilles and Aruba	0	1	1	2
Nicaragua	2	6	11	19
Panama	8	3	26	37
Paraguay	2	2	9	13
Peru	7	1	17	25
St. Kitts and Nevis	2	2	6	10
Saint Lucia	4	6	4	14
St. Vincent and the Grenadines	6	5	0	11
Suriname	0	5	7	12
Trinidad and Tobago	3	6	15	24
United States of America	0	0	12	12
Uruguay	2	2	17	21
Venezuela	3	10	69	82
Total	125	188	753	1,066

work. The network functions by having the 10 current member countries—Argentina, Brazil, Colombia, Costa Rica, Chile, Mexico, Peru, the Dominican Republic, Uruguay, and Venezuela—conduct a self-analysis of their literature. By the end of the year, LILACS had 43,000 bibliographic entries and corresponding article summaries. Other services offered by BIREME to health professionals during the year included: 62,338 photocopies of scientific articles gathered through the computerized bibliographic service; 4,910 bibliographic searches using LILACS databanks and NLM's MEDLINE; participation of 4,304 users in the programs for selective dissemination of information; and completion of a pilot project to distribute the LILACS database on compact discs (CD-ROM).

With assistance from BIREME, the ISIS system, which will be used to file documents in LILACS, was installed at PAHO/WHO Headquarters.

As part of this reorganization, a Regional advisory unit for Latin American scientific and technical health information was established at the end of the year to support member countries. In addition, the functions of the library at Headquarters were redefined, establishing as its primary duties the meeting of Headquarters' information needs and providing integration with BIREME and the Latin American Health Information Network through the use of a common methodology.

Publications

During the year the Editorial Service published many works through its scientific publications series, its official documents, and its technical papers, as well as regularly issuing the Organization's three periodicals. The 1987 publications are listed in Table 2.

Scientific Publications addressed tuberculosis, zoonoses, birthweight, and drinking water. The 14th edition of *El control de las enfer-*

Table 2. Publications Issued by the PAHO Editorial Service in 1987

	Scientific Publications
498	Control de la tuberculosis: Manual sobre métodos y procedimientos para los programas integrados
503	Zoonoses and Communicable Diseases Common to Man and Animals, 2nd edition
504	Patterns and Birthweights
506	Guías para la calidad del agua potable, vol. 2
507	El control de las enfermedades transmisibles en el hombre, 14a edición.
	Official Documents
212	Manual de Resoluciones de los Cuerpos Directivos de la OPS, vol. 3
212	Handbook of Resolutions of the PAHO Directing Bodies, vol. 3
215	Informe Anual del Director, 1986
215	Annual Report of the Director, 1986
219	Informes Finales de la 98a y 991 Reuniones del Comité Ejecutivo y de la XXX Reunión del Consejo Directivo de la OPS/Final Reports of the 98th and 99th Meetings of the Executive Committee and of the XXX Meeting of the PAHO Directing Council
	Technical Papers
3	Protección del paciente en radiodiagnóstico
4	Investigaciones sobre servicios de salud. Indice de trabajos
5	Malaria en las Américas. Informe de la IV Reunión de Directores de los Servicios Nacionales de Erradicación de la Malaria en las Américas
6	Guía práctica para la erradicación de la poliomielitis
6	Polio Eradication Field Guide
7	Pautas simplificadas. Control de las enfermedades de transmisión sexual
8	Atención médica de casos graves y complicados de malaria. Reunión técnica informal de un grupo internacional de especialistas patrocinada por la OMS
9	Control del hábito de fumar. Segundo taller subregional. Area andina
10	Problemas nutricionales en países en desarrollo en las décadas de 1980 y 1990
11	Assessing Needs in the Health Sector after Floods and Hurricanes
13	National Health and Social Development in Costa Rica: A Case Study of Intersectoral Action
	Other Publications
	Principios básicos para la acción de la Organización Panamericana de la Salud, 1987-1990
	Basic Principles for Action of the Pan American Health Organization, 1987-1990
	Periodicals
	Boletín de la Oficina Sanitaria Panamericana (mensual)
	Bulletin of the Pan American Health Organization (quarterly)
	Educación médica y salud (trimestral)

medades transmisibles en el hombre (translation of an American Public Health Association book) was completed, and substantial progress made on the production of two extensive books (about 1,000 pages each) to be issued in Spanish and English during 1988: *The Challenge of Epidemiology: Issues and Selected Readings* and *The Right to Health in the Americas: A Comparative Constitutional Study*.

Three Official Documents were issued: Spanish and English versions of a new edition of the *Handbook of Resolutions* and the *Annual Report of the Director, 1986,* and a bilingual publication of the final reports of the previous year's meetings of PAHO's Governing Bodies.

The Technical Papers series, begun in 1986 as a cost-effective and quick way to disseminate information on health and disease control, gathered momentum in 1987 with the publication of eight titles in Spanish and three in English. The series has been enthusiastically received both within and outside the Organization.

A special publication, *Basic Principles for Action of the Pan American Health Organization, 1987-1990,* also was issued in both Spanish and English. Its information should be highly useful in the Organization's cooperative efforts with the Member Countries.

In its January issue, the *Boletín de la Oficina Sanitaria Panamericana* launched a new section, "Instantáneas," which briefly summarizes recently published articles from respected international scientific journals. These notes on new discoveries, technological advances, epidemiological trends, and novel approaches in health offer up-to-date information on issues that interest the international health community. A special December issue, devoted to the economics of health, was prepared by a guest editor, and included a forum on health service financing in developing countries with comments by five experts on health conditions of several countries of the Americas. A pamphlet with information for authors and instructions for submitting manuscripts was included in the January and July issues; many additional requests for the pamphlet have been received and it has led to a visible improvement in the presentation of articles submitted for publication.

Four subject-specific issues of Volume 21 of *Educación Médica y Salud* and four issues of the *Bulletin of the Pan American Health Organization* were published in 1987.

A catalogue listing the Organization's publications from 1953 to 1986 was published in English.

Editorial Service staff visited Argentina, Brazil, Chile, Jamaica, Mexico, and Peru during the year to establish contacts for joint publishing, distribution, and outside translation and editing ventures, as well as to provide technical cooperation in publishing to PAHO centers. An editor also spent five weeks in Geneva collaborating with the WHO publications program.

In 1987, strategies to promote and market PAHO publications were formulated, and several promotional pamphlets on the Organization's salient scientific publications were produced. Plans were drawn for a readership survey for the *Boletín de la Oficina Sanitaria Panamericana,* and a questionnaire was designed. Twenty-one national and international exhibits were organized and coordinated. Regarding distribution and sales, mailing lists were expanded as a result of an effort to identify institutions and individuals potentially interested in PAHO's publications. The list of subscriptions to *Educación Médica y Salud* was reviewed to convert free distributions to sales and to support free distribution to institutional subscribers. Free distribution to the *Boletín de la OSP* increased by 2,000 subscriptions. In addition to publications produced by the Editorial Service, the Organization distributed more than 20,000 copies of technical publications. The combined distribution of PAHO and WHO publications in 1987 came to 391,303 copies.

Decentralization of sales for the Organization's publications was strengthened through local operations in New York, São Paulo, Madrid, and Buenos Aires; this new approach will be carried out in other countries in 1988.

As a result of decentralization, promotional efforts, special drives, and exhibits, sales during the year totalled nearly US$110,000.

Research

For the countries of Latin America and the Caribbean, these final years of the century have been ones of crisis, a crisis born of the depletion of current patterns of development. New modes of production and trade in an increasingly internationalized world call for structural and socioeconomic changes that, perforce, include scientific and technical development. This is a requisite for developing a scientific and technological foundation upon which the countries can rely to function as independent nations. By the same token, an accelerated incorporation of new technology into health practice, an increase in health care costs, and the reorganization of national health systems also require health research policies and researchers to steer the necessary scientific support to bring about changes in the health sector.

Framed by the principles that govern the management of knowledge, which is an essential mandate of the Organization, cooperation activities in research followed four main work avenues: the organization and development of scientific activities in health; strengthening of the countries' research capabilities in priority areas; coordination and evaluation of the Organization's research policies and activities; and management of the Research Grants Program. The following activities, by their very nature, are considered to have the greatest importance for the future development of research in the Region.

The XXVI Meeting of the Advisory Committee on Health Research (CAIS) was held in August in Brazil, at the invitation of the Oswaldo Cruz Foundation. Participants included CAIS members, special guests, observers, and representatives from international organizations and PAHO/WHO. The main topics under discussion were: PAHO/WHO's research organization and management; scientific and technological development in Brazil; technical cooperation in biotechnology as applied to health; and matters pertaining to CAIS operations.

Among the recommendations issued by the Committee was the establishment of two CAIS subcommittees—one on biotechnology and another on health systems research. PAHO's Directing Council ratified this and other Committee recommendations at its XXXII Meeting.

Biotechnology initiatives begun in some countries of the Region represent the growing concern with the economic and social importance of this field. These initiatives include efforts to define specific development policies for biotechnology in health, to establish agencies and programs dedicated to this development, and to develop bilateral and multilateral agreements involving cooperation agencies.

Although PAHO/WHO conducted some activities in this field prior to 1987, these were not part of a program that integrated efforts and resources toward concrete objectives. Beginning in 1987, the Organization's activities were no longer conducted in isolation, and involvement in the above-mentioned initiatives increased to lend systematic support to the efforts of countries and of other cooperation agencies.

In October 1987, the CAIS Subcommittee for Biotechnology held its first meeting in Costa Rica. At this time, the "Regional Program for the Development of Biotechnology as Applied to Health" was designed, aimed at strengthening the scientific and technical infrastructure and the production of biotechnology in six countries of the Region in the course of the next five years.

Representatives from the Organization attended the I Meeting of the Regional Directing Council for the UNDP/UNESCO/United Nations Industrial Development Organization (UNIDO) Regional Program of Biotechnology held in Mexico city from April 29 to May 2, 1987. The Council requested that PAHO/WHO conduct activities on biosafety aspects related to biotechnology. In response to this request, the Organization, working with the

Inter-American Institute for Cooperation in Agriculture (IICA), the Organization of American States (OAS), and the United Nations International Office of Epizootics, organized and financed a gathering of scientists to develop safety guidelines and norms for the use and handling of recombinant DNA techniques. These guidelines and norms will be published and distributed to the Region's scientific community in 1988.

To continue to pursue efforts, begun in 1983, to strengthen the planning and the scientific and technical infrastructure in health, science and technology administrators from Argentina, Brazil, Chile, Cuba, Mexico, and Uruguay attended a meeting to discuss technical cooperation in health science and technology in November, in Montevideo, Uruguay. Discussions led to a better understanding of the complex cooperation network of bilateral and multilateral agreements among the countries and the Region's institutions aimed at developing research, transferring technology, training researchers, and exchanging scientific and technical information.

In response to recommendations issued at a meeting held in 1986 on health research in Central America, Panama, and the Dominican Republic, financial support was given to Costa Rica, Guatemala, and Honduras to conduct national research workshops in 1988. These workshops are designed to define priorities and promotion strategies for research conducted as part of the Plan for Priority Health Needs in Central America and Panama.

In 1985, PAHO/WHO's Research Grants Program became a technical cooperation mechanism designed to generate knowledge to help solve priority health problems. To the Program's original research areas (analysis of health conditions in the countries and health problems in specific population groups), research on priority technological development was added in 1987. This new research area has provided support for nine projects on the development and evaluation of diagnostic methods for AIDS, hepatitis, malaria, and Chagas' disease. In 1987, the Program funded 50 projects for $US722,275.

As part of the effort to produce and disseminate scientific and technical information, the ninth volume of *Research in Progress* was published in 1987, describing 125 ongoing research projects in most countries of the Region for 1984-1985; most of these projects have been funded with external resources. The report of the II Latin American and Caribbean Research and Development of Health Technology Workshop also was published. The workshop's central theme was the development of scientific and technical health indicators. To prepare it for publication, the Latin American Bibliography on Social Science Applied to Health (1980-1985) was updated; the bibliography contains more than 1,000 scientific articles, and their summaries, published by authors from the Region.

The Organization and the United States National Institutes of Health edited a publication (in English and Spanish) on research issues and trends in the National Institutes of Health, which summarizes papers presented by North American scientists during the XXV Meeting of CAIS, held in Washington, D.C., in April, 1986.

In addition to its support for Regional and subregional activities, the Organization provided technical cooperation at national and institutional levels to strengthen coordinating units for science and technology in Argentina, Brazil, and Uruguay. To encourage the development of regular scientific and technical information systems and to establish exchange networks among the countries, Cuba and Canada, the two countries with most experience in this field, were visited.

III. Health Programs Development

During 1987, PAHO/WHO consolidated its approach of focusing technical cooperation according to geographically defined areas and particular themes. Subregional initiatives advanced considerably in health program development: in Central America, projects have been formulated, funded, and executed and in the Caribbean the process is well under way. Regarding specific themes, the plan of action to stop the spread of wild polio virus by 1990 was fully funded and achieved active implementation, and the plan to eliminate urban rabies was accelerated through significant new extra-budgetary funding. The Organization also accepted the responsibility conferred on it by the Ministers of Agriculture at the 1987 Inter-American Meeting, at Ministerial Level, on Animal Health (RIMSA) to organize the ways to eliminate foot-and-mouth disease from the Americas by the year 2000. In addition to emphasizing these significant thematic objectives, PAHO/WHO also stressed the strengthening of local health systems and those technical cooperation programs that support this thrust. For example, in vector control in general and malaria in particular, the approach has been to employ epidemiologic stratification as the framework within which to program and apply resources most effectively at the local level, seeking to integrate malaria services into the local health services. Research on the efficiency of maternal and child health services has provided data for use in local health service programming, and developing national health plans and programs, particularly in nutrition, has been emphasized. PAHO/WHO gathered information to be able to advise Governments on the most appropriate plans and policies for increasing food availability and consumption at the household level, and continued to focus on the integrated approach for preventing and monitoring chronic diseases. In environmental health, most attention was channeled to water and sanitation, and it was heartening to note that some progress had been made toward reaching the International Drinking Water and Sanitation Decade goals.

Some highlights of PAHO/WHO's technical cooperation during 1987 are outlined below. These activities were conducted within the context of the six main strategic approaches used—mobilization of resources; dissemination of information; training; development of norms, plans, and policies; research promotion; and direct technical consultancy. Most attention will be devoted to the first five.

Adult Health

During 1987, PAHO/WHO continued to work with Member Governments to formulate, carry out, and evaluate policies and programs for adults, focusing on population groups rather than on specific diseases. Within this approach, areas of top priority were chronic diseases such as cardiovascular diseases and cancer, diabetes mellitus, rehabilitation, ocular health, accident prevention, mental health, and the prevention, treatment, and rehabilitation of alcoholism and drug abuse. Problems of the aging population continued to receive special attention.

There were various efforts to mobilize a wide range of resources to promote activities at the country level. With funds from the Arab

Gulf Programme for United Nations Development Organizations (AGFUND), programs of prevention and control of rheumatic fever were started in Bolivia, El Salvador, and Jamaica. Representatives from Argentina, Brazil, Chile, Cuba, Mexico, and Venezuela participated in the meeting of the Inter-American Society of Hypertension and sought support for national programs. The American Association for Retired Persons and PAHO/WHO cofinanced a consultant for a project to assess the situation of middle-aged and elderly women. The Organization continued to provide support for joint projects on ocular health conducted by the countries and AGFUND. Ocular health activities began in Belize, Bolivia, El Salvador, Guyana, Nicaragua, Paraguay, and Grenada, where the International Eye Foundation also helped develop the program. Resource mobilization in ocular health has been particularly successful in the English-speaking Caribbean, where a Caribbean Council for the Blind (CCB), part of the Interagency Coordinating Group for Eye Care in the Caribbean (ICG), appointed a prevention of blindness officer, who has developed a basic work plan to be carried out with technical assistance from PAHO/WHO and the Caribbean Community (CARICOM).

A very promising development in the coordination and mobilization of the international community's efforts to fight drug abuse involves an interorganizational group that includes participants from the Organization of American States (OAS), the Bureau for International Narcotics Matters (INM) of the U.S. Department of State, the U.S. Information Agency (USIA), the National Institute on Drug Abuse (NIDA) of the National Institutes of Health (USA), and PAHO/WHO. The group has promoted several activities and projects such as sensitizing the media and the community, establishing an inter-American data bank and information centers, and conducting a subregional seminar in the Caribbean on drug demand reduction. Another approach to mobilizing resources in this field has been to identify and promote collaborating centers. The strongest connection so far has been with the Institute of Alcoholism and Substance Abuse of Costa Rica; this strategy is a key aspect of PAHO/WHO's technical cooperation activities in the Andean Subregion.

The Organization disseminated information in this field either as articles published in scientific journals or as material produced to strengthen program execution in the countries. The best structured example of the latter is the Latin American Cancer Research Information Project (LACRIP). This project continued to assist Latin American investigators, clinicians, and administrative personnel to develop better approaches to prevent, diagnose, and treat cancer by identifying, collecting, and disseminating current, worldwide information on cancer. During 1987, LACRIP published four Selective Dissemination of Information (SDI) series containing CANCERLINE updates on 15 cancer topics, which were distributed to 4,500 subscribers in the countries. Some 1,200 CANCERLINE and PDQ bibliographic searches were conducted in response to specific requests from Latin America and the Caribbean, and bibliographic support was provided for several meetings organized in the Region. Use of electronic mail also has increased, and this system now functions in Chile, Costa Rica, Peru, and at BIREME in Brazil. The United States' National Cancer Institute and Brazil continued to collaborate in the project.

A thesaurus on social gerontology was published, as well as the second volume of *Gerontology Update*, which contains 40% of material pertaining to Latin America and the Caribbean as compared to only 10% in the first volume.

Most training in adult health programs was conducted through workshops and courses. A total of 20 participants from Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Panama, Peru, Uruguay, and Spain as well as 35 from Venezuela attended a regional course on epidemiology of chronic diseases, particularly cardiovascular diseases, in Barquisimeto, Venezuela. PAHO/WHO also supported a

regional course on gerontology, geriatrics, and management of services for the elderly, an international seminar-workshop for training in cancer registries, and a subregional seminar for the Andean countries on the management and prevention of problems related to alcohol and other substances. Efforts to involve academic institutions in North America and Latin America in training programs on psychiatric epidemiology, community mental health, and community psychiatry also have begun.

Implementation at the country level of various adult health programs involves establishing appropriate plans, policies, and norms of care. This is particularly important regarding health of the disabled, and, during 1987, PAHO/WHO held a series of subregional workshops—in the Southern Cone in April, in the Andean Subregion in July, in the English-speaking Caribbean in August, and in Central America in November. In addition to 138 participants, agencies such as UNICEF, the World Rehabilitation Fund, and the Helen Keller International Foundation also participated. These workshops were designed to encourage planners, programmers, and other personnel working in rehabilitation to apply community-based rehabilitation (CBR) and to present to them a model of national planning for the program. In addition to providing an opportunity to discuss CBR policy and technical and administrative aspects, the workshops also provided a forum where national experiences in setting up programs could be analyzed and where CBR methodology and didactic material for use in national workshops, such as ones already held in Brazil, could be presented.

In 1987, PAHO/WHO promoted and supported policies or plans to establish integrated programs of prevention and control of chronic diseases in Argentina, Brazil, Chile, Costa Rica, Cuba, Mexico, and Venezuela. Emphasis was placed on exercise, diet, smoking control, and appropriate treatment of arterial hypertension. A workshop on smoking, similar to those held in 1985 in the Southern Cone and in 1986 in the Andean Subregion, was held in Jamaica for the Caribbean Subregion. Subregional workshops also have been used to promote national programs on cervical cancer control; in 1987, such workshops were held in the Caribbean and in the Andean Subregion. These led to a review of various components of the cervical cancer detection program and offered recommendations for orienting activities so that more women in high-risk age groups would have access to cervical cytology services. Subsequently, national workshops were held in Colombia and Venezuela. The Organization participated, along with several other agencies and 13 countries, in a planning meeting in Belize to develop strategies to reduce drug demand in the Caribbean.

The most important aspect of research is that it provides a practical methodology for use in the countries. Promotion of research assumed greater importance in the chronic disease program than in many others. Research was completed on individual and population risk factors susceptible to intervention (smoking, alcohol abuse, inappropriate diet, sedentary habits, stress, social support, arterial hypertension, and obesity). Studies showed prevalences in smoking of 30-50%, alcoholism around 10%, hypertension around 10%, obesity of 10-20%, and an absence of preventive care. This was evident in around 60% of the population at risk in regard to cancer of the cervix and in 60-80% of the population in regard to hypertension. Clearly, much remains to be done to control risk factors for chronic diseases in the Region. These studies were carried out in two places in Brazil, in Chile, Cuba, Mexico, and Venezuela; the results are still being analyzed.

Three research projects to assess the situation and tendencies of health services are being carried out in Brazil, Costa Rica, and Venezuela. PAHO/WHO sponsored and coordinated research on accidents in persons below 20 years of age in Brazil, Chile, Cuba, and Venezuela, and the results were presented at a seminar of the Latin American Pe-

diatric Congress. These studies showed morbidity rates of 150-200 cases per 1000 persons 0-19 years old, with falls, occurring mainly in younger children, as the major cause. Males suffered most home accidents.

PAHO/WHO has now prepared a model of accident surveillance in adults and is promoting the application of such research and the development of programs for accident prevention and treatment. This study has been the first to apply the International Classification of Impairments, Disabilities, and Handicaps in the Americas.

During 1987, the Organization completed a statistical analysis of data from Argentina, Guyana, and Trinidad and Tobago on the needs of the elderly. This constitutes the fifth analysis since those of Chile and Costa Rica were completed in 1986; eight other countries are in different phases of data collection and analysis. Other PAHO/WHO-supported research projects in the countries include a study on the prevalence of senile dementia, a survey on morbidity in the elderly, and research on drug consumption patterns of the elderly in Argentina. Preliminary data from this last study confirm high levels of expenditure on drugs for the elderly, as well as prescription patterns which may not be in keeping with morbidity data or disease patterns in this age group.

The drug abuse research, which PAHO/WHO has promoted, is mainly epidemiological, primarily seeking to provide a good information data base. The first meeting of the Regional Advisory Group was held in Buenos Aires, Argentina, and produced a basic working guide to epidemiological research in this field. The technique of using key informants is also being used in research to obtain epidemiological data.

Field research for programs to establish zones with no persons suffering from cataracts ended in Brazil and Peru, and results are being used to develop models of eye care services in other countries. This study relied on mass education, house-to-house visual acuity screening, outpatient surgery, and community follow-up as research techniques. In Brazil, this program had an 80% success rate measured by the percentage of operations that experienced significant improvement in visual acuity at follow-up. The results of the epidemiological studies on trachoma in São Paulo also are being analyzed to develop a control program, at least at the State level.

PAHO/WHO continued to provide direct technical assistance to the countries as required. This has been particularly important in ocular health, since no Pan American Centers deal with eye care and the PAHO/WHO Representations have few staff members with primary responsibility in this area.

The Organization's vigorous promotion and technical cooperation yielded visible effects during 1987. For example, Argentina, Brazil, Chile, Costa Rica, Cuba, Uruguay, Venezuela, and the English-speaking Caribbean countries increasingly have developed policies for the control of chronic diseases within the context of the health services, and some countries have established adult health units in the Ministry of Health. In terms of rehabilitation, only Argentina and Saint Lucia carried out community-based rehabilitation last year, but in 1987 Brazil, Chile, Colombia, and Ecuador started programs. In the case of ocular health, by the end of the year at least 19 countries had established national eye care programs, thus moving toward the medium-term program goal to establish national eye care programs and access to referral services in communities not served in half the countries by 1989.

Maternal and Child Health Including Family Planning

This program area underwent no structural changes during 1987; the four main technical cooperation areas, including family planning, the Expanded Program on Immunization (EPI), diarrheal diseases control, and acute respiratory infections and tuberculosis, continued to grow. Perinatal care is addressed more

specifically by the Latin American Center for Perinatology and Human Development (CLAP) in Montevideo, Uruguay.

Maternal mortality commanded increased attention during 1987. The main causes of maternal mortality—hemorrhage, infection, obstructed delivery, the toxemias of pregnancy, and septic abortion—are all preventable. Yet, although intervention strategies have shown their effectiveness in reducing infant mortality in the Americas, maternal mortality has not yet received the concern it merits. There are great differences in maternal mortality between countries and even between regions of the same country. Some 34,000 maternal deaths occur each year, most of them in Bolivia, Brazil, Ecuador, Haiti, Mexico, Paraguay, and Peru. And whereas in Latin America the risk of death from pregnancy, delivery, the puerperium, or their related causes is approximately 1 in 73, in North America it is 1 in 6,366. The situation in the Caribbean is better, but figures still do not approach those for North America or the developed European countries. This high level of mortality suggests the great morbidity in relation to childbearing in Latin America.

Resource mobilization was pursued in terms of both national and external resources. To help mobilize and coordinate agency support for EPI activities, a mechanism and a methodology were developed. An Interagency Coordinating Committee with participants from PAHO/WHO, UNICEF, the United States Agency for International Development (USAID), the Inter-American Development Bank, and Rotary International, issued three joint communiques: one on overall approaches for preparing national plans, one on policies for social communication, and one on policy and strategic approaches. Locally developed national plans reflect this interagency collaboration, specifically defining each party's contribution, including the Government's, to the work program.

A PAHO/WHO-W.K. Kellogg Foundation regional program to support maternal and child health development aims at consolidating national networks of projects; within this project, networks in Argentina, Brazil, and Colombia continued their activities. The Latin American Center for Perinatology and Human Development continued to support the perinatology network's efforts which emphasized research, teaching, and the organization of perinatology services. This perinatology network remains an excellent example of how national groups and centers can work toward promotion and execution of various aspects of service and research, thereby expanding the capacity of the small nucleus of PAHO/WHO staff.

The Organization's relationship with the United Nations Fund for Population Activities (UNFPA) provided another avenue for mobilizing resources to the countries: 35 projects were carried out in 27 countries of the Region with a total budget of approximately $US6 million.

The excellent collaboration between the diarrheal disease control program and USAID and its Office of Technologies for Primary Health Care allowed PAHO/WHO to continue to fund a consultant in Mexico and to provide short-term consultancies for Peru. An associate officer was appointed in Brazil with funds from the Government of the Netherlands.

To encourage university departments and professional associations to become involved in promoting the basic concepts of the maternal and child health program, PAHO/WHO participated in several congresses such as the 12th Latin American and the 16th Central American Congresses of Obstetrics and Gynecology and the Pan American, Latin American, and Venezuelan Congresses of Pediatrics. The Organization's support to the School of Public Health in Rio de Janeiro assisted in the development of EPI and other maternal and child health activities.

To accelerate EPI in the Americas, a novel approach has been pursued: mobilizing a country's target population to respond to its government's immunization efforts. In addition, to implement some strategies such as na-

tional vaccination day campaigns, it also has been necessary to mobilize different social sectors and organizations in a country. Undoubtedly, education of the population in disease prevention through vaccination and in assuming some responsibility for accessing health services requires social communication and mobilization. Consequently, PAHO/WHO convened a meeting of the Interagency Coordinating Committee to prepare regional guidelines on social communication. These guidelines are designed to reinforce or increase the countries' capabilities for developing health messages and mobilizing the community.

Special efforts were made to provide and disseminate printed and audiovisual maternal health information. Some of the topics covered in growth and development were maternal mortality, risk approach, evaluation and organization of services, and youth and adolescence. EPI's weekly polio report, now firmly established, has become a major source of information on polio eradication. Six issues of the *EPI Newsletter* were published, and various polio eradication guides were prepared and distributed. About 600 professionals in Latin America periodically received documents on new developments in tuberculosis; the Collaborating Center in Argentina processed data on the incidence and mortality from all countries with populations over 100,000 and prepared a publication which was distributed to the countries through PAHO/WHO. A bibliography and several guides and manuals on acute respiratory infections (ARI) continued to be published; among the most used were the Spanish version of "Management of ARI for Physicians," "Treatment of the Child with ARI—Modules for Supervisors," and the physician's pocket handbook, "Treatment of ARI." Slide sets and other audiovisual materials on acute respiratory infections also were distributed in Latin America and the Caribbean in both Spanish and English. The newsletter *ARI News* was translated into Spanish and 20,000 copies were distributed. CLAP continued to publish its bulletin, *Salúd Perinatal* and PAHO/WHO Representations made available bibliographic information on perinatology, obstetrics and gynecology, and neonatology.

Training was conducted through a series of workshops. About 400 professionals from all Member Countries participated in major training activities in growth and development, and some 200 professionals received training at CLAP. One of the most popular activities at the Center was a workshop on perinatal technologies which attracted 47 professionals from 11 countries. EPI training focused on surveillance and laboratories. Throughout the year some 1,600 health workers received training in disease surveillance through courses held in several countries, and a polio eradication guide was prepared to complement this training. The increase of suspected and probable polio cases reflects the impact this training has had on the national surveillance systems. During 1987, 141 health workers were trained in basic routine maintenance of refrigerators and other vaccine storage equipment.

Most of the countries participated in training in diarrheal diseases. An international course on management was conducted for Belize, Dominica, Guyana, Jamaica, Nicaragua, and Trinidad and Tobago, followed by national level training in Peru. Courses were held in program supervision and in the use of oral rehydration therapy. There was a determined attempt to establish clinical units for diarrheal diseases treatment; this involved training not only in the clinical aspects but also in the organization of these units. This training took place at the Institute of Nutrition of Central America and Panama (INCAP). Mexico alone conducted 251 courses and trained 2,592 persons in the clinical management of diarrheal diseases. Other courses were conducted in the Bahamas, Barbados, Belize, Guyana, Peru, Suriname, and Trinidad and Tobago.

Local faculty and PAHO/WHO consultants conducted five-week courses on epidemiology and management of tuberculosis in Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela. In Colombia, this course marked the first such training held in 11 years. The Or-

ganization also provided training in the bacteriology of tuberculosis at the Pan American Zoonoses Center (CEPANZO) and collaborated in the global course held at the Canadian Laboratory Center for Disease Control.

Given that a lack of uniformity in norms has been an obstacle to program implementation, PAHO published a manual on growth and development (PALTEX Series No. 8) to help standardize them in the field. UNFPA projects have also contributed to the development of national plans and norms for family planning. The Spanish edition of the revised version of the tuberculosis control manual (Scientific Publication 498) was published this year.

The most successful application of the national planning process has been seen in the EPI: the national plans of action prepared during this year represent blueprints for defining required national and external resources. Nineteen countries, which contain over 95% of the population of Latin America and the Caribbean, have national plans which serve as a progress evaluation tool. The countries of the English-speaking Caribbean held the fifth biannual EPI managers meeting where national plans for that subregion were prepared and discussed with external donors.

CLAP continued to devote much of its effort in preparing norms and guides to be used as basic documents by national groups responsible for perinatal care. Guides for prenatal control, delivery, and care of the newborn have been adapted for use by groups in Argentina, Brazil, Colombia, Costa Rica, and Nicaragua. In 1987 the Center advised Brazil, the Dominican Republic, and some English-speaking countries on how to create national committees for formulating policies and plans for perinatal care.

Standardizing norms continued to be a focus of the programs of diarrheal disease control and acute respiratory infections. By year's end, 24 countries had functioning diarrheal disease control programs. A series of meetings were held to review these programs; among the most successful were meetings in Quito and Cali to review those of the Andean countries. Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, and Venezuela published norms for their acute respiratory infections programs; the Dominican Republic and El Salvador have developed norms which have not yet been published.

Much of the research has been evaluative, focusing on measuring the health services' efficiency. PAHO/WHO developed and promoted the methodology to conduct this type of research, which so far has been used to evaluate more than 1,000 services in Argentina, Brazil, Chile, Costa Rica, the Dominican Republic, Guatemala, Honduras, Panama, Uruguay, and Venezuela. At a regional meeting in Venezuela, where the results from these evaluations were presented, it was agreed that this type of research is a powerful tool for obtaining data on the efficiency of the services, as well as information on how maternal and child health problems may be handled by establishing different levels of complexity. One of the more striking findings was that in most countries, at least at the primary care service level, the physical facilities were least in need of improvement when compared with other aspects of the services. This direct evaluation of the services is a prerequisite to the proper design and functioning of local health systems.

Research on human reproduction has also been promoted, and PAHO/WHO actively participated in the committees of the WHO Special Program on Human Reproduction. The Region of the Americas received a total of approximately $US2.8 million from this program during 1987, and UNFPA also approved new research projects in Mexico (2) and Costa Rica on adolescence and sexual education in preschool children. The Organization continued to support and promote research on maternal mortality in Argentina, Brazil, Chile, Colombia, Cuba, and Mexico.

Technical advisory groups of both EPI and the diarrheal disease control program met to redefine research priority areas, emphasizing operational research for both programs. For example, lameness surveys were carried out in Costa Rica, while Panama and Nicaragua

investigated why children do not get vaccinated. Six new research projects were supported. In Brazil, Colombia, Guatemala, Mexico, Suriname, and Venezuela, the Organization supported six new research projects designed mainly to determine the knowledge, attitudes, and practices required to treat diarrheal diseases. Some of the operational research conducted in Brazil, Paraguay, and Venezuela includes diarrheal diseases, acute respiratory infections, and family planning. CLAP continued to promote research, to examine the epidemiology of caesarean section, the epidemiology of low birthweight, and other such topics. New studies involving the collaboration of various centers throughout the Region focused on services for mothers discharged early and low-risk newborns.

Communicable Diseases

In keeping with the Organization's policy of focusing on the development of local health systems, technical cooperation was primarily directed toward developing the health infrastructure and the technical and operational capacity of the health services and incorporating activities of surveillance, prevention, and control of major communicable diseases. Diseases of major concern are those transmitted by vectors, such as malaria, dengue, leishmaniasis, filariasis, and the rickettsial diseases; leprosy; other parasitic diseases; and significant viral diseases such as hepatitis.

In the area of control of vector-borne diseases, PAHO/WHO favored a subregional approach for mobilizing additional resources. The Inter-American Development Bank (IDB) and the Governments of Costa Rica, El Salvador, Guatemala, and Honduras signed agreements to develop a nonreimbursable technical cooperation project for malaria control. The Organization also continued to monitor and administer the PAHO/WHO-USAID project for training and research on malaria in Central America and Panama; in the English-speaking Caribbean plans were developed for a project on *Aedes aegypti* control to be funded by the Government of Italy. The Organization also assisted in developing projects in the Andean Subregion. In addition to a subregional approach, the Organization also pursued country-specific projects, such as the agreement with Brazil and the World Bank for the development of malaria and schistosomiasis control programs. Renewed efforts have been made to make the Collaborating Centers supportive to the activities of technical cooperation. PAHO/WHO was instrumental in obtaining a grant of $CDN236,000 for a program of immunization against hepatitis B in Saint Kitts and Nevis. Most of the funding for leprosy control was obtained from extrabudgetary sources.

One of the more ambitious attempts to mobilize local national resources and to synchronize control activities was undertaken in the Amazon Basin. Bolivia, Brazil, Colombia, Ecuador, Guyana, Suriname, and Venezuela, signatories to the 1978 Treaty of Amazonian Cooperation, sought PAHO/WHO's help in carrying out health programs in this region. PAHO/WHO organized a meeting for an *ad hoc* group in Brasília to deal with joint surveillance and control of malaria and *Aedes*. Plans also were formulated to define and develop an Amazon Basin health services network which would collect and analyze data to facilitate planning and evaluation of control programs.

PAHO/WHO concentrated on publishing technical documents and manuals which could be used in communicable disease programs: 14 technical papers on vector control were produced (seven in English and seven in Spanish); basic documents on the status of malaria, leishmaniasis, and schistosomiasis were prepared; and four papers on the biology, ecology, and control of important vectors such as *Anopheles albimanus*, *Aedes albopictus*, and *Aedes aegypti* were produced. To try and fill information gaps on leprosy in the countries, PAHO/WHO has continued to reproduce and distribute a broad range of documents which specifically deal with chemotherapy, bacterial resistance, and organization of control programs. Training modules also have been prepared, especially for Brazil.

PAHO/WHO participated in two major for-

mal training activities, the 44th International Course of Malariology and Environmental Sanitation in Maracay, Venezuela, and the Master of Science Course in Medical Entomology in the University of Panama; the Government of Venezuela offered fellowships to the former as part of its program of technical cooperation among Latin American countries. PAHO/WHO also supported a course, conducted at the University of South Carolina, United States of America, on the ecology and taxonomy of mosquitoes. Numerous national and subregional training events in various aspects of vector control were also conducted.

Because of the importance of malaria, the Organization channeled special efforts to reorient national control programs. Technical cooperation was specifically oriented toward encouraging the countries to carry out more detailed studies on the disease's epidemiology at the local level. PAHO/WHO continues to promote operational stratification in the malarious areas, as well as to select the most appropriate control measures for each epidemiological stratum, considering the available resources and the need to integrate malaria control activities into the general health services. Training at the national level focused on this approach. To promote the development of national plans and policies based on epidemiological stratification and integration of services, PAHO/WHO organized the Fifth Continental Meeting of Directors of Malaria Services and Directors General of Health. Participants from 23 countries concurred that the malaria situation was worsening—annual parasite incidence has increased and program coverage has diminished. The meeting as a whole accepted the new comprehensive approach and made several recommendations, which, if accepted and implemented, should lead to an improvement in the situation. Particular attention was given to the need for manpower development and research.

The Organization also sponsored a meeting for the Directors of Malaria Services of Central America and Panama, and several national events to promote an epidemiological approach for malaria programs.

PAHO/WHO continued to give special support to Brazil in leprosy control; five workshops, also supported by the National Division of Sanitary Dermatology, were held to analyze the situation and discuss new policies and norms for establishing a national plan of action. PAHO/WHO also supported clinical and therapeutic evaluation of patients and reorganization of control activities in the English-speaking Caribbean and assisted in preparing agreements and plans of action to seek external financing of programs in Costa Rica and Mexico.

Priority research areas were the structure, functioning, and utilization of health services; causes of transmission; trends of the intensity of transmission; group and risk factors; and ecology and control of vectors in relation to man.

PAHO/WHO continued to actively collaborate with the UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR); much of the research promoted in the Region was through this program. Given that the main problem is the lack of adequate institutional infrastructure to support research, the Organization continued to promote the reinforcement of the infrastructure in relation to specific research projects and the training of personnel to carry out necessary research. Among the projects which PAHO/WHO stimulated and/or supported were:

• Developing a protocol to test different antimalarial drugs in El Salvador.

• Testing the immunoperoxidase technique to diagnose and control the quality of serologic testing for *Trypanosoma cruzi*. Two laboratories in Brazil and one each in Colombia, Honduras, and Venezuela participated in this evaluation—one of the laboratories distributed 200 samples and the other laboratories conducted a blind evaluation. Participating laboratories already have sent their results; reagent costs amounted to $US2,500.

• Developing a kit to diagnose *Trypanosoma cruzi* infection in blood banks in Venezuela using immunoenzymatic microdrop testing for nitrocellulose.

• Testing for susceptibility to antimalarial drugs isolated from *Plasmodium falciparum*

and isoenzymatic and antigenic characterization of *Plasmodium vivax* strains with monoclonal antibodies originating from Belém, Brazil. PAHO/WHO provided $US2,500 for reagents.

- Susceptibility testing of antimalarial drugs in Venezuela.
- Detecting *Plasmodium falciparum* antigens in the blood of malaria infected individuals in Venezuela.

PAHO/WHO helped nationals prepare and submit proposals to TDR for possible funding. The largest of these, presented by the Institute Evandro Chagas of Belém, Brazil, is a multiproject proposal which intends to investigate the susceptibility of *P. falciparum* to antimalarial drugs; the possibility of monkeys acting as hosts for *P. vivax* and for leishmaniasis; the epidemiology of leishmaniasis; and the immunopathology of cutaneous leishmaniasis. The budget was $US140,000 for the first year of operation. Within the PAHO/USAID agreement, several protocols to study mosquitoes that are vector species for malaria and the biology and ecology of *Anopheles albimanus* were designed in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

PAHO/WHO helped prepare projects on immunization against hepatitis B in areas of hyperendemicity such as Colombia and Saint Kitts and Nevis, and steps were taken to begin production of hepatitis B vaccine in Latin America. The Organization also continued to support production of diagnostic reagents, particularly for HBc, IgG, and IgM antigenic markers and to cooperate in epidemiological studies on the prevalence, impact, morbidity, and mortality from hepatitis B infection.

PAHO/WHO promoted surveys on *Aedes albopictus* in the Dominican Republic and Mexico and helped coordinate preliminary collaborative studies on the biology and control of *Aedes albopictus* with Brazil and the United States of America.

Field studies on the live attenuated vaccine against the Junin virus were begun as part of the Argentine hemorrhagic fever research.

PAHO/WHO also directly supported efforts in several countries, such as Brazil's research on leprosy, for which the Oswaldo Cruz Institute has obtained $US300,000 from the Sasekawa Foundation of Japan.

Through staff stationed in Maracay, Venezuela, the Organization helped develop research to strengthen education in the School of Malariology. Indirect support also has been given to the Venezuelan Institute of Scientific Research (IVIC) and the Central University of Venezuela for research on *P. falciparum* antigens and on community participation in surveillance and control of Chagas' disease.

Changes in the approach of the Organization's technical cooperation have required a review of this program's goals. Regarding malaria, for example, it is no longer feasible to aim for eradication of the disease. Program organization, management, and effectiveness witnessed significant progress in Mexico, and this is reflected in the surveillance data. There also has been progress in the diagnosis and treatment of some parasitic diseases, but insufficient country programs make it difficult to assess the degree to which goals have been met.

While the Organization has met its goals with respect to information about vector control, progress in program execution leading to disease reduction has been minimal. There have been isolated successes in developing community-based schemes of control, but now these need to expand. TDR achieved some of its goals; nine countries have research policies and the research infrastructure is being strengthened particularly in Bolivia, Brazil, Colombia, Ecuador, Mexico, Peru, and Venezuela.

Food and Nutrition

This program continued to stress food availability and consumption, particularly at the household level; prevention and management of malnutrition; and promotion of an adequate nutritional status for both individuals and the community. Activities in PAHO/WHO's technical cooperation with the coun-

tries fell into three major categories: formulation, analysis, and evaluation of programs aimed at improving food availability for families; strengthening nutrition surveillance systems; and improving communication and education in nutrition.

Two institutions, Colombia's Universidad del Valle and Cuba's National Institute of Nutrition and Food Hygiene, joined the Regional Operational Network of Food and Nutrition Institutions (RORIAN). The Institute of Nutrition of Central America and Panama (INCAP) promoted technical cooperation among countries by using consultants from that subregion. The Caribbean Food and Nutrition Institute (CFNI) pursued the same policy, employing national professionals and contracting local experts and temporary advisers. In addition to allowing more nationals to participate in activities related to cooperation in food and nutrition, this effort also broadened the Institute's capabilities.

PAHO/WHO's technical support helped design and evaluate country projects of the World Food Program whose Committee on Food Aid, Policies, and Programs approved requests for food aid development projects in Colombia, Ecuador, El Salvador, Guatemala, Haiti, and Mexico for a total of $US62.98 million. The Organization also began negotiations with the Inter-American Development Bank for a project to enhance the formulation of food and nutrition projects in the countries.

INCAP, an active participant in the Plan for Priority Health Needs in Central America and Panama, has been responsible for much of the technical cooperation in nutrition in that subregion. The Center received $US2.9 million to support research and human resource development, and projects funded by USAID and the French and Swiss Governments continued to operate. CFNI's extrabudgetary funding increased.

The Joint PAHO/WHO-UNICEF Nutrition Support Program (JNSP), an ongoing example of successful interagency collaboration, mobilized resources for national programs to improve the nutritional status of mothers and children by using the primary health care approach. The program aims at reducing morbidity and mortality in children under five, improving their growth and development, and improving the nutritional status of mothers. It also is designed to help the health sector lead other sectors, particularly agriculture and education, in nutritional matters.

Eight projects were approved in seven countries, and funds totaling $US13.7 million have been allocated to them for five years of operation. In Haiti, a project to control diarrheal diseases and promote breastfeeding has been executed entirely by UNICEF; PAHO/WHO's Food and Nutrition Program, in collaboration with the Maternal and Child Health Program, has provided support and follow-up. Three projects targeted the eradication of endemic goiter and cretinism: in Bolivia, where Phase I of the project has been completed and Phase II has been approved by the Italian Government, the population's awareness of iodine deficiency problems has already increased; in Ecuador, the project is designed to supplement a pilot project conducted through a bilateral agreement with the Belgian Government, extending its scope from three provinces to the entire country; and in Peru, a technical unit for control of iodine deficiency disorders formed in the Ministry of Health has established close collaboration with the salt industry. The remaining four projects deal with more general aspects of food and nutrition: Peru began implementing activities to decentralize operations; Nicaragua's project has become the backbone of that country's Five-Year Food and Nutrition Plan; and a mid-term evaluation of JNSP was conducted in Dominica and St. Vincent and the Grenadines, where CFNI provides support and advice with funds from the project.

This year saw the publication and dissemination of many manuals, reports, scientific papers, and audiovisual materials. The final edition of the "Training Module for the Promotion of Breastfeeding" was ready for use by family physicians and pediatricians; a condensed version also was prepared for intermediate level health workers who promote breastfeeding in the health services. The

widely distributed report of the workshop, "National Strategies for the Eradication of Endemic Goiter and Cretinism in the Andean Subregion," discussed strategies such as legislation, salt iodization and its monitoring, commercialization and distribution, organization of cooperatives among small producers of iodized salt, epidemiological surveillance, use of iodized oil as an alternative or complementary therapy, and educational communication.

INCAP's library was reorganized to better serve its users: some 5,500 users in Central America and Panama and 1,500 in other countries receive material on child survival. In response to the demand for bibliographic material on supplementary feeding programs the bulletin *PROPAG* was started, and the INCAP division of agricultural sciences continued to publish its bulletin *Amaranto*, one of the best information sources on research advances on this cereal. Publication of the *Latin American Nutrition Society: Latin American Archives on Nutrition*, the only journal of its kind in Latin America, continued, although with limited distribution.

Preparing and distributing publications on chronic diseases, oral health, nutrition education, and material for community use also constituted a large portion of CFNI's work. *CAJANUS* continued to be a major source for distributing nutrition information in the English-speaking Caribbean. An evaluation of the radio series "With Healthy Living" was conducted; although the series lacked a wide audience, the evaluation found its intrinsic value high and recommended that it should continue.

Human resource development was carried out chiefly through CFNI and INCAP. CFNI collaborated with the Barbados Community College on a seven-month course that granted a Diploma in Community Nutrition. The Center also participated in a broad spectrum of training activities for groups of professionals, including health workers; primary, secondary, and tertiary level teachers; and dietetic interns. It also provided assistance in setting up continuing education programs for professional associations and nongovernmental organizations. A serious effort was made to evaluate the training activities in 1987.

INCAP conducted a study on human resource needs in the countries of the subregion, and collaborated in formulating and implementing national plans based on the study's results. Thirty-three students from the countries of the subregion and from Chile, Venezuela, and Spain are taking the postgraduate course in food and nutrition; 12 are taking a two-year course in food science and technology. During the year the INCAP School of Nutrition and Dietetics was transferred to the University of San Carlos of Guatemala. In INCAP's ongoing program of tutoring in specific areas, 93 professionals from 12 countries, including 68 from Guatemala, were trained.

Many efforts to influence policies and programs at the country level have been and will continue to be guided by operational research conducted by PAHO/WHO. Of note was the study, completed this year, on food and nutrition interventions for Latin American and Caribbean low-income populations, jointly conducted by PAHO/WHO, RORIAN, and the Chilean Institute of Nutrition and Food Technology. This study comprises three parts: a catalogue of programs of food subsidies and supplementary feeding in Latin America and the Caribbean (1970-1984); a bibliographic synthesis of food aid and food price support programs; and case studies of six supplementation programs and controlled subsidies in Brazil, Chile, and Colombia and a general program review of food price subsidies in Peru.

The study showed that almost every country of the Region has intervened in favor of the poor, usually through nationwide supplementation programs directed primarily at mothers and children. For the most part, health and education sectors were involved, and the majority of the programs received most of their funds from external sources—only 22% of programs examined ran exclusively on government funds. In general, to have a nutritional impact among the poor, a program does better by directly distributing food than

by providing a general food subsidy. An additional advantage to this approach is that it allows programs of other sectors, such as education and environmental health, to be integrated with the food program. The study also pointed out the usefulness of having a nutritional surveillance system in place which would permit programs to better respond to changes in the nutritional status of the population. The study's results are being analyzed in detail and will form the basis for discussions on the most appropriate policies the countries might adopt with respect to food programs.

INCAP continued to conduct research in agricultural and food sciences, health and nutrition, and social sciences and nutrition. The research also contributed to the transfer of technology to the countries and served to train nationals from universities and research centers, particularly in Central America and Panama. The Center published 32 papers.

CFNI completed a study examining socioeconomic, anthropological, and health aspects of street food and vendors. The impact of migration on health and nutrition was also studied in Jamaica and Saint Lucia—households with migrants to the USA had all experienced physical improvement, increased household income, and the positive benefits derived therefrom.

PAHO/WHO's technical cooperation with the countries increasingly emphasized more food, its availability, and its consumption at the household level, reflecting the countries' need to ensure that the economic crisis exerts the least possible damage on the nutritional status of the most vulnerable population groups.

Environmental Health

This program comprises water supply, excreta and waste disposal; solid waste management and housing hygiene; prevention and control of environmental pollution; and workers' health. The Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) and the Pan American Center for Human Ecology and Health (ECO) continued to provide technical cooperation. During 1987, PAHO/WHO began working with the countries to develop the Regional Program on Chemical Safety in accordance with Resolution XIII of the XXII Pan American Sanitary Conference (1986).

Emphasis on the development of national infrastructure contributed to strengthening institutions and human resources in the sector. PAHO/WHO also began studying local environmental health units as a first step in strengthening local health systems. In terms of a geographical approach, attention was given to ongoing projects within the Plan for Priority Health Needs in Central America and Panama and to the start of activities to support the Caribbean Cooperation in Health initiative. In workers' health, technical cooperation within the strategy of primary health care concentrated on promoting and expanding coverage through basic occupational health services.

Resource mobilization remained a key strategy, not only as a means to attract financial resources but also to foster participation of the many agencies and institutions which can support sectoral development. A notable effort was an institutional development study aimed at revitalizing the Inter-American Association of Sanitary and Environmental Engineering (AIDIS). The Organization and AIDIS are collaborating in preparing two technical notebooks addressed to policy makers, one on the role of sanitary engineering in the economic and social development of the Region and the other on policies for financing water and sanitation. Forming networks of collaborating institutions also has been an important element in prevention and control of environmental contamination; ECO has promoted networks in environmental epidemiology, toxicology, and pesticides and health.

PAHO/WHO continued to assist countries in the execution of extrabudgetary projects funded by the Inter-American Development Bank (IDB), the World Bank, the Agency for Technical Cooperation of the Federal Republic of Germany (GTZ), and the United Nations Development Program (UNDP). In water and

sanitation alone there were 29 projects representing a total of some $US26.2 million in funds. Five were concluded this year, 20 were under way ($US22.2 million), and four ($US2.9 million) were under negotiation. Highlights among these projects were the national plan for rural sanitation in Brazil; the efficient use of water in Mexico; the development of the Ecuadorian Institute of Sanitary Works; the development of water resources in El Salvador; and the Master Plan for water supply and sanitation for ten cities in Bolivia.

During the year, PAHO/WHO continued the third cooperation agreement with IDB under which assistance was given for preparing projects for financing water and sanitation in Argentina, Brazil, Colombia, Honduras, and Venezuela.

As part of the Plan for Priority Health Needs in Central America and Panama, special attention was given to resource mobilization in the subregion. An evaluation conducted in May 1987 indicated that 23 environmental health projects were being prepared and 20 environmental health projects were completed at a cost of $US163 million. PAHO/WHO collaborated with the Caribbean Community (CARICOM) to prepare a basic proposal for approximately $GDM4 million to be submitted to GTZ as part of the Caribbean Cooperation in Health initiative.

Both CEPIS and ECO continued to develop new methods to mobilize human resources. The program for young professionals at CEPIS continued to be a success—a Brazilian, a Cuban, and three Peruvians completed their residency, and eight new residents arrived. ECO received professionals from Canada, Cuba, and the United States of America. The Center also continued to provide support to the National Autonomous University of Mexico in carrying out the Master's program in Ecology; this program's first class graduated in 1987. Additional efforts concentrated on mobilizing resources to start a course on organization and management in occupational health.

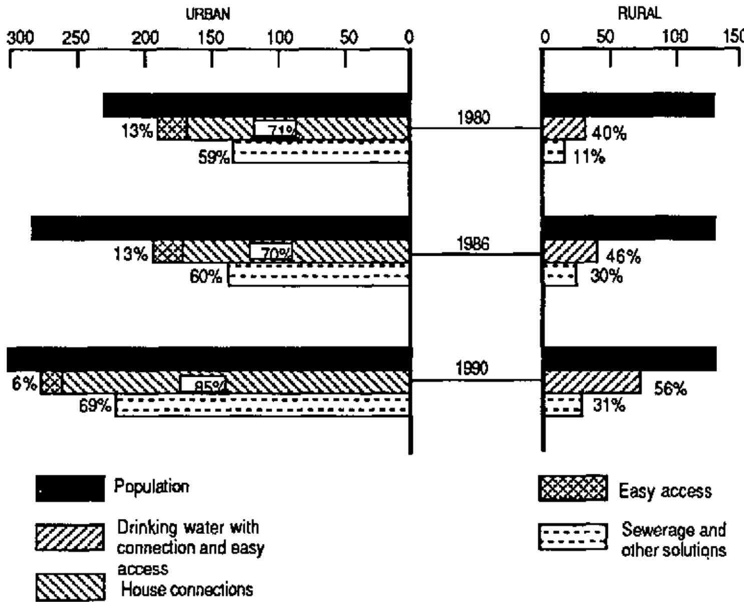
PAHO/WHO distributed environmental health information consisting of material collected from the countries themselves or from scientific publications, manuals, and other materials for use in program development. Important information collected from the countries dealt with water supply and sanitation services, and represents data essential for monitoring progress in the International Drinking Water and Sanitation Decade. On the average, 71% of the total population was served with drinking water; the figure for urban populations was 83% and for rural populations it was 70%. For sewerage and excreta disposal, only 60% of the population was served. This information is being analyzed in the countries and simultaneously compared with national goals which have been set. Figure 1 shows the progress made in 27 countries.

The Pan American Network of Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA), promoted and assisted by CEPIS, continued to provide much of the information about sanitary engineering in Latin America. Data bases were updated, and a total of 738 microfiched documents were sent to the 23 national coordinating centers. Twenty-seven participants from 23 centers in 15 countries attended a coordination meeting.

ECO continued to promote and expand ECOLINE as a regional system for obtaining and disseminating information on environmental contamination which can be integrated into the REPIDISCA system. The newsletter, *Human Ecology and Health*, continued to be published. Since the main language in REPIDISCA is Spanish, it has been difficult to establish the system in the English-speaking Caribbean; however, a similar information system in English, which will relate to REPIDISCA, is being considered for the Caribbean Environmental Health Institute in Saint Lucia. PAHO/WHO produced, adapted, or obtained directly from other sources many guides, manuals, and other documents on workers' health which were distributed to a wide range of professionals and institutions.

During 1987, 14 countries reported 235 courses, workshops, seminars, and other training events in different fields of environ-

Figure 1. Urban and rural population with drinking water and sewerage service in Latin America and the Caribbean 1980, 1986 and targets set for 1990.



The information on 1980 and 1990 provided by 27 countries has been updated with new data made available in 1983 and 1985.

Increase in rural sanitation is due to adjustment in 1986 of previously reported data by Brazil.

mental and occupational health with a total of 10,013 participants. A directory of 46 training programs in sanitary and environmental engineering was prepared and distributed, and subsequently a Regional meeting was held where nine schools from seven countries agreed to create a Latin American Association of Schools of Sanitary and Environmental Engineering. This will facilitate and stimulate communication and cooperation among schools, particularly in teaching and research. It was also agreed that steps should be taken to define a minimal program for courses of sanitary and environmental engineering.

PAHO/WHO also assisted in subregional training activities. As GTZ support for the first phase of the Central American project to train technical personnel came to an end, an extension is being prepared; project activities are carried out with IDB support. The Caribbean Water Management Project continued to train workers, especially from the Eastern Caribbean.

Most of the training in health and environmental pollution was conducted by ECO, which selected, adapted, and prepared necessary material for training in epidemiological surveillance and environmental monitoring, epidemiological research on environmental risks, basic and intermediate toxicology, prevention of intoxications, and reduction of specific risks from pesticides and heavy metals. ECO participated in or promoted some 44 workshops attended by 1,435 nationals.

The Organization laid the groundwork for studying the infrastructure of environmental health units within the Region's Ministries of Health as a steppingstone for developing proposals to strengthen local health systems and enable them to fulfill their environmental and occupational health functions. One of the methods through which CEPIS promoted the

policy and guideline development for selected topics was through "technical nuclei" meetings composed of international and national experts. The third meeting of the technical nucleus of the Regional program of evaluation and management of toxic substances was held at CEPIS with the participation of Argentina, Brazil, Canada, Colombia, Cuba, Mexico, Peru, Puerto Rico, and the United States of America. The technical committee of the Regional program for evaluation and control of contamination of underground water was held in São Paulo, Brazil, with support from local institutions and participation from Argentina, Brazil, Cuba, Mexico, Peru, and Puerto Rico.

PAHO/WHO developed ways to offer better technical cooperation in solid waste management. Studies to understand currently used managerial systems were carried out in Bolivia, Chile, Colombia, and Jamaica and, on the basis of these findings, a workshop was held to prepare guidelines for policy decisions at the national level. The results of these studies could also be used to complement diagnoses made in the Bahamas, Guyana, Haiti, Honduras, Paraguay, and Peru.

PAHO/WHO and IDB organized a joint seminar on the environmental impact of development projects; both agreed to create a working group to address the issue.

The Organization selected eight countries for promoting the development of national programs for workers' health. The best results so far have been obtained in Colombia where a national program already has been established. Guatemala, Panama, and Paraguay have sought support for preparing national plans, and Paraguay has received assistance in preparing legislation on workers' health.

PAHO/WHO has successfully promoted the national development of mixed oxidant gas (MOGGOD) technology for water disinfection; operational research for this project was jointly supported by UNDP, PAHO/WHO, and the participating countries, with work carried out in Argentina, Bolivia, Brazil, Colombia, Ecuador, Guatemala, Mexico, Panama, and Peru. This technology will potentially improve water quality in small systems with technology that can be applied locally without imported materials. A meeting of participating researchers was organized to compare results and advise on possible modifications of the technology or its application.

The impact of environmental health programs during this year can be assessed quantitatively in terms of new extrabudgetary resources mobilized by PAHO/WHO, and also in the number of personnel trained. Equally important is the progress achieved in the International Drinking Water and Sanitation Decade activities. There has been clear evidence of program organization at the national level, such as the use of the norms and guidelines for occupational health prepared by PAHO/WHO. Constant requests for bibliographic information from established systems such as REPIDISCA and ECOLINE and the work of the national centers also are proof of the effectiveness of the actions carried out during the year. Of special importance are achievements in the subregional initiatives, efforts to strengthen technical cooperation, and the search for extrabudgetary funds. The clearest indicators of success during the year have been the willingness of the governments to modify their national programs and the concrete results achieved, such as reduced water losses in Mexico as a result of a PAHO/WHO coordinated program.

Veterinary Public Health

PAHO/WHO provided technical cooperation in zoonoses control, control of foot-and-mouth disease and other vesicular diseases, food protection, laboratory animal science, and overall strengthening of veterinary public health services with contributions to other health programs. Most of the Organization's cooperation was conducted through the Pan American Zoonoses Center (CEPANZO) and the Pan American Foot-and-Mouth Disease Center (PANAFTOSA).

The Organization focused its cooperation in several subregional and bilateral efforts in or-

der to mobilize national resources and national commitment to priority programs. Among the more successful has been the South American Commission for the Control of Foot-and-Mouth Disease (COSALFA), for which PANAFTOSA acts as *ex officio* secretariat, and the Commission on Veterinary Inspection of Meat of the River Plate Basin, for which CEPANZO acts as secretariat—these commissions have brought about greater intercountry collaboration and cooperation. PAHO/WHO also strengthened intercountry collaboration for efforts against rabies; joint actions have been undertaken between Mexico and the United States of America, and among El Salvador, Guatemala, and Nicaragua. The Central American countries have met to exchange experiences and have shared personnel and resources as well. The Organization facilitated the signing of an agreement between Brazil and Paraguay whereby these countries will work together to eliminate urban rabies; Brazil has provided vaccine for use in Paraguay. PAHO/WHO also has secured the support of the U.S. Food and Drug Administration (FDA) to develop model food protection programs in Costa Rica and Jamaica.

PAHO/WHO, through an agreement with the Mérieux Foundation and the Order of Malta, secured approximately $US3.5 million from the European Economic Community (EEC) for the elimination of urban rabies in Central America; in addition, it prepared a proposal for a similar project in the Andean countries, also to be presented to the EEC for funding. The Organization also obtained additional resources from the U.S. National Institutes of Health (NIH) and the U.S. Agency for International Development (USAID) for expanding field activities of the Manuel Moro Sommo Peruvian Primatology Project in population dynamics and distribution of *Aotus* and *Saimiri* species. Interest in these neotropical primates stems from their biomedical value as models for a number of human diseases and their importance in the development and testing of a malaria vaccine. During 1987, PAHO/WHO succeeded in drawing approximately $US8.5 million from extrabudgetary sources to support activities in this program area.

A major accomplishment was the publication of a series of manuals published in nine volumes by the Regional Program for Training in Animal Health for Latin America (PROASA) covering veterinary quarantine, communication, administration of animal health programs, and epidemiological surveillance. Financed by the Inter-American Development Bank (IDB), these manuals will become part of the PAHO Expanded Textbook and Instructional Materials Program.

PANAFTOSA and CEPANZO prepared and distributed specialized manuals and technical documents throughout the Region, and both continued to publish their bulletins. PANAFTOSA's epidemiological bulletins, a weekly on aftosa and a monthly on vesicular diseases, constitute the major source of information on the occurrence of these diseases in the Americas; CEPANZO's quarterly epidemiological surveillance reports serve a similar function regarding rabies. The CEPANZO library distributed some 19,000 items to the countries and conducted 14 bibliographic searches for the Member Countries. To have access to up-to-date information on food safety, the Organization began to subscribe to the electronic data base and Electronic Bulletin Board of the U.S. Food and Drug Administration.

Most of the training was conducted by the Centers. CEPANZO gave training to 100 fellows from Central America, Mexico, Panama, the Caribbean, and South America during 1987. Some training at PANAFTOSA emphasized organization and strengthening of animal health services, and the Center also gave training in specific techniques such as cell culture, characterization of polio virus strains, and preparation and utilization of monoclonal antibodies and ELISA. In addition, some 300 professionals were trained in their own countries in aspects of zoonoses or food protection.

A major event in 1987 was the V Inter-American Meeting, at Ministerial Level, on Animal Health (RIMSA), where 35 countries and observers from Spain and seven interna-

tional organizations participated. Highlights of this meeting were the decision to launch an effort to eradicate foot-and-mouth disease from South America by the year 2000 and to create a commission of countries free of foot-and-mouth disease. Various activities already in progress will favor achievement of this goal: an agreement among Argentina, Brazil, and Uruguay will help to attack the problem jointly; projects among IDB, Uruguay, and Venezuela will strengthen their eradication efforts. PAHO/WHO continues to support the countries in the development of their individual and joint plans.

PAHO/WHO continues to monitor progress of the plan to eradicate urban rabies by 1990. A meeting in Brazil, with participants from 15 countries, discussed requirements for eradication; the Fifth Subregional Meeting on Rabies in Central America was held in Honduras with delegates from all the countries of the isthmus. The fight against rabies has favored intersectoral coordination and collaboration, particularly between health and agriculture, and intersectoral committees have been established in several countries to deal with different aspects—the field, the laboratory, surveillance, and research—of the program. The Organization also continued to collaborate in other zoonoses such as hydatidosis, taeniasis, cysticercosis, leishmaniasis, tuberculosis, brucellosis, and leptospirosis. The programs against leptospirosis in the English-speaking Caribbean deserve special attention. PAHO/WHO has also noted the tendency, as seen in Argentina, Brazil, and Colombia, to transform antirabies centers into centers for control of urban zoonoses.

The Organization concentrated its efforts in food protection by assisting countries in preparing and developing national programs; to this end it organized a series of course-workshops on planning, management, and evaluation of national plans. One in the Caribbean was conducted with the assistance of the U.S. Food and Drug Administration and private industry. The course-workshops, in turn, resulted in a series of seminars, including one organized for Central American countries with the participation of the Dominican Republic and Mexico. PAHO/WHO was assisted by the U.S. Food and Drug Administration in organizing the First National Workshop on Food Protection in Jamaica, which led to the development of a national plan for food protection. In Costa Rica, PAHO/WHO cooperated in preparing a national plan, helped develop a proposal to seek extrabudgetary funds, and assisted in revising food legislation and in preparing an official food inspection manual. It supported the coordinating committee of the Codex Alimentarius for Latin America and the Caribbean by organizing the third workshop on standards for food and health in Cuba.

Several research activities were conducted. Regarding foot-and-mouth disease, PANAFTOSA studied methodological aspects, the application of the Regional characterization of the foot-and-mouth ecosystems, and how this information might be used to plan the disease's control and eradication. A series of mathematical models were developed to explain the disease's behavior in various ecosystems and its possible responses to different programmatic approaches. Laboratory research on the antigenic, immunologic, and biochemical characterization of various strains of the foot-and-mouth virus continued. Much of the immunological research was conducted with national diagnostic laboratories; work on the biochemistry of the South American foot-and-mouth viruses and the preparation of monoclonal antibodies was done in collaboration with research centers in Argentina and Spain.

PAHO/WHO carried out research on the distribution and other characteristics of *Aotus* in Peru, as well as on the breeding in the wild of *Saguinus mystax*.

Research conducted at CEPANZO resulted in the development and application of techniques to reduce costs of serological surveys for detecting cases of human hydatidosis, measures that already have shown benefits in case detection and control. The same techniques may be applied to other diseases to reduce their costs of serological surveillance.

Varied direct assistance was given to the

countries. PANAFTOSA supplied 8.5 million doses of oil adjuvanted foot-and-mouth disease vaccine to Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela. This vaccine will be used in demonstration areas according to border strategies of control and eradication agreements, and to combat epidemic emergencies. During the outbreak in Chile, reagents were provided to test the bovine sera as part of the surveillance system for controlling the outbreak.

CEPANZO and PANAFTOSA supplied laboratory animals to various countries for experiments as well as for breeding stock, and CEPANZO began to formulate a Regional program for laboratory animals to enhance intercountry cooperation in this field. The Organization supported strengthening of laboratory networks, especially in Mexico. Of note is the support given to Guatemala during an outbreak of shellfish poisoning paralysis; the expertise which PAHO/WHO helped mobilize may have prevented as many as 300 deaths.

The impact of PAHO/WHO's technical cooperation in 1987 can be seen most clearly in specific areas such as rabies control. Much of South America is now free of urban rabies, and important advances have been made in controlling the disease in Central America, the Southern Cone, and the Andean countries. Main areas of concern continue to be Bolivia, Northern Brazil, Mexico, and Paraguay. Given the acceleration seen this year, coupled with significant extrabudgetary resources to come, there is every expectation that the goal of eradication of urban rabies by 1990 will be achieved.

While it is difficult to see progress in control of foot-and-mouth disease, data show that attack rates have fallen from 28.0 per 10,000 livestock population in 1971-1981 to 7.0 in the last five years.

Direct impact of the food protection program in the short term is impossible to measure, but by year's end, 15 countries had prepared basic documents or were developing national food protection programs.

IV. SPECIAL INITIATIVES AND PROGRAMS

To implement its Managerial Strategy, PAHO/WHO has developed special programs and initiatives to make the most of its role as a catalyst and to mobilize national and international resources in support of activities aimed at selected health priorities. These special programs and initiatives require a high level of commitment and dedication from the countries and from PAHO/WHO. They are based on a joint strategic planning process that encompasses setting priorities, planning activities, mobilizing resources, and implementing projects.

Special Programs

Special Regional programs address women, health and development; EPI and poliomyelitis eradication; prevention of Acquired Immunodeficiency Syndrome (AIDS); and emergency preparedness and disaster relief coordination.

Women, Health, and Development

The Special Subcommittee on Women, Health and Development met in June to examine the program's activities and receive reports on the Organization's work in this field. The specific topics examined were: maternal mortality, cancer, smoking, drug and substance abuse, occupational health, health of elderly women, mental health, health education, problems of adolescents, community participation, and the status of women in PAHO/WHO. The Subcommittee approved a document regarding women, health, and development that was subsequently ratified by the Executive Committee at its 99th Meeting.

To strengthen the national focal points, which function as links among PAHO/WHO's program, the health ministries, and institutions that deal with women's issues in the countries, a Latin American meeting on women, health, and development was held in Caracas, Venezuela, in October. The focal points of the program for women, health, and development in PAHO/WHO Representations in 19 countries of the Region, and representatives from IDB, the Inter-American Commission of Women, USAID, UNICEF, and the United Nations participated in the meeting and issued important recommendations to the countries, the Organization, and other international agencies on strengthening regional strategies approved in 1986.

In August a PAHO/WHO working group met in Washington, D.C., and drew up a regional research plan to help countries define outlines for research on women in the workplace. Short-term consultants from Brazil, Colombia, and Venezuela worked with technical staff from several PAHO/WHO programs to prepare a document setting research priorities and establishing a methodology. In response to a request from the Special Subcommittee, a study of women's double workday, to be conducted in three countries, was agreed on.

The Organization prepared a new annotated bibliography on topics of importance to women and collaborated with the American

Association of Retired Persons to compile information on the status of middle-aged and elderly women.

A Third National Meeting on Women, Health and Development, cosponsored by PAHO/WHO and the Ministry of Health and Social Action of Argentina and attended by some 300 women from Argentina, Brazil, Cuba, the Dominican Republic, Nicaragua and Venezuela, UNICEF, and PAHO/WHO, was held in November in Buenos Aires.

A Jamaican consultant began a study on the health and general status of women in eight Caribbean countries, which will be discussed at a meeting on this subject scheduled to be held in Trinidad and Tobago in March 1988.

The Organization supported several projects and activities that address the health requirements of women. Two subregional workshops on cervical cancer control were held during the year, one for the English-speaking countries and one in the Andean area. In addition, national workshops were held in Colombia and Venezuela.

Cancer prevention education for women continued to be promoted, especially routine self-examinations and lifestyle changes. An analysis of the epidemiology of breast cancer in the Region was begun, as well as an evaluation of mammography as a diagnostic tool. Guides were prepared for evaluating cervical cancer control programs.

Some 34,000 maternal deaths are estimated to occur each year in the Region due to causes associated with pregnancy, childbirth, and post partum, most of which could be prevented with available technologies. With cooperation from WHO, a document on maternal mortality was reviewed for subsequent discussion at the regional meeting of program research and operating personnel to be held in 1988. Based on this document a booklet for disseminating information to the community, the media, students, and women's organizations on the problem of maternal mortality and intervention strategies for controlling it is being prepared for the same meeting. In research, the Organization promoted projects to improve maternal mortality records, family planning services, and prenatal, obstetrical and postpartum care. In Argentina an investigation to study these topics in Buenos Aires was supported, and broadening the scope of the project to four provinces was approved. Project preparation was completed in Brazil and Colombia and continued in several other countries. In Mexico a project to study the biopsychosocial factors in maternal mortality was prepared.

Emphasis also was placed on the importance of evaluating maternal and child care services to improve their quality and help reduce the high maternal death rate linked to organizational problems in the services. Some 200 obstetrics and gynecology units in 15 countries had been evaluated by year's end.

A guide to community education on perinatal health, a manual on community health education for adolescents, a supplement to the health guide for adolescents, and a guide to community education in child growth and development were prepared during the year. A bibliography on health education and community participation, a study on community participation and women's health development, and a cost-benefit study on community participation in water and sanitation projects were also prepared.

Regarding training of personnel, audiovisual materials on health education were prepared.

The Organization continued its efforts to increase women's participation in its programs as a way to reach the target of staffing 30% of professional and upper-level posts with women by 1990, while simultaneously increasing the hiring of women as temporary consultants and fostering their participation in meetings and seminars. Identification and recruitment of women candidates was promoted through the personnel office, PAHO/WHO Representations and national focal points of the women's program.

A medium-term regional plan for continued application of the regional strategies in this field as a high-priority goal was prepared, discussed by the Director's Internal Advisory

Committee, and submitted for consideration by the technical programs most directly related to the Women, Health and Development Program.

EPI and the Eradication of Polio

In order to eradicate polio, the countries and territories of the Region have set out to transform immunization into a social force, galvanizing the health system and the community into action. Countries have addressed disease reduction efforts of the Expanded Program on Immunization (EPI) by using polio eradication activities to spearhead the improvement of their immunization programs.

To eradicate poliomyelitis, the Ministries of Health pursue a three-pronged strategy: 1) maintaining high levels of coverage with oral polio vaccines in each municipality of a given country; 2) assuring early detection of suspected polio cases; and 3) implementing control measures promptly.

To assure availability of necessary resources and to reinforce their efforts, the Ministries of Health have prepared national plans of action that outline activities required to eradicate polio and provide cost details for each activity. The plans also delineate essential external resources to be provided by various agencies. PAHO/WHO, Rotary International, USAID, UNICEF, IDB, and the Canadian Public Health Association (CPHA), currently provide funds that amount to approximately $US80 million. To coordinate the inputs in each country, the agencies have formed an Inter-Agency Coordinating Committee (ICC).

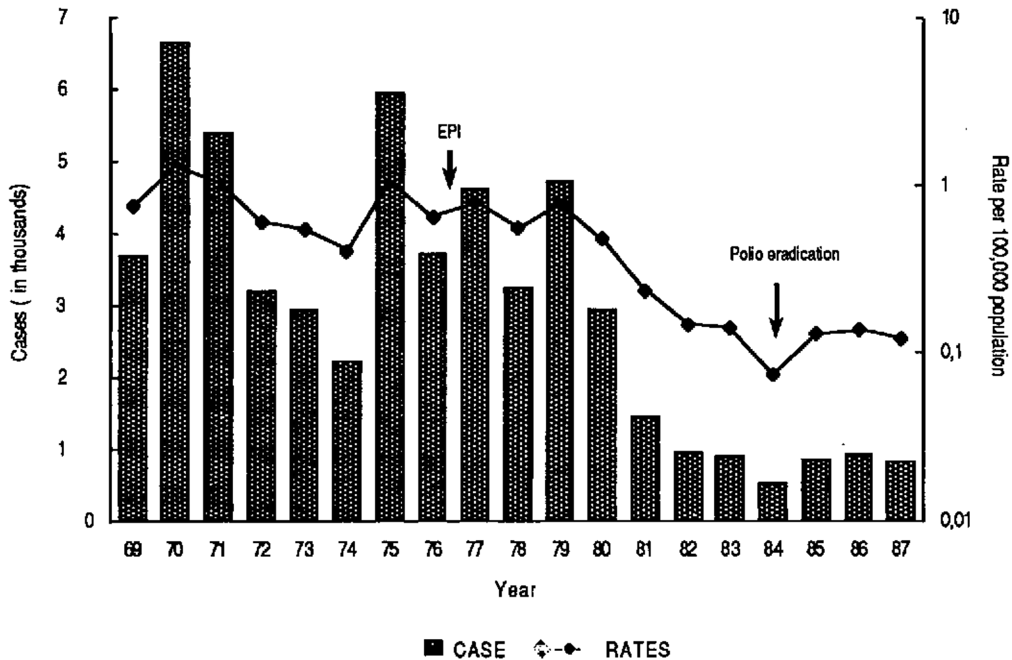
Since September 1985, when the XXXI Meeting of the PAHO Directing Council approved the Regional EPI Plan of Action to eradicate the transmission of the wild poliovirus by 1990, two major advancements have occurred: by dramatically improving their polio surveillance systems, countries can now confidently evaluate the extent of transmission of the wild poliovirus and respond aggressively to known outbreaks; and 2) as a result of their national plans of action, the countries have accelerated their immunization activities. Fourteen countries use national vaccination day (NVD) programs to improve coverages with the different EPI antigens; some countries use two NVDs to immunize their populations and others use three. An excellent example of this approach was the decision of the Heads of State of the Central American countries to hold a Central American Vaccination Day in conjunction with World Health Day; another approach is to provide different antigens on separate NVDs.

To accelerate immunization activities, it is essential to mobilize the political will and pursue new techniques of communication and social mobilization. Social communication becomes a vital component of EPI by educating populations about diseases preventable by vaccination, by endowing them with the right to vaccination services, and by mobilizing different social sectors and organizations to support immunization and epidemiological surveillance.

The number of polio cases reported during 1969-1987 is presented in Figure 2. In 1986, 1,552 probable cases were reported to PAHO/WHO, of which 943 (60%) were confirmed as polio; in 1987, the number of probable and confirmed cases decreased to 795. Of the 943 cases confirmed in 1986, specific information was received for 890 cases, indicating that 79% of these were in children under five years of age, that the highest age-specific morbidity was in children less than one year of age, and that 70% had available vaccination programs, but 61% of these had received less than three doses of OPV. Figure 3 shows polio cases reported by country during 1986-1987. The percentage of cases confirmed by the countries ranged from 100% in the Dominican Republic to 18% in Honduras, with only Venezuela and Honduras confirming less than 50% of their reported cases for the year 1986. This suggests that the PAHO/WHO case definition of suspected and probable cases is reasonably specific.

Surveillance activities continue to improve thanks to increased training and resources. Active research in Colombia, El Salvador,

Figure 2. Annual reported poliomyelitis morbidity Americas, 1969 - 1987.



Source: PAHO Provisional Data

Mexico, and in many other countries accounted for an increase in the average number of reported cases. Case notification delays—the interval between onset of symptoms of poliomyelitis and notification—is still above the two-week maximum which is the standard for reporting efficiency.

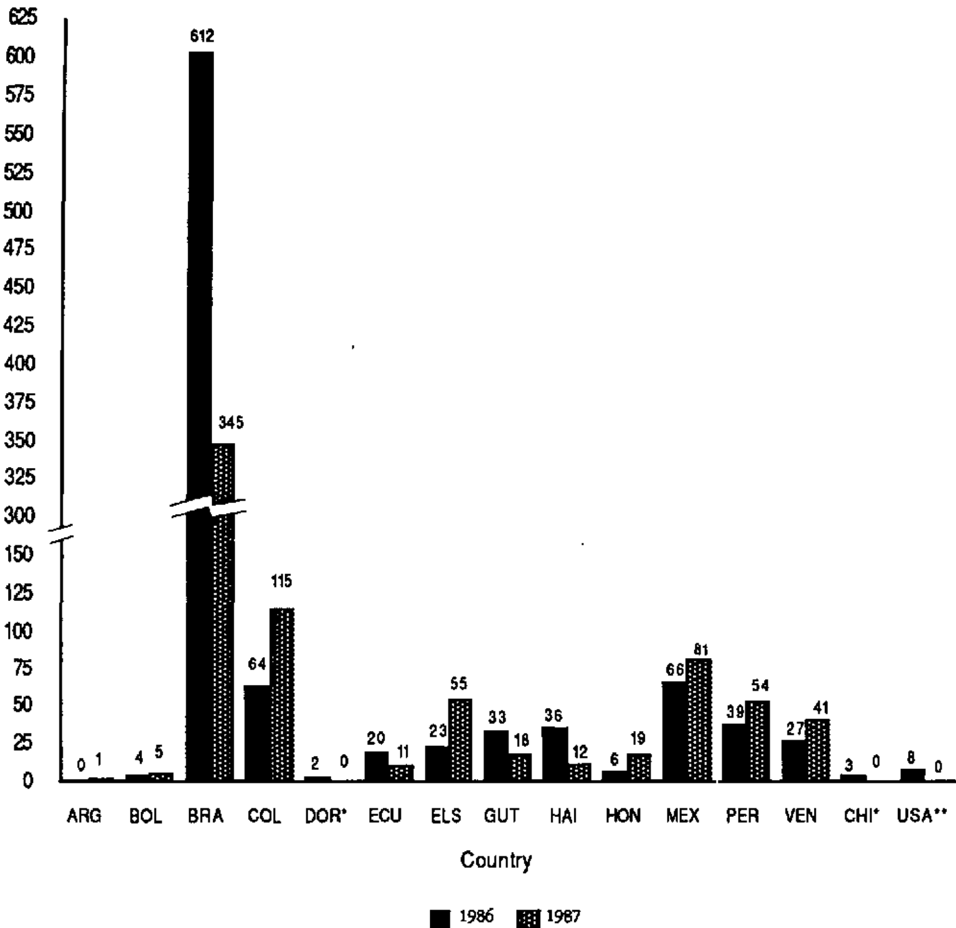
Although surveillance systems are essential for measuring program impact, they are still insufficiently developed to determine program needs. To foster these systems, countries are instituting, as in the case of poliomyelitis, a system of weekly negative reporting of cases; weekly reports on paralytic diseases are received from every health facility in each country as well. This type of positive and negative reporting system should be in place by the end of 1988 and should also include measles, tetanus (particularly neonatal), and other diseases included in EPI.

With the gradual organization and improvement of the Regional network of laboratories during 1987, countries were able to perform diagnostic testing on specimens received from probable polio cases. Laboratory results confirm that poliomyelitis is mainly due to the circulation of polio types I and III.

Most of the cases reported are confirmed by the presence of residual paralysis 60 days after the onset of symptoms, but there are delays in the confirmation. The disease most frequently confused with poliomyelitis is Guillain-Barré syndrome. Perhaps physicians misdiagnose poliomyelitis because they assume that if their country has high vaccination coverages there cannot possibly be polio, or that since polio is disappearing it cannot possibly be a cause for paralysis. To solve these problems and to assist all health workers in the surveillance and control of poliomyelitis, PAHO published and distributed a Polio Eradication Field Guide. This, together with improved laboratory support and program supervision, should permit all countries to detect and control all polio cases with maximum efficiency.

The rapidity with which countries have im-

Figure 3. Confirmed polio cases reported by country in the Region of the Americas, 1986 and 1987



Source: Weekly telexes to PAHO
* Vaccine related cases
** Vaccine related and imported cases

proved their surveillance systems attests to their commitment to eradicate polio. However, much still remains to be done if the goals of universal childhood immunization and polio eradication are to be achieved by 1990.

Acquired Immunodeficiency Syndrome (AIDS)

The PAHO/WHO Special Program on AIDS began at the end of January with the visit of the Regional Advisor for AIDS to Haiti in order to collaborate with the Ministry of Public Health and Population in preparing a national AIDS prevention and control program. Since then, AIDS staff worked to develop national prevention and control programs in Argentina, Bolivia, Brazil, Chile, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Mexico, Uruguay, and, jointly with CAREC, in the 19 English-speaking countries of the Caribbean. More than $US2 million of WHO extrabudgetary funds were mobilized for early implementation of national plans in the Americas.

To help provide health education and technical information, the AIDS program staff has gathered and disseminated many health information materials. The Organization also played a key role in the development of the first AIDS Information Education Exchange Center at CAREC, and is actively working on a second center to be established in Mexico.

To strengthen AIDS research, the program has successfully concluded a $US5 million, five-year AIDS research contract with the National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health (USA). Initial work with NIAID scientists has defined research areas, prepared working protocols, and resulted in initial visits to two countries—the Dominican Republic and Mexico—to establish direct collaboration in AIDS research.

In addition, the staff participated in multiple WHO consultancies and meetings, and, with the assistance of the Headquarters Office of Information and Public Affairs and other PAHO/WHO programs and units, successfully completed the first PAHO/WHO Pan American Teleconference on AIDS. The teleconference was broadcast to 650 sites in nearly all countries of the Americas, reaching an audience of some 45,000 health care workers. A final report on the teleconference is nearly completed and preparations have begun for the second teleconference in 1988.

In collaboration with the Organization's Headquarters Unit of Communicable Diseases, the program organized three international laboratory training workshops on AIDS laboratory technology in Brazil; Mexico, and Panama; the program also has served as WHO's representative before the United States Congress and has participated in numerous scientific meetings, congresses, symposia, and workshops on AIDS. The program continually responds to an extraordinary number of requests for information from the press, the general public, and the scientific community.

By June 1988, the program expects to have national AIDS prevention and control programs established in all countries of the Americas. Emphasis will be placed on initial funding as well as on follow-up visits to those countries which already have received WHO funding in order to establish needs for longer term financial support. The program will work closely with bilateral donors to coordinate financial efforts.

Emergency Preparedness and Disaster Relief Coordination

Emergency preparedness activities in Latin America, and to a lesser extent in the Caribbean, have changed considerably in the past few years. By 1987, the investment and contribution from the countries had dramatically increased, and the national health sectors were well on their way to establishing programs, offices, and procedures. Consequently, demand grew for more advanced, technically sophisticated support from PAHO/WHO in priority areas not fully covered by the 1987 operating budget.

Technical Cooperation and Support for National Programs. The Program pursues a two-pronged strategy at the country level—promotion and response. At the decision-making level it promotes a multisectoral/multidisciplinary approach and fosters an increasing commitment from the countries themselves. It also attempts to respond flexibly and adequately to growing requests from and initiatives in national health sector programs.

Many factors have affected Regional and national programs. Among positive ones are an increased international awareness, a heightened interest from bilateral and nongovernmental organizations, and a realization in the countries that disasters seriously affect long-term development objectives.

Some negative factors include the prevailing economic crisis that makes it difficult to commit additional resources to plan and prepare for the future, frequent turnover of key health officials, and the complex structure of the health sector.

In South America, most countries have relatively well-developed programs and activi-

ties. Institutionalized health programs with full-time personnel, budget, and an organizational structure exist in Colombia, Ecuador, Peru, and Venezuela. Larger countries such as Argentina and Brazil have stepped up activities at the municipal and provincial levels.

Joint efforts with the Convenio Hipólito Unanue have contributed to the Andean Ministers adopting emergency preparedness as a priority area during their 1987 meeting. Annual meetings of health disaster coordinators have provided essential links among national programs where cooperation priorities have been reviewed. The Program will continue to encourage direct negotiations among countries and among countries and bilateral donors.

In Mexico, Panama, and in all but one Central American country, a health disaster coordinator or a focal point has been established, and training activities conducted by nationals now reach the department level, requiring less technical support from PAHO/WHO. In addition, progress has been made in developing and testing a standardized survey methodology for temporary settlements. These techniques have been shared with interested countries and agencies.

In Costa Rica, several nontraditional health activities were supported on a trial basis, at the request of the Government: public awareness and support of long distance teaching and a program for children and teachers on school-safety during earthquakes. In El Salvador, one-day workshops for nongovernmental organizations and the Ministry of Health were held, and similar efforts are planned for 1988 in other countries. Mexico's health sector made dramatic progress in the aftermath of serious disasters in 1984 and 1985. Guidelines were formulated and training has been conducted at the State level, making Mexico an important reservoir of experts for activities in other countries.

The Caribbean subregion presents a particularly complex situation—it has the highest PAHO/WHO program expenditure per inhabitant and the lowest per country. Despite its potential vulnerability to natural disasters such as hurricanes and earthquakes, it has very limited response capabilities.

While Jamaica and Barbados have fairly well-established programs, the level of national activities and initiatives varies among the smaller islands, depending mostly on the interest and enthusiasm of a part-time coordinator. The Pan Caribbean Disaster Preparedness and Prevention Project, a multisectoral, multiagency approach to disaster preparedness, provides a way for the Office of the United Nations Disaster Relief Coordinator (UNDRO), the Red Cross, Caribbean regional institutions, and PAHO/WHO to consult with one another. The Organization's cooperation with the Caribbean Community Secretariat (CARICOM) is excellent, and both entities complement each other.

Development of Training and Educational Materials. This component supports the needs of PAHO/WHO Regional and national programs, helps transmit standardized messages, and provides an accepted technical level of skills.

The economic crisis has made access to scientific and technical publications difficult for many health officials. The newsletter *Disaster Preparedness in the Americas*, published in both English and Spanish and with a circulation of 8000, continues to be a valuable and relatively inexpensive means to disseminate information. To increase access to publications and support to national programs, reference centers containing selected bibliographies and abstracts have been decentralized.

In 1987 a video program on the earthquake in El Salvador was produced, and work began on a program for a general audience, entitled "Myths and Realities of Natural Disasters." This program will be promoted for use by public broadcasting services and official national television networks in the Americas.

Thirteen slide series have been completed in both English and Spanish: emergency management of environmental health and water supply, prehospital and hospital medical care in disaster situations, the earthquake in Mexico, and hospital safety. To date, the material has been produced at Headquarters, but at-

tempts to decentralize this effort by providing subregional offices or national programs with basic desk-top publishing equipment has begun. If it succeeds in meeting Regional needs at a lower cost, this trend will be pursued.

Hospital Disaster Preparedness (Mass Casualty Management). PAHO/WHO's objective is to enable hospitals to manage mass casualties adequately and ensure the survival of as many disaster victims as possible, using existing resources, services, and personnel. Although planning at the metropolitan level remains a priority, establishing direct working contacts between institutions such as the Social Security, Armed Forces, Ministry of Health, and the private sector has proven difficult. The Government of Italy is considering providing bilateral support for this component, an intercountry project based in El Salvador is tentatively planned, and the Government of France is considering a joint project with PAHO/WHO for selected Caribbean countries.

Field Assessment of Health Needs. Significant progress has been made in preparing PAHO/WHO field staff to play an active role in assessing post-disaster health needs. A manual on assessing health sector needs after floods and hurricanes has been published as planned.

Portable satellite communication equipment (computer, facsimile, telex, and telecommunication) has been purchased for use at disaster sites. The main challenge is to maintain equipment and staff readiness during the often long periods between disasters. Promoting the joint assessment of health needs with UNDRO will remain a target for the future, and health experts from well-established agencies and donor countries will be encouraged to coordinate their assessment activities with national officials and PAHO/WHO experts stationed in the affected country. Post-disaster meetings to discuss misunderstandings that may arise between donors and affected countries and to draw lessons for the future will be pursued whenever appropriate.

Technological Disasters. The Program also aims to facilitate information on the health risks and actions needed to mitigate health problems related to technological disasters; to increase awareness of public health implications of technological disasters; and to stimulate health sectors to formulate plans and measures to control such occurrences. Several workshops have been held, and the subject of chemical accidents was routinely included in general workshops.

This component deserves further development, as the problem in Latin America continues to worsen. The prime operational responsibility remains with the PAHO/WHO Chemical Safety Program; the Emergency Preparedness Program's responsibility covers intersectoral coordination of contingency plans and response.

Special Initiatives

Subregional initiatives constitute a model for technical cooperation among countries. From their inception, they have been structured according to joint decisions taken by a group of countries with health problems and priorities in common. At a second stage, possible scientific and technical solutions take into consideration the resources, experiences, and potentials in the countries for developing national programs and for cooperating with other participating countries. To develop specific activities at the operating level, professionals and technical staff exchange information and discuss the work's implementation. Developed countries assist in the process by providing financial aid and scientific and technical cooperation. Through this process, different international agencies for cooperation can coordinate their activities and augment their beneficial effects.

This strategy for subregional initiatives has been proven an effective and innovative way to organize PAHO/WHO's technical cooperation, to encourage cooperation among countries, to stimulate determination of priority areas, and to mobilize resources within the

countries themselves, as well as complementary technical and financial ones.

The Plan for Priority Health Needs in Central America and Panama was the first and is currently the most advanced PAHO/WHO subregional initiative. It was the model on which similar initiatives such as the Caribbean Cooperation in Health, the Joint Plan of Action for the Andean Subregion, and the Plan for Health Infrastructure Development of the Southern Cone countries were forged.

Plan for Priority Health Needs in Central America and Panama

The Regional health initiative in the Central American subregion was described in detail in earlier *Annual Reports*, where its origins, organization, structure, and initial development were described. As part of the same subregional approach, the Organization also has supported the Central American Isthmus Social Investments Program (PISDIC), jointly launched by the Organization of American States (OAS), the Inter-American Development Bank (IDB), and PAHO/WHO.

In 1987 the countries of the Isthmus maintained, through their Ministries of Health, their firm commitment to cooperation among countries and to jointly plan action for priority projects. The signing of the Esquipulas Agreements, and particularly the decision taken in August by the Central American Heads of State, marked a historic milestone in the area's peace process. Jointly conducted activities in the health sector not only represent an important example of the countries' potentials and capabilities for working together in building the future of the Central American Isthmus, they also contribute to the peace process itself.

During the III Special Meeting of the Health Sector of Central America and Panama (RESSCAP), held in Managua, Nicaragua, in August, the Ministers of Health signed the Declaration of Health of Central America and Panama, which expresses unqualified support for the decision of the Central American Presidents. The results of an evaluation of the Plan's priority areas were reviewed during a preparatory meeting for RESSCAP; this evaluation was conducted by the Ministries of Health with the support of PAHO/WHO and, in the case of infant survival, with UNICEF.

A meeting of Directors General of Health was held in November to establish criteria for identifying priority projects under the Plan. These projects will be submitted at a conference for cooperation institutions and agencies to be held in Madrid at the end of April 1988.

Several countries, agencies, and international organizations continued to offer substantial technical and financial support.

In November 1985 the government of France signed an agreement with the Organization whereby it committed support for subregional activities in essential drugs, equipment maintenance, and nutrition. The initial allocations of funds totalled four million French francs (approximately $US660,000), and were made available in August and December 1986 for use in developing activities according to the annual work plans drawn up with the beneficiary countries. In addition to providing resources (approved for the second year), in 1987 the Government of France provided the services of a French specialist, stationed at INCAP, for the nutrition project.

In December 1985, the Government of the Netherlands signed an agreement with the Organization pledging 50 million Dutch guilders (approximately $US26 million) to be allocated in the course of five years and to be distributed roughly equally between two projects—the essential drugs project and the health service project (strengthening the physical infrastructure and equipment maintenance).

The Essential Drug Revolving Fund for Central America and Panama (FORMED), begun with assets equivalent to $US4 million, has proven beneficial: prices have been lower than the average prices previously paid by the countries for the same drugs. However, the Fund's full utilization has not been realized due to failure to reimburse the funds promptly.

In addition to offering additional funds for FORMED activities, the Government of the Netherlands approved, toward the end of the year, a project to strengthen and develop engineering services and to maintain health facilities. The project's first stage will run for 18 months at a cost of $US3.6 million, and is scheduled to begin in 1988. The design of two national projects in this field for Belize and Guatemala was begun in 1987.

In January 1987 Norway and the Organization signed an agreement to conduct a three-year regional project to produce essential drugs and other critical inputs in the countries. The project, based in Guatemala, began in the year's last quarter and received a first allocation of $US663,000 from the Government of Norway.

After the Madrid Conference in November 1985, the Government of Sweden agreed to support the Plan and approved the allocation of 2 million Swedish kroner ($US277,000) to specifically support the FORMED distribution system, including remodeling of hospital pharmacies, provincial dispensaries, and warehouses. Within the Plan the Swedish Government also allotted 3 million kroner ($US400,000) to UNICEF for subregional child-survival activities, and by means of an agreement, signed in November 1987, provided 4 million kroner ($US550,000) for diarrheal disease control, monitoring of physical growth, and the food supplement program in Nicaragua, as well as to support the subregional project for child survival and FORMED.

The Government of Finland officially pledged to provide two-year financial support for subregional projects in essential drugs and malaria control in Nicaragua; the first project will receive $US202,400 and the second $US281,250.

The United States government, through an agreement between USAID and PAHO/WHO, earmarked $US7.8 million for subregional projects on essential drugs and malaria control, both of which completed their third year of the four years of implementation agreed upon. The projects providing technical support for the programs of nutrition for priority groups and of food and nutrition for infant survival also completed their third year of operations. USAID has made available about $US20 million for these projects; INCAP administers both. Along with other donors, the United States Government also supports the subregional campaign to eradicate poliomyelitis in the Americas, and has assigned $US5 million for Central America.

Through INCAP, the government of Switzerland has financed the first stage of a project to develop and train human resources in food and nutrition.

Through UNICEF, the European Economic Community (EEC) and the government of Italy contributed $US30.5 million for the subregional project on infant survival, which completed its second year of operations. In addition, in 1987 the EEC, through an agreement with the Mèrieux Foundation and the Order of Malta, will provide $US3.5 million to support a subregional project to eradicate rabies in Central America.

The Government of Spain has played a key role in promoting the Plan since its inception. This became clear after Spain sponsored the first conference, held in Madrid in November 1985, where the Plan was officially presented to the international community and by its offer in August 1987 to host the second conference (to be held in Madrid in April 1988). Spain has allocated a total of $US10 million for the Plan's implementation, primarily in human resource development and training.

In 1987 UNDP approved $US1.5 million for a four-year subregional project, now in operation, to develop managerial capabilities; the project's first evaluation was conducted in the latter part of the year.

The Inter-American Development Bank funds several national projects, mostly in water supply and sanitation. Toward the end of the year, IDB approved approximately $US120,000 for technical advisory assistance for preparing investment projects for malaria control in El Salvador, Guatemala, Honduras, and Nicaragua.

In addition to the specific projects and activities described above, the Ministry of Public

Health and Social Welfare of Guatemala coordinated a special study to encourage further technical cooperation among the countries of the Isthmus by identifying needs and potential resources in each country. The study's findings have been presented in "Guía Preliminar de Instituciones y Profesionales" (Preliminary Directory of Institutions and Professionals) that details each country's capabilities in specialized areas of cooperation.

Special agreements have been prepared among Central American countries to address health problems in border areas by considering these areas' special features. For example, the Governments of Belize, Guatemala, and Mexico have signed an agreement to study health conditions in border communities, to more accurately identify health problems, and to determine priorities for specific programs. Another example is an agreement signed by the Governments of Honduras and Nicaragua in April 1987 to prepare epidemiological reports on the status of malaria, dengue, Chagas' disease, and leishmaniasis. These reports will be used to set up a border-area joint plan of action for the control of those diseases. Similar agreements have been established between Costa Rica and Nicaragua and between Costa Rica and Panama.

From PAHO/WHO's perspective, the Plan, as a result and as a requirement of each one of its components' activities, also has led to closer coordination between Regional programs and PAHO/WHO Representations in the countries in the daily conduct of cooperation activities. Moreover, projects developed within the Plan and the external financial resources needed to implement them have streamlined the manner in which the international community provides external cooperation. Clearly, coordination among various agencies, regardless of differences in their approaches, has become increasingly necessary to ensure that resources are used efficiently and without duplicating efforts. At the country level, coordination of activities of public health and social security institutions also was improved.

Caribbean Cooperation in Health

The Caribbean Cooperation in Health initiative represents the commitment of the Ministers of Health of the English-speaking Caribbean countries and other political units to work together to improve the health of the people of the subregion; the Ministers have charged PAHO/WHO and the Caribbean Community (CARICOM) Secretariat with promoting the initiative. It was launched formally at the Tenth Conference of Ministers Responsible for Health in the Caribbean in June 1986; during 1987, its first full year of operation, priority attention was given to promoting the initiative, preparing projects in priority areas, and seeking external funds.

This year, the initiative was presented at the 40th meeting of the World Health Assembly by one of the Caribbean Ministers of Health, and resolution WHA40.16 was passed congratulating the Caribbean countries on the initiative, urging Member States, WHO, and other international organizations to support it, and requesting the Director-General to assist PAHO and CARICOM in mobilizing financial and technical resources to facilitate its optimum development. It was also presented to and approved by the meeting of the Caribbean Heads of Government in July 1987.

In May, a mission of Caribbean Ministers, the Director and senior staff of PAHO, and the Director of Functional Cooperation of CARICOM visited Rome, Paris, London, Bonn, and Brussels to promote the initiative's objectives and seek support for projects in the initiative's six priority areas. This visit resulted in considerable support for the initiative: technical missions from several countries already have visited the Caribbean to develop project areas they will support.

The Government of Italy, for example, is interested in supporting projects in care of the handicapped, maternal and child health, and vector control. This technical cooperation includes assistance from Italian consultants working in the Caribbean to help execute the projects. The Federal Republic of Germany

will support a subregional project in environmental health, with emphasis on strengthening the Caribbean Environmental Health Institute in Saint Lucia. The Government of France has agreed to support projects in food and nutrition as well as to work to foster closer cooperation between the English-speaking Caribbean countries and the French Departments of Martinique, Guadeloupe, and French Guiana through the initiative.

The Carnegie Corporation hosted a meeting in New York for the Pew Memorial Trust and the Rockefeller, Ford, Macy, MacArthur, and Clark Hewlett Foundations. As a result of that meeting, the Pew Memorial Trust has funded a project on education and training in health management and the Carnegie Corporation has provided a planning grant for developing a project on "Intra-Caribbean Technical Cooperation in Maternal and Child Health."

United Nations agencies also have lent their support: UNICEF has further developed two projects in maternal and child health; UNESCO has partially funded activities involving the media and their role in health promotion; UNDP has funded a regional project in environmental health; and UNFPA has expressed an interest in providing support in its field. Discussions have been held with the World Bank and the Inter-American Development Bank (IDB) on possible support. The initiative was presented at two meetings of the Caribbean Group for Cooperation in Economic Development (CGCED) where it was welcomed as a program which addressed the needs of the social sector affected by various structural adjustment programs resulting from the economic crisis in the subregion.

Most of the funding has been channeled to subregional projects. PAHO/WHO has provided funding to catalyze national projects in strengthening health systems in Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Vincent and the Grenadines, Saint Kitts and Nevis, and Trinidad and Tobago. Support was also given to a similar project for the Eastern Caribbean States.

The CARICOM Ministers of Health have reviewed the initiative's progress and have expressed satisfaction with results, noting that it had demonstrated its potential to contribute to Caribbean development. Approximately 25% of the $US90 million of the originally proposed external funds are under active negotiation and it is expected that these funds will be granted. Most potential donors have focused on environmental protection including vector control and on maternal and child health.

During the year, it became evident that the initiative was being accepted as a framework of technical cooperation with CARICOM countries, not only by PAHO/WHO but by other agencies as well. Activities carried out through it also have served to strengthen the cooperation between PAHO/WHO and CARICOM and between PAHO/WHO and other Caribbean institutions including the Caribbean Development Bank (CDB).

In response to the need to improve skills in project development and management, PAHO/WHO has worked with CARICOM and the CDB to carry out project development training at the subregional and national levels.

Future needs of the initiative will require negotiating subregional project funding and assisting governments to prepare and refine national projects to attract support from bilateral sources. As more of the projects become operational, it will also become necessary to strengthen national capabilities and PAHO/WHO's local capacity to execute programmed activities in a timely and efficient manner.

Andean Cooperation in Health

Implementation of the Andean Cooperation in Health progressed this year, although the effort had a slow start. Postponed until November, the XII Meeting of Ministers of Health of the Andean Area, where the efforts' priorities, strategies, and plan of work were to be set, came too late in the year to begin active implementation. Moreover, four of the five Andean governments changed their Ministers

of Health during the year, further delaying action on the tentative work plan elaborated by the Directors General of Health of the Andean countries in Quito, Ecuador, in 1986. Despite these setbacks, both the Secretariat of the Hipólito Unanue Agreement and the Organization continued to promote and carry out several subregional activities within the proposed plan of work, and the Organization continued to work on those subregional activities approved by the governments in work programs for 1987. Several activities were undertaken in the five priority areas of strengthening the health services infrastructure, maternal and child health, malaria, essential drugs and biologicals, and substance abuse.

PAHO's 99th Executive Committee Meeting took note and at the XXII Pan American Sanitary Conference the Member Governments endorsed the Andean Cooperation in Health effort and encouraged the Andean countries, the Hipólito Unanue Agreement, and the Organization to proceed as rapidly as possible in this endeavor; in turn, each of the Andean Ministers of Health reaffirmed his commitment to carry on with the effort.

At a meeting of the Directors General of Health of the Andean countries held in Caracas, Venezuela, in September 1987, the effort's overall direction was set and a tentative plan of work, to be submitted for consideration and approval by the Ministers of Health, was elaborated. The Directors General also suggested that the Organization prepare a Basic Document outlining objectives, strategies, and priority areas for the Andean Cooperation in Health.

During the XII Meeting of Ministers of Health of the Andean Area (REMSAA) held in Quito in October, the Ministers reviewed and approved the Basic Document and added disaster preparedness to the five established priority areas. They also approved a program and budget for the Secretariat of the Hipólito Unanue Agreement which includes joint activities with the Organization, and elected its new Secretary General, charging him to work closely with the Organization to strengthen the established priority areas.

With the formal endorsement of the Andean Cooperation in Health effort by the Ministers of Health at the end of the year, progress in activities is expected to increase. Several agencies and governments have already expressed a desire to collaborate: UNICEF has shown an interest in this effort since its inception, and the Governments of Spain, the Netherlands, and Sweden have pledged their potential support to various priority areas.

Joint Plan of Action in Health of the Southern Cone Countries

The *Annual Report* for 1986 included a summary of this initiative's beginnings. Despite a slow year in 1987, the initiative, owing to the opportunity it offers for developing innovative approaches for addressing problems in common, progressed in eliciting interest in technical cooperation among Southern Cone countries. Although special, subregional-level funds are not available to carry this out, the Organization will promote and support collaboration in health activities among Argentina, Brazil, Chile, Paraguay, and Uruguay to increase each country's contribution and to augment the benefits from their collective efforts. Moreover, the inclusion of some activities within the Organization's annual operating program is already being considered.

In 1986, during their first meeting, the Ministers agreed to promote and implement activities to systematically exchange information, experiences, and technology, thus encouraging the development of joint programs that address shared health problems; the updating of agreements regarding border-area health problems; the establishment of standards to facilitate the development of health programs in the Southern Cone; and the setting of policies, directives, and other administrative tools to enable each country to effectively contribute toward solving the subregion's problems. The Ministers also agreed to establish technical groups in each country for promoting an exchange of experiences and information on shared priority health problems; for undertak-

ing subregional or bilateral efforts to best use each country's resources and those of the Southern Cone as a whole; and for evaluating how the countries comply with their commitment to improve the health of their populations.

This cooperation will be provided within the general framework of regional and global agreements and policies adopted by PAHO and WHO as well as cooperation agreements among countries.

The initiative's priority technical areas are: technology, including equipment, drugs, and biological products; human resources (continuing and graduate education in public health); scientific and technical health information; chronic diseases and lifestyles; environmental sanitation including food protection; health problems in border areas; and development of the health service system.

During the XXXII Meeting of PAHO's Directing Council (September 1987), the Ministers of Health from the five countries met with PAHO's Director and agreed to invite an observer from Bolivia to the next meetings. A technical meeting scheduled for November in Brasilia was postponed until 1988. Two subregional meetings have been planned for 1988: one, to be held in Uruguay, will address local health systems, a priority subject in most countries; the other, to be held in Argentina, will focus on AIDS. It is hoped that an agreement to be signed by all Southern Cone Ministers of Health will result from this meeting.

V. National Priorities and PAHO/WHO Cooperation

PAHO/WHO Representations in Member Countries have stepped up activities to analyze the overall national health conditions and the economic, political, and social aspects affecting the health sector. These analyses, carried out in conjunction with national authorities and specialists, result in a better identification of priorities for the Organization's technical cooperation efforts.

This portion of the *Report* summarizes the year's activities, which were carried out according to PAHO/WHO's managerial strategy and were organized in accordance with the American Region Planning, Programming, and Evaluation System (AMPES).

Information is also provided on mobilization of national resources and on the Organization's efforts to mobilize external resources, coordinate its cooperation with other agencies, and foster technical cooperation among countries.

The country reports are grouped by geographic areas to allow comparisons among similar conditions of cooperation and, above all, to assess the gradual development of common efforts and cooperation mechanisms among the countries themselves.

CARIBBEAN AREA

Antigua and Barbuda

The Government has continued to strengthen the operational capacity of the Ministry of Health. National health priorities were oriented toward developing the health services infrastructure, especially in terms of organizational development and intersectoral coordination; matters of health legislation and information; and programs of maternal and child health, environmental protection, and nutrition.

PAHO/WHO collaborated in preparing a project proposal to improve the country's drug supply system; the project received a $US60,000 grant from WHO. The Organization also cooperated with the Government in strengthening health information, particularly in information systems and vital statistics for community health services. The Organization conducted a rural water supply and sanitation survey in Barbuda, drafted sanitation by-laws,

and prepared a rural water supply and sanitation project to improve the health and environmental conditions of the island. Eight nationals received PAHO fellowships during 1987. The Organization promoted mobilization of national resources by using national consultants, and intersectoral coordination by administering the family life education and family planning project funded by UNFPA and the health education project funded by the Carnegie Corporation of New York.

Antigua and Barbuda participated in all the subregional health development activities organized and/or supported by PAHO/WHO. With the Organization's support, the Ministry of Health conducted a subregional seminar-workshop on health manpower development, where training institutions from other countries participated; the Regional Nursing Body held its annual meeting in St. John. Under the Caribbean Cooperation in Health (CCH) initiative, Antiguan representatives helped design subregional and Eastern Caribbean projects. The Organization continued to promote technical cooperation among countries: Antigua worked with the French Departments of Martinique and Guadeloupe to formalize cooperation between the Eastern Caribbean and France.

In the future the Organization's cooperation will aim at improving the health services capacity by supporting management processes and information systems. In addition, PAHO/WHO will continue to support the implementation of projects under the CCH initiative such as the reorganization of the Ministry of Health and the improvement of the essential drugs supply system.

Bahamas

After the general election in June, there were no major changes in overall health delivery services in the Bahamas; however, program modifications reflected some changes in priorities. For example, initiating and completing primary care facilities and finishing the new Bahamas School of Nursing during the first half of the year were emphasized. A policy document, formulated with PAHO/WHO assistance, sets out 16 priority areas, including areas identified in the "Orientation and Program Priorities for PAHO During the Quadrennium 1987-1990." This document has been approved by the Cabinet.

PAHO/WHO's technical cooperation centered around three national imperatives: providing an infrastructural base for the Ministry of Health's decentralization thrust; planning for and providing qualified and sufficient personnel to meet decentralization needs; and responding effectively and efficiently to health problems requiring prompt action for the safety of the Bahamian people. The Health Information Unit, renamed the Health Information Coordinating Services Unit, was expanded to include trend assessment. Under the Caribbean Cooperation in Health (CCH) initiative, PAHO/WHO provided funds to facilitate the development of this unit. The Organization and the Ministry of Health jointly developed a publication that reports on existing and projected developments. This publication has become an important element for strengthening health information in the Ministry. Technical assistance is also being given to computerize the hospital information systems.

Management of funds remains a crucial infrastructural aspect of the proposed decentralization of health services; preliminary proposals already have been introduced for performance budgeting within the Ministry. PAHO/WHO has provided short-term consultancy services as well as staff time to work closely with the Ministry in this area.

In health systems development, significant gains in the reorganization of the Ministry of

Health's headquarters have paved the way for further decentralization. Two acute care hospitals, Princess Margaret and Rand Memorial, and the Solid Waste Management Unit of the Department of Environmental Health Services will be decentralized first. PAHO/WHO provided significant technical input to restructure these services as public corporations, leading to greater autonomy in their administration.

PAHO/WHO formed part of an intersectoral, multidisciplinary working group on alternative methods of health financing which has completed the first major phase of its work and has submitted its report to the Cabinet. In November, the Prime Minister announced the decision, in principle, to develop a national health insurance scheme within existing national insurance arrangements.

PAHO/WHO's technical cooperation in health manpower development included a grant under the CCH initiative. Through funding seminars and workshops, through its fellowship program, and through in-country training by its resident and subregional personnel, the Organization continued to help prepare qualified Bahamians as health service providers.

Despite complex problems in the Department of Environmental Health Services, gains were made in environmental monitoring and risk assessment, as well as in solid waste management. The Organization provided support through a short-term consultancy and through funds to enable the Government to hire a solid waste manager.

In communicable disease control, AIDS has assumed top priority. The Bahamas participated in the First Pan American Teleconference on AIDS and has formed a national AIDS committee which will develop education programs with CAREC support and funds.

The national program for drug abuse prevention and control has undertaken many activities addressing drug abuse in general and cocaine abuse in particular. Most of these activities have been funded by an UNFDAC grant administered by PAHO/WHO.

To mobilize external resources, PAHO/WHO staff, within the framework of the CCH initiative, actively collaborated with the local office of the IDB toward a technical cooperation project between the Bank and the Ministry of Health for further health infrastructure improvement. Some promotional activities also have been initiated with the local office of the Organization of American States.

Barbados

Health policies of Barbados remained largely unchanged, even though a new government took office after the death of the Prime Minister. A joint country review thoroughly examined government policies and programs and the relevance, efficiency, and impact of PAHO/WHO technical cooperation in the priority health needs of Barbados. The review also highlighted the need to closely evaluate more traditional programs to ensure that the most cost-effective methods are being utilized, to strengthen the management system and planning process, and to award fellowships according to the country's health program needs.

Barbados, the site of the Office of the Caribbean Program Coordination, fully participated in the planning and development of the Caribbean Cooperation in Health initiative, hosted various subregional meetings to further develop project proposals in health services development and environmental protection,

and developed several country-specific projects, one of which—the improvement of management information systems—received funding through PAHO/WHO.

Health manpower development continued to be a major focus of PAHO/WHO technical cooperation. The Barbados Community College conducted a training program for nutrition officers with support from the Caribbean Food and Nutrition Institute (CFNI), and promoted continuing medical education courses.

PAHO/WHO, through the Caribbean Epidemiology Center, provided laboratory support for AIDS control programs, and through CFNI appointed a national professional to collaborate with the Ministry of Health in following up recommendations made in a nutrition program review completed during the year. In noncommunicable diseases, CFNI collaborated with the Government in programs for the control of diabetes mellitus, hypertension, and obesity, and the Organization participated in the Chronic Diseases Committee of the Government, worked with polyclinic staff in developing community-based programs, and completed a feasibility study on psychiatric and geriatric care.

The Organization funded a national advisory committee on the environment, which prepared policy guidelines for consideration by the Government, closely collaborated with food protection programs, assisted in a training program for poultry inspectors, and maintained links with the Ministry of Health's Environmental Engineering Division.

With PAHO/WHO assistance, the IDB-funded project to extend the operating capacity of the Queen Elizabeth Hospital began to be implemented.

Barbados continued to be a full partner in the program of technical cooperation among countries, and, with PAHO/WHO acting as a catalyst, Barbadian expertise was made available to several Caribbean countries.

Bermuda

Bermuda continues to have a well-organized, Government administered network of health services which provides a high standard of primary and secondary level care, with easy access to higher levels of care in neighboring countries. National health priorities continued to focus on primary health care, health surveillance and evaluation including measures for disease and environmental control, and manpower development.

PAHO/WHO's technical cooperation to strengthen the island's health system infrastructure concentrated on human resources development. The Organization provided training, consultancy services, supplies and equipment, and support so that a dental health officer could complete a maternal and child health fellowship. Through the Caribbean Epidemiology Center (CAREC), the Organization continued to provide advisory services in both disease surveillance and hospital management.

The Organization continued to act as the executing agency for international projects implemented in the island. It assisted, within the framework of technical cooperation among countries, in developing specific projects under the Caribbean Cooperation in Health initiative which will benefit Bermuda, and, wherever possible, promoted intersectoral action in the course of carrying out its technical cooperation activities.

British West Indies

In Anguilla, PAHO/WHO supported the development of health services infrastructure with emphasis on health education, health information systems, and laboratory services. The Organization also granted a fellowship to train the country's health educator, helped purchase basic equipment to support current health information mechanisms, and provided a consultant to assess the laboratory situation at the hospital and made recommendations for its improvement. Regarding program areas, Anguilla participated in the subregional workshop on *Aedes*-borne diseases held in Barbados in May 1987; the country's vector control program was reviewed and recommendations were made for its improvement. PAHO/WHO planned and conducted a national solid waste management workshop for the public and private sectors and administered the UNFPA-funded national family life education and family planning project.

In the British Virgin Islands PAHO/WHO supported health services infrastructure, health legislation, nursing, and disaster preparedness. A consultant was made available to review the Environmental Health Law and the Medical Act and to draft new bills. The island received three PAHO fellowships to support health manpower development. Regarding program areas, the Organization supported a national solid waste management workshop for the public and private sectors and an assessment of the solid waste situation in Virgin Gorda. In addition, PAHO/WHO administered the UNFPA-funded family life education and family planning project and contributed to the vector control program review, which resulted in recommendations for the program's improvement.

Montserrat received PAHO/WHO support in health services infrastructure, particularly in nursing services and health manpower development. The island received seven PAHO fellowships. In program areas, technical cooperation was provided in strengthening the National Solid Waste Management Program. The Organization helped to prepare and to search for funds for the family life education and family planning project. Family nurse practitioners received training.

In the context of technical cooperation among countries, Anguilla, Montserrat, and the British Virgin Islands worked with Guadeloupe, Martinique, and French Guiana toward future cooperation in health between the Eastern Caribbean countries and France. They also participated in the Caribbean Cooperation in Health initiative and in the subregional and Eastern Caribbean health development activities supported by PAHO/WHO.

In the future the Organization will continue to support health system development in Anguilla, concentrating on planning in order to prepare its general health infrastructure for the new hospital under construction. In the British Virgin Islands, the Organization will support the health services network, particularly regarding its operation, and in Montserrat, PAHO/WHO will orient its activities toward the rationalization of health resources, emphasizing the better use of health facilities and quality of care.

Cayman Islands

To meet the needs of the health sector, the Government continued to focus on manpower development, and the Organization assisted by providing training, supplies

and equipment, consultancy services to strengthen the island's health system infrastructure, and fellowships in blood bank management, genetic disease control, and dental auxiliary training. A family life education workshop was conducted, and training was provided to improve dental services through temporary advisers. Local personnel collaborated closely in the family life education workshop. Cooperation also targeted priorities such as developing the planning process and improving solid waste disposal.

PAHO/WHO continued to act as the executing agency for international projects. Within the framework of technical cooperation among countries, the Organization assisted in developing specific projects under the Caribbean Cooperation in Health initiative and, wherever possible, promoted intersectoral action while carrying out its technical cooperation activities.

The Cayman Islands expect to enter into a new five-year agreement with UNDP for a project on medical services with emphasis on manpower development; the project should begin in 1988.

Cuba

The Ministry of Health established the following programs as priorities for PAHO/WHO's technical cooperation during 1987: development and evaluation of new technology in health, development of a scientific and technical information system, promotion of hygiene and epidemiological activities, medical care, human resource training, and production and distribution of drugs. Highlights of the year's activities within these priorities are summarized below:

In development and evaluation of new technology in health, which includes the selection, introduction, and evaluation of new technology according to the country's priorities and health development needs, the Organization, based on the Cuba-Mexico-PAHO/WHO agreement, collaborated with Mexican specialists to bring in an experimental neurosurgical treatment for parkinsonism. PAHO/WHO also cooperated in training national personnel in genetic techniques for hemoglobinopathies.

Within the program to develop a scientific and technical information system, the Government seeks to strengthen and expand the network of health science libraries nationwide through information automation, more access to outside sources, information reproduction and bibliographic services, and the development of a medical publication system. To this end, PAHO/WHO supported the network's expansion, facilitated access to Latin American data banks through BIREME, and trained national staff on how to use the REPIDISCA system.

The programs for the promotion of hygiene and epidemiological activities comprise the development of epidemiological surveillance, prevention and control of zoonoses, environmental health, worker's health, health of schoolchildren, food hygiene, nutrition, and health education. The Organization offered technical cooperation in occupational health, in preventing contamination and quality control of drinking water sources, and in food microbiology, as well as in establishing a cooperation program between the National Nutrition Institute and INCAP. Cooperation also was given to the vaccination, sanitary control of food, leprosy, and vector control programs.

The medical care program includes outpatient, hospital, and social medical care, and aims at strengthening the health services using the strategy of primary care, whose main element is the development of family physicians

as the core of a new health care model. This program also encompasses chronic disease control, mental health, maternal and child health, health of the elderly, rehabilitation, and oral health. In 1987, 1,500 family physicians and 1,500 nurses joined the national plan, bringing the total number of physicians participating in the national model to 4,015. To structure the health services based on care by family physicians, PAHO/WHO began a program that encompasses assistance in medical audits and health service evaluation and research. The Organization also helped to finalize the first stage of the "chronic diseases risk factors" research; to develop family psychotherapy and control of alcoholism and drug abuse in the national mental health program; to develop the national program for pediatric cardiology and neurosurgery; to conduct training in genetics and geriatrics; and to carry out research in oncological therapy.

The program for training human resources addresses the need to extend medical teaching to all the provinces and most of the health units, to develop and maintain continuing education activities, and to train cadres of specialists in priority fields so they can assume positions of leadership in health. In 1987, a new study plan for medical schools began to be put into practice and a new study plan for training stomatologists was designed. The Organization supported an exchange of human resource training in administration, epidemiology, and health statistics with professionals from Argentina, Brazil, Colombia, Mexico, Panama, and Peru.

The program for the production and distribution of drugs continued to aim at an integrated, quantitative, and qualitative development of the national medical pharmaceutical industry, which is responsible for producing, distributing, marketing, importing, and exporting drugs and other medical inputs. Through PAHO/WHO's support, the metrology system, standardization, quality control, and regulation of manufacturing practices were strengthened. The national pharmaceutical industry was encouraged to participate in the Latin American Network of Drug Producing Laboratories and in the Ibero American Meeting of the Pharmaceutical Industry. As part of the technical cooperation among countries, potential areas of cooperation began to be identified with Argentina and Brazil.

During 1987, PAHO/WHO also actively participated in programming and executing the agreement between Cuba and Mexico, and cooperated in reformulating and expanding the Cuba-Nicaragua-PAHO/WHO agreement to include human resource training and the strengthening of the National Center for Hygiene, Science, and Technology and management techniques.

Dominica

Dominica and PAHO/WHO jointly carried out a major evaluation of the country's 1982-1987 Health Plan aimed at updating the plan for the next five years. With the help of a national consultant, an epidemiological assessment of health status indicators for the next planning cycle was implemented. The Government worked toward strengthening the equity, efficiency, and effectiveness of health services, and identified as priorities aspects of health legislation, health manpower development, environmental protection, maternal and child health, and nutrition. Draft mental health regulations were prepared as a follow-up to the Mental Act Review.

PAHO/WHO supported nursing education as part of Dominica's efforts to improve the manpower situation. The Organization also provided technical cooperation in sewage disposal in the Roseau Area, including the devel-

opment of the Roseau Sewerage System Project and projects concerned with marine outfall and sewage disposal for suburban, low-income housing. Ten nationals received PAHO fellowships this year.

Dominica has several well trained and experienced health officials, who not only expedite the mobilization of internal resources but, with PAHO/WHO support, share their expertise with other countries of the subregion.

Within the framework of technical cooperation among countries, Dominica joined the French Departments of Martinique and Guadeloupe to formalize technical cooperation among the Eastern Caribbean countries and France; Barbadian expertise was made available to Dominica for an X-ray equipment consultancy; the country fully participates in the Caribbean Cooperation in Health initiative and plays a key role in designing subregional and Eastern Caribbean level projects.

Dominica participated in all the subregional health development activities organized or supported by PAHO/WHO, including the *Aedes*-borne disease workshop held in Barbados in May, and the Registrars General meeting on births and deaths registration held in Grenada in October.

Dominican Republic

In 1987, the Secretariat of State for Public Health and Social Welfare set the following priority areas: improving the health service infrastructure by recovering installed physical capacity and expanding coverage through construction of rural clinics in remote areas; reorganizing the Secretariat and its units to improve efficiency; and strengthening programs for control and prevention of diseases preventable through immunization and important communicable diseases in the country.

To address these priority areas, the following strategies were applied: deconcentration and decentralization of activities to strengthen local health systems; mobilization of national resources to provide technical support to various programs; selective concentration of resources to increase their effectiveness; and intersectoral linkage combined with community participation.

To improve the health service infrastructure, a reorganization of the Secretariat of Health began by defining the functions of its political and senior technical levels, and a project was developed to strengthen local health services in three of the country's health regions. Technical advisory services in hospital administration were provided to five hospitals in the capital; an information system for hospital statistics and medical records was developed in three health regions; equipment was provided to some medical archives; and cooperation was provided to conduct the first course on programming physical resources for physicians, engineers, and architects. Nursing standards in administration, outpatient consultation, and surgical and psychiatric nursing were developed.

The Organization supported the program for clinical laboratories and blood banks by helping to develop standards and regulations, by cooperating in training staff from hospitals and the Ministry in quality-control procedures, and by donating equipment.

In maternal and child health, assistance was provided to train 500 physicians and 400 nurses in oral rehydration therapy, to complete a survey of morbidity and mortality from diarrheal diseases and enteritis, to conduct a course for managers of oral rehydration therapy programs, to establish a program for the control of acute respiratory infections, to insti-

tute a standard perinatal clinical history form in five hospitals, and to begin the evaluation of the effectiveness of maternal and child services.

In the nutrition program, an analysis of personnel training in this field was conducted, and a course to train nutritionists, dieticians, and hospital auxiliaries was offered.

In environmental sanitation, technical cooperation was provided for planning the water supply and sanitation subsector, and a study was completed to establish a national committee to coordinate activities for the International Drinking Water Supply and Sanitation Decade. A workshop on environmental pollution assessment was conducted in conjunction with ECO; with assistance from CEPIS, Dominican engineers received training in appropriate technologies for the design of water treatment plants.

French Antilles and French Guiana

This year Guadeloupe, Martinique, and French Guiana have stepped up their efforts to coordinate their activities in the health sector and to exchange information on ongoing problems, efforts, and programs. The three islands' participation in the Inter-Regional Meeting on Public Health, held in November 1987 in Martinique, facilitated this process. The islands regard as priorities the specific health programs of AIDS, perinatology, uterine, cervix, and breast cancers, alcoholism, hypertension, oral health, vector control, rheumatic fever, accidents, and environmental health. In addition, in terms of developing health services infrastructure, there is concern over rising costs of health services, and alternatives to hospitalization are being considered. French Guiana, in particular, faces a complex situation both in malaria transmission and in the flood of refugees (as much as 10% of its population). Consequently, resources are being assigned to provide health services for the affected population.

The Organization collaborated in a study to assess the sanitary situation in the Caribbean Basin, its consequences, and cooperation prospects; made a consultant available to Guadeloupe and Martinique to provide training in health education techniques; and supported a computerized study to identify phlebotomites in French Guiana. The islands also received PAHO fellowships in the health priority areas.

Implemented within the framework of the Caribbean Cooperation in Health initiative and to promote technical cooperation among countries, PAHO/WHO financed study visits to improve information on available resources in both the French Departments and the English-speaking Caribbean countries, so as to facilitate the formalization and structuring of a meaningful technical cooperation in health. The Organization also supported the mobilization of internal and external resources through the use of national consultants for PAHO/WHO-supported studies, through participation in the Inter-Regional Meeting of Public Health, and by facilitating visits of delegations from the Eastern Caribbean countries.

To facilitate the islands' increased participation in Caribbean-wide activities promoted by the Organization, as of August 1987 the PAHO/WHO technical cooperation program in the French Antilles and French Guiana came under the responsibility of the Caribbean Program Coordination (CPC) Office in Barbados. In the future, PAHO/WHO's technical cooperation will support the development of health services infrastructure starting by evaluating maternal and child health programs and promoting cooperation activities with other Caribbean countries.

Grenada

Country health officials and PAHO/WHO staff participated in a joint country review of the Organization's technical cooperation in Grenada where the country's health priorities and approaches were analyzed. It identified the development of human resources as a critical area in the overall strengthening of the health services infrastructure and recommended that training be planned and implemented to support specific program areas. The review also targeted the need to strengthen the planning process throughout the entire health system. As a first step, a parish-by-parish health situation analysis was programmed, and PAHO/WHO started to design an appropriate instrument to collect data for this analysis. The country's Health Plan was updated at year's end.

As a part of strengthening the health services infrastructure, the Organization cooperated in developing the community health services information system and supported national programs on maternal and child health, environmental health protection, leprosy control, and nutrition. Seven nationals received PAHO fellowships.

Within the framework of the Caribbean Cooperation in Health initiative, Grenada is participating in the design of subregional and Eastern Caribbean projects. The country participated in various subregional health development activities which PAHO/WHO organized and/or supported.

At year's end, some national projects were in the process of obtaining support for their implementation. To address eye care, one of the Government's health priorities, Grenada signed an agreement with WHO to participate in the AGFUND-funded program on blindness prevention.

Grenada attended a special training effort in health project preparation held in Saint Lucia and organized by PAHO/WHO for Grenada and Saint Lucia. The country worked with Martinique and Guadeloupe in the PAHO/WHO-sponsored technical cooperation program to formalize future cooperation with France and the Caribbean countries. Grenada also hosted a subregional meeting of Registrars General to review the situation of birth and death registrations in the English-speaking Caribbean countries.

PAHO/WHO future efforts will aim toward improving the health services infrastructure through further developments of the information system, institutionalization of the planning process, and strengthening of human resource development. Special efforts also will be made to coordinate activities with the other external institutions and agencies working in health in Grenada.

Guyana

Guyana's health sector underwent significant changes in 1987. With the creation of two Ministries—the Ministry of Medical Education, Environment, and Food Policy and the Ministry of Health—the Prime Minister's Office reinforced the coordination and direction of the Government's health functions. Intrasectoral and intersectoral coordination is also being developed through the Prime Minister's Cabinet Subcommittee, where PAHO/WHO is represented. In addition, the National Insurance Scheme has provided partial financing for some sector projects. These changes set the stage for a better program review and a clearer definition of priorities for cooperation.

During the year PAHO/WHO has cooperated with Guyana in the following priorities: strengthening the health infrastructure, health manpower development, maternal and child health, environmental health, and disease control and prevention. The Organization provided technical cooperation in Guyana through short-term consultancies, temporary advisers, PAHO/WHO staff visits, and by contracting experts. PAHO/WHO also organized courses and seminars and provided equipment and supplies; national officials received PAHO fellowships. Highlights among the year's activities include health manpower studies, alternative financing schemes, local health systems development, and the establishment of an information base for decision making. In addition, four main analyses in maternal and child health including perinatal mortality and morbidity were carried out, and a proposal for a primary health care package based on community participation was developed. The processes of regionalization and decentralization and the development of local health systems are expected to improve the management and productivity of the health sector.

In order to solve priority problems, national resources are being developed through various national and external training programs. In addition, support provided to the Faculty of Health Sciences and the granting of fellowship aids have mobilized human resources to the health sector. Public education has lent strong support to general health promotion, prevention and control of malaria, and extension of the Expanded Program on Immunization. Water and sanitation projects have enlisted women's groups, and a PAHO/WHO study on health financing alternatives has pointed to the National Insurance Scheme as a source of financial support.

In terms of external assistance, support may be sought from the Government of the Netherlands for malaria control activities. Cuba provides staff through a tripartite agreement, and this same scheme is being considered by Brazil. Both Brazil and Venezuela are involved in implementing the malaria control strategy in the border regions. Recently, other organizations and agencies have expressed an interest in assistance to Guyana: the University of Texas in Guyana's medical school; Canada's International Development Research Center (IDRC) in environmental health; the Canadian International Development Agency (CIDA) in the Expanded Program on Immunization; and the Government of Italy in maternal and child health and in vector control programs.

Haiti

The national health policies of Haiti have remained stable since the inception of the provisional National Council of Government. Although health sector development has been a high priority for the provisional government, this year many programs were set back or postponed due to unrest sparked by the upcoming national and regional elections.

The strategies and priorities first outlined in the "Nouvelle Orientation" of 1982 have continued to serve as an overall national policy guide. Health priorities include diarrheal disease control and oral rehydration therapy, diseases preventable by immunization, tuberculosis, nutritional diseases, maternal and child health including family planning, malaria control, and AIDS. Oral rehydration therapy promotion and the Expanded Program on Immunization (EPI) have remained at the forefront of the Government's and PAHO/WHO's public health efforts, with significant activities also being conducted in malaria control, water supply and sanitation systems, tuberculosis, and maternal and child health.

The Organization provided 30 man-weeks of short-term technical consultancies in hospital administration, epidemiology, and health education; 16 man-weeks of in-country cooperation for Regional Office staff in AIDS, tuberculosis, zoonosis, and in the administration of the National Service for Major Endemic Diseases (SNEM); and 27 fellowships to study abroad, 12 short-term and 15 long-term, totaling 296 man-months of training. In addition, PAHO/WHO provided funds for 17 local courses and seminars with over 400 national participants in EPI, nursing supervision, and malaria control. Eight national professionals were hired under a PAHO contract to assist national programs with 77 man-months of technical cooperation in SNEM administration, EPI cold chain, health education, and nursing education.

Despite periodic civil unrest, ongoing immunization programs, selected communal vaccination campaigns, and a two-day Port-au-Prince polio vaccination campaign significantly benefited the national immunization coverage. Present coverage in the under one age group is estimated at 40% for BCG, 30% for DPT, 30% for polio, and 20% for measles; reported polio cases have declined from 34 in 1986 to 12 in 1987. Plans were undertaken to establish a five-year accelerated vaccination program under the aegis of a PAHO/WHO-USAID/UNICEF/Rotary International/Government of Haiti Coordinating Committee to assure that all donor efforts will work toward the Regional goal of polio eradication.

This year PAHO/WHO took a more active role in international health coordination in Haiti. Besides continuing to facilitate cooperation among donors already active in the national health sector, PAHO/WHO staff met monthly with the Coordinating Commission of the Superintendency for National Promotion to ensure that health interests were properly considered in national development programs. The country staff also worked closely with special missions of the World Bank, IDB, and USAID to explore potential expansion of health programming. PAHO/WHO staff also participated in the technical missions of the World Food Program and UNFPA to improve the health impact of their programs. With PAHO/WHO technical cooperation, the initiation of a WHO-supported national program for the prevention and control of AIDS witnessed an unprecedented degree of public participation. Leadership in this initial program was entrusted to a prestigious ten-person, multisectoral National Commission for the Fight Against AIDS. PAHO/WHO also stimulated and partially financed technical cooperation activities among Haiti, the Dominican Republic, the French Antilles, and Israel. The joint effort between the Dominican Republic and Haiti to combat malaria in border areas has become a model for a successful, self-sustaining, and mutually beneficial technical cooperation project among countries.

As Haitian society continues to move toward democracy, interest in and optimism for national development programs will, no doubt, grow in the international community. For example, the World Bank and IDB have expressed an interest in developing new programs to expand malaria control activities, improving central and regional program administration, and strengthening nutrition activities. International donor interest in Haiti's health sector will most likely strain the absorptive capacity of national administrative and managerial systems which now focus on decentralizing responsibilities to the local level. In the future, PAHO/WHO needs to continue serving this rapidly evolving sector.

Jamaica

The country continued to emphasize major national priorities such as the reorganization of health care delivery services by implementing cost-effective measures and seeking alternative sources of financing; achieving national population policy targets; improving support services management in line with the country's available technical capability; and developing human resources. Special attention focused on manpower policy and planning to offset the public health sector's lack of human resources; efforts to secure external financing for hospital restoration to address deteriorating secondary care services; and developing alternative financing sources.

PAHO/WHO technical cooperation included conducting a feasibility study for a hospital restoration project which seeks a loan of $US55 million from IDB; rationalizing hospital resources; improving local health services management, including planning and evaluation processes; improving budgeting and accounting procedures; promoting community participation; supporting women in health and development; and strengthening disaster preparedness activities. PAHO/WHO also cooperated in studies to delineate health centers and health district boundaries and to determine target populations in some parishes. Regarding environmental protection, PAHO/WHO continued to assist in designing the water quality network and in establishing routine schedules for sampling sites. It also provided assistance in setting up a management information system and water quality standards, and in carrying out studies on solid waste management and pollution of the water distribution system.

With the Organization's support, the Government carried out surveys for strengthening epidemiological services, completed revision of the mental health legislation, introduced salt fluoridation as part of the oral health program, and expanded dental auxiliary training.

In the health planning process, advances included formulating a draft five-year work plan and national plans for the control of AIDS, drug abuse, and leprosy. In human resource development, the Organization cooperated in in-country training activities, and several nationals received overseas fellowships.

Although a formal evaluation of health conditions could not be carried out this year, it is evident that the health infrastructure has been strengthened: health care for vulnerable groups such as mothers and children has improved; disease prevention programs have been expanded; epidemiological services, environmental health, health information systems, information management, and health planning have been strengthened; human resource development has progressed; and hospitals and primary health care services have been improved.

PAHO/WHO continued to mobilize national resources by contracting national professionals to support intersectoral committees for environmental pollution control, as well as activities relating to nutrition, food safety, and drug abuse. The Organization also continued to encourage intersectoral articulation among the Ministries of Health, of Youth and Community, and of Construction to carry out the operation of the Duhaney Park Complex.

As in the past, the Organization served as executing agency for several international and bilateral projects: drug abuse prevention and control projects funded by the United Nations Fund for Drug Abuse Control (UNFDAC); a drug abuse epidemiology project funded by USAID; and medical and youth services activities for eight communities and the Duhaney Park Complex funded by the United Nations Fund for Population Activities (UNFPA) and the Government of Norway. To mobilize external support, the Organization led the way in preparing health and population projects with the World Bank and a hospital restoration project with IDB. The Organization also worked to

secure international financing for AIDS and leprosy control programs, and for other specific projects developed under the Caribbean Cooperation in Health initiative.

The Government counts on a well established mechanism for soliciting external cooperation and for allocating funds according to national priorities. The Ministry of Health received major funding from USAID, the World Bank, IDB, the European Economic Community (EEC), the Canadian International Development Agency (CIDA), the International Development Research Center (IDRC) of Canada, and the Government of Italy. Greater coordination among funding agencies is expected in the future.

Netherlands Antilles and Aruba

Economic difficulties in the Kingdom of the Netherlands resulted in an overall deterioration of the economic situation of the islands, including a rise in the unemployment rate. The health sector struggles to contain costs while maintaining or improving standards. This year an Inspector General for the Health Services was named in Aruba, and steps to adapt necessary health legislation for the island are under way; similar legislative updates are in the works for the Netherlands Antilles.

The main health priorities for the Netherlands Antilles and Aruba are health services development, improvement of environmental health, and strengthening of veterinary public health services. Outstanding features in PAHO/WHO's technical cooperation were the development of seminars and advisory services for community-based drug abuse prevention programs; review of plans; conduct of a seminar, and preparation of the groundwork for a simulation exercise in disaster preparedness; development of AIDS prevention and control programs through training and advisory services; and development of human resources through in-service training and continuing education for health and nursing personnel. In addition, the country's health profiles were being updated. The Organization also provided fellowships in radiation hazards and *Aedes aegypti* control, and advisory services to the veterinary public health program in Aruba, Curaçāo, and St. Maarten.

Despite the ongoing weakness of the infrastructure, the year's activities yielded positive results. Personnel training and automatization of the information system have improved awareness of problem areas in the health sector; promotion of an epidemiological approach to health matters has contributed to a more rational use of resources; in-service training has improved the quality and performance of the health services; drug abuse prevention programs were initiated in Aruba and Curaçāo; community participation was enhanced, particularly in the areas of drug abuse and AIDS control; and radiation hazards emanating from an industrial clean-up operation in Aruba were mitigated. An effective *Aedes aegypti* control campaign, carried out with PAHO/WHO support, aims at further decreases in household indices and permits vigilance for possible *Aedes albopictus* importation. The strengthening of the veterinary public health program has begun to show increased local protein production and improvements in zoonosis control. Through workshops and seminars the Organization continues to promote training and better use of national personnel.

The islands' main source of external cooperation is the Kingdom of the Netherlands.

Several meetings were held between health authorities from the Netherlands Antilles and Aruba and PAHO/WHO advisers to develop the Organization's technical cooperation program in a way that addresses the present depressed state of the economy. With PAHO/WHO cooperation, the Government of the Netherlands is exploring possible project support through the European Economic Community.

Saint Lucia

After the new Government of Saint Lucia expressed its firm commitment to decentralization, health authorities began taking steps to implement this policy within the health sector. With PAHO/WHO collaboration, a Draft Health Plan 1987-1991 was prepared, and a working group assumed responsibility for gathering background information for a new national hospital project.

Several national teams and PAHO/WHO staff undertook a joint review of the Organization's technical cooperation to Saint Lucia, which helped assess national health priorities in light of the current political orientation and the Organization's cooperation. The need to consider the new national hospital project emerged as a key priority. PAHO/WHO contracted a consultant to study the current patient referral mechanism and to make recommendations for its improvement. In collaboration with the Government of Canada, the Organization subsequently organized a team of consultants—including a hospital administrator, an architect, and a financial analyst—to prepare the prefeasibility study for the new national hospital.

In response to the need to strengthen the local health systems as part of the decentralization process and of the process of organizing the health services into networks, PAHO/WHO is working to develop a suitable data collecting instrument to be used at regional level. This tool will serve to conduct a region-by-region health situation analysis.

AIDS also has been given high priority: plans got under way for an AIDS national conference with broad community participation; PAHO/WHO has also assisted the country's efforts on AIDS by providing technical support and supplies.

The Organization has provided technical cooperation in environmental protection, especially in water quality and solid waste protection. A PAHO/WHO-supported vector control project has been successfully implemented in two sectors of the country with intersectoral collaboration and community participation. This effort will be expanded to cover the whole country. The Organization also has collaborated in other program areas including maternal and child health, leprosy control, rehabilitation, drug supplies, and project preparation. Twelve nationals received PAHO fellowships in the course of the year.

Saint Lucia participates in the Caribbean Cooperation in Health initiative, and the country was represented in different subregional health development activities supported by the Organization. Saint Lucia has also participated in the PAHO/WHO program of technical cooperation among countries with the French Departments of Martinique and Guadeloupe. Preliminary missions from Italy and France visited the country with PAHO/WHO officials to identify potential cooperation in CCH projects and other areas.

Saint Kitts and Nevis

Recognizing that it must increase the operating capacity of the health sector as part of its strategy to attain the goal of health for all, the Government has expressed the need to strengthen sectoral and institutional planning, programming, and evaluation processes, and to promote adequate present and future health manpower development through training various health personnel as health teams.

PAHO/WHO provided technical support for strengthening health services infrastructure in health manpower development, nursing services, and disaster preparedness; nine nationals received PAHO fellowships.

The Organization continues to support UNFPA-funded national projects on family planning and family life education aimed at reducing the incidence of adolescent pregnancy. Assistance also was provided to training programs for family nurse practitioners and their utilization. Technical cooperation was made available in control of diarrheal diseases and in the Expanded Program on Immunization to reduce morbidity and mortality in children under five. Perinatal records were also introduced to strengthen perinatal care.

The PAHO/WHO adviser in vector control reviewed the country's program and provided technical orientation. A community-based vector control project was under consideration at the end of the year.

Saint Kitts and Nevis fully participates in the Caribbean Cooperation in Health (CCH) initiative, and has been visited by PAHO/WHO officials and foreign missions interested in funding country project proposals under CCH. The country participated in most of the subregional events organized or supported by the Organization. Saint Kitts and Nevis participated with Martinique and Guadeloupe in the program of technical cooperation among countries designed to promote cooperation in health among Caribbean countries.

The Organization has programmed its support in Saint Kitts and Nevis toward strengthening the institutionalization of the planning process and developing local health services and health manpower. PAHO/WHO will cooperate with Saint Kitts and Nevis in the country's participation in the Subregional and Eastern Caribbean level projects under CCH, and will provide support to their national projects.

St. Vincent and the Grenadines

The Organization's technical cooperation supported national health sector efforts both in health services infrastructure and specific program areas.

In manpower development, PAHO/WHO helped provide in-country training, granted ten fellowships in overseas institutions, and supported programs in nursing services and disaster preparedness. In environmental protection, PAHO/WHO worked with the Government to organize a national solid waste management workshop, and recommended improvements in the operation of the sanitary landfill for solid waste disposal for Kingstown and its environs.

The Organization worked toward strengthening maternal and child health services by serving as executing agency for the UNFPA-funded family life education and family planning projects, and by providing human resource development training for family nurse practitioners and family life educators.

PAHO/WHO continued to support the Expanded Program on Immunization and the diarrheal disease control program; the Joint PAHO/WHO-UNICEF Nutrition Support Program continued to be implemented.

Within the context of PAHO/WHO's program of technical cooperation among countries, experts from Trinidad and Tobago assessed hospital statistical requirements. St. Vincent and the Grenadines participates fully in the Caribbean Cooperation in Health (CCH) initiative, as well as in most subregional events supported by PAHO/WHO. The Organization will continue to facilitate the country's participation in CCH subregional and Eastern Caribbean level projects, and will support the national project to upgrade blood transfusion services.

Future PAHO/WHO technical cooperation will promote the institutionalization of the planning process, the integration of health services into a network within the health system, and the strengthening of local health services. A joint country evaluation of the PAHO/WHO program of technical cooperation is planned for 1988.

Suriname

The country's rapidly deteriorating economic situation has adversely affected the health sector: medical and office equipment, supplies, and manpower reached all-time lows; malaria was on the rise, especially in the interior; and portions of the country were deprived of integrated health services for periods of time. Given these conditions, national health priorities aim at consolidating gains, training for future needs, decentralizing services, and mobilizing external resources. PAHO/WHO continues to support the Ministry of Health in monitoring the worsening health situation, and provides advice and assistance in developing activities to combat this crisis.

This year, the Organization's technical cooperation helped advance the decentralization of regional health services; the planning and conduct of management, budgeting, and information systems workshops; and the strengthening of the environmental health program by establishing an environmental health division within the Ministry of Health. Other activities in this program include training of a national in environmental health engineering and conducting a workshop on water treatment as part of the ongoing effort to protect water supplies. Training for food handlers and a workshop on food safety helped the food safety program reduce food-borne diseases; a food production law is being revised. Additional training included a five-month computer course for all health personnel and training for health personnel in nosocomial infections, which has reduced hospital infections. A national drug formulary was completed and is being prepared for final publication.

In communicable diseases, Suriname developed an AIDS program, has begun to screen blood for HIV infection, and has formally appointed a national AIDS committee where PAHO/WHO serves as an *ex officio* member.

Despite shortages of manpower, supplies, and transportation, the Expanded Program on Immunization (EPI) continues to reach high levels of coverage; efforts to train and retrain personnel aim at maintaining this degree of success. PAHO/WHO is an *ex officio* member of the National Malaria Board, and an emergency plan to deal with malaria is being implemented and further refined.

To encourage intersectoral cooperation, the Organization works closely with several public agencies, especially with the Ministry of Public Works in environmental health, the Ministry of Natural Resources in water projects, the Minis-

try of Education in several areas including AIDS, and the Ministry of Agriculture in zoonosis control.

Finally, the Organization's cooperation in mobilizing external resources focused on project development, specifically in AIDS, cervical cancer, and malaria control, and on strengthening regional health services and the control of alcohol and drug abuse. The Government recently began a leprosy project with Emmaüs Switzerland and PAHO/WHO.

Trinidad and Tobago

The new Government, elected in December 1986, brought functional changes in the Ministries: the Ministry of Health and Environment became the Ministry of Health, Welfare, and Status of Women, and environmental affairs were incorporated into the Ministry of Food Production, Marine Exploitation, Forestry, and the Environment. Tobago was given full responsibility for certain statutory functions including health and environment.

In April, a joint Country-PAHO/WHO review of the Organization's technical cooperation studied changes in priorities and in the health situation. Recommendations were made and priority areas identified for the next quadrennium.

In health services development, technical cooperation emphasized implementation of the Draft National Health Plan, monitoring and evaluation of broad program implementation, development of detailed country programs, study of hospital bed demand, determination of in-patient care costs at major general hospitals, architectural evaluation of three hospitals, development of plans for commissioning the Eric Williams Medical Sciences Complex, including guidelines for operational manuals, and analysis of the health manpower situation.

PAHO/WHO cooperated to increase the operating capacity by improving quality assurance in nursing and developing methodologies for personnel allocation and utilization of nurses; by participating in a workshop to provide new information on planning, administration, and control processes applicable to nursing schools; and by providing guidelines to develop a three-year nursing plan. The first dietetic internship program was evaluated. A refresher course for food service supervisors on organizing and managing food service departments and a workshop on preventing and controlling obesity, diabetes, and hypertension through nutrition education were conducted.

In health services research, the Organization supported a pesticide awareness survey and a study to determine the prevalence of leptospirosis in Tobago. Based on the survey results, educational materials designed to correct deficiencies of knowledge were developed.

To strengthen health manpower development, fellowships were awarded in public health, health education, epidemiology, leprosy, leptospirosis, drug and alcohol abuse, environmental sciences, blood transfusion services, health administration, and human resource development. PAHO/WHO also continued to make available to health and other relevant personnel scientific, technical, managerial, and other appropriate health information.

In environmental control, establishing an environmental management agency or a similar mechanism within the new Ministry of Food Production, Marine Exploitation, Forestry, and the Environment to coordinate environmental activities at the national level was recommended. A draft document was presented to the Government for approval. Strengthening the national toxicity testing capability was also supported. The Organization also assisted in developing a public health engineering training program for selected senior public health in-

spectors, preliminary performance indicators for the national food safety program, and a subregional training course on chemical safety and managing toxic and hazardous materials.

With the collaboration of the Inter-American Institute for Cooperation in Agriculture, PAHO/WHO organized a training workshop designed to increase health and agricultural personnel's awareness of their responsibility in promoting safe pesticide use. Support was also given to strengthening disaster management for the health sector in Tobago in general and for the Scarborough General Hospital in particular. Through the University of the West Indies Distance Teaching Experiment, the Organization sponsored a course for health personnel on emergency health management after disasters.

PAHO/WHO cooperated with the Government in *Aedes aegypti* eradication through an ongoing evaluation of field activities, *Aedes albopictus* surveillance, refresher training of field personnel, training (fellowship) of a senior officer in vector control administration and malaria surveillance, and training of field staff in the use and maintenance of ultra low-volume (ULV) equipment. In collaboration with CAREC, assistance was provided to establish a pilot project for biological control of *Aedes aegypti* using *Toxorhynchites moctezuma*. Other efforts in communicable diseases included support for an evaluation of multi-drug therapy for leprosy and for Trinidad and Tobago's participation in the Pan American Teleconference on AIDS.

Technical cooperation in maternal and child health consisted of assisting the Expanded Program on Immunization (EPI) in procuring vaccines, collaborating with CAREC in developing a draft immunization manual for health personnel, and supporting a survey to determine the immunization status of children and the reason for drop-outs. Other activities also were conducted in diarrheal diseases and acute respiratory infections, such as control programming at country level; a national plan and work program for growth charts to monitor and improve the nutritional status of children; the development of a community health education program, including producing audiovisual materials for the prevention and control of chronic noncommunicable diseases; training three dental nurse instructors/supervisors to improve the competence of the Dental Nurses School; continuing education courses for dental nurses in the field; support for family life education and a seminar on child abuse; and preparing a draft manual on maternal and child health.

Turks and Caicos Islands

The National Health Plan, which identifies health manpower development as a major priority, is now in effect after official Government approval. The Plan has allowed the planning process in the Turks and Caicos Islands to progress. The Organization contributed to this process by promoting intersectoral action in the course of carrying out its technical cooperation activities.

PAHO/WHO cooperated in health manpower development by providing training, consultancy services, supplies and equipment, and fellowships in nursing (general, clinical, midwifery, operating room techniques, and dental); some of these activities were jointly financed with UNDP.

The Organization assisted in strengthening the health services delivery system, in addressing anemia control through the Caribbean Food and Nutrition Institute (CFNI), and in evaluating control programs of sexually transmitted diseases and leprosy. It also made

available supplies and equipment for both the UNFPA-funded family planning program and for the environmental health program.

PAHO/WHO continued to be the executing agency for the UNFPA-funded project to strengthen maternal and child health and family planning and the UNDP-funded project to develop health services. Within the framework of technical cooperation among countries, PAHO/WHO assisted in developing specific projects under the Caribbean Cooperation in Health initiative which will benefit the Turks and Caicos Islands.

CENTRAL AMERICA AND PANAMA

Belize

The five-year macroeconomic plan, which is the country's main tool for socioeconomic and political development, and the 1984-1988 National Health Plan outline priority health needs for Belize. Among these are extension of health services coverage, concentration on high-risk groups such as mothers and children and low-income families, prevention and control of communicable and noncommunicable diseases, and development of an efficient health information system to support planning, programming, management, and evaluation of the health sector. The Ministry of Health implemented activities in health services development based on the strategy of primary health care, including oral health; improvement of intermediate hospital services such as laboratories and X-rays; essential drugs supplies; reinforcement of the financial administrative system; prevention and control of communicable diseases with emphasis on tuberculosis and sexually-transmitted diseases including AIDS; and improvement of environmental health and emergency preparedness.

In support of these efforts, PAHO/WHO provided 638 consultant days for 72 regional and intercountry consultants in malaria control, maternal and child health, water and sanitation, mental health, nutrition, essential drugs, immunization, zoonosis, radiology, hospital equipment, managerial capacity, nursing services, and development of human resources. In addition, 13 health workers from Belize received fellowships in public health, and nationals participated in 15 regional and subregional seminars and workshops organized and supported by the Organization.

Within the context of the Priority Health Needs in Central America and Panama initiative, and with the Organization's technical and administrative support, the Ministry of Health conducted a subregional workshop in Caye Chapel to evaluate water supply and sanitation. The workshop was well attended by representatives from the countries of the Isthmus. In conjunction with the Ministry of Social Services, focal point for the Women, Health, and Development program in the country, the Ministry of Health also carried out a seminar-workshop on women, health, and development. The participants resolved to develop a five-year action plan. The Organization also provided technical, financial, and administrative support for workshops on essential drugs supply, traffic accident prevention, prevention of drug abuse (with participants from 28 countries), and for Belize's participation in the Pan American Teleconference on AIDS.

PAHO/WHO provided technical assistance to the Ministry of Health in planning the new

Belize City Hospital and for a national in-service training seminar on radiology for medical and technical field personnel.

To strengthen the program of control and prevention of communicable diseases, PAHO/WHO awarded a grant of $US6,000 to purchase an autoclave for AIDS screening in high-risk groups and helped develop the 1988-1991 plan of action for the Expanded Program on Immunization. The Organization also collaborated in reconstructing six dental clinics and contributed supplies and equipment for sanitary inspection, malaria, diarrheal diseases, rabies, and immunization programs.

The development of priority programs has benefited the health conditions of the country. According to the Ministry of Health's Statistics Department, the child mortality rate per 1,000 children decreased from 27.9% in 1981 to 24.6% in 1986; maternal mortality per 1,000 live births decreased from 0.51% in 1981 to 0.32% in 1985; the number of registered malaria cases decreased from 2,643 in 1986 to 2,330 cases by October 1987; and, according to a 1986 survey, 90% of DPT and poliomyelitis vaccination coverage was reached in groups of children ages 1-5.

A technical cooperation plan between Belize and Mexico has increased the efficacy of public health programs in maternal and child health, immunization, and vector control (malaria and dengue) in the border areas of both countries. Throughout the year, both countries held three technical and two ministerial level meetings and constantly exchanged knowledge, epidemiological information, and supplies. PAHO/WHO has encouraged a similar plan between Belize and Guatemala, which was still pending approval at year's end.

To help mobilize external resources, PAHO/WHO worked with UNDP and began a UNDP-PAHO/WHO-financed project to foster health service planning and to increase Belize's administrative efficacy and efficiency. PAHO/WHO also collaborated with UNICEF in child survival activities; with the Canadian International Development Agency (CIDA) in water supply and basic sanitation; with the Ministry of Cooperation of the Netherlands in preparing a proposal for health services maintenance; with Rotary International, UNICEF, USAID, and CIDA in the Expanded Program on Immunization; and with USAID in vector control of malaria and dengue, essential drugs, prevention of eye diseases, and control of rabies. To achieve intersectoral coordination, the Organization worked closely with the Ministries of Health, of Education and Sports, of Agriculture, of Public Works, and of Social Services to establish an Interministerial Committee.

Costa Rica

The Government continued to follow priorities established in its national health policy and its 1986-1990 National Economic and Social Development Plan, both of which stress the importance of protecting the most vulnerable groups through programs aimed at fulfilling the population's basic needs. To consolidate and integrate activities designed to extend coverage, the Ministry of Health established a Department of Primary Care. The Ministry also restructured the administrative area in order to decentralize the local health systems' basic care units, so they gradually can assume responsibility for programming, management, control of supplies, financial and accounting aspects, and personnel management.

The Costa Rican Social Security Agency strengthened its operating capacity; increased the efficiency of its supply systems, service or-

ganization, administrative staff training, and production of services; and developed new ambulatory care models (training, ambulatory surgery, clinics with programs for family care and community care).

PAHO/WHO technical cooperation concentrated on developing the infrastructure, human resources, and the national and subregional components of the Plan for Priority Health Needs in Central America and Panama. Efforts were channeled toward administrative decentralization—a priority for the entire public sector—and local programming, as well as to strengthen the health information system and the managerial, financial, and operational capacity. In addition to staff stationed in Costa Rica, the Organization provided 54 short-term consultants (1,638 days); 22 grants for research and for activity development; furnished supplies and equipment; supported 131 courses and workshops (3,740 participants); subsidized the attendance of Costa Ricans at meetings, seminars, and workshops in 16 countries; and, through its fellowships, permitted 65 Costa Rican officials to study health-related subjects in 15 other countries.

In strengthening the health sector, highlights included the decision to concentrate efforts on population groups in underserved areas, development of comprehensive programs based on primary care strategies and community participation, establishment of a comprehensive capacity to respond at the local level, and the development of more efficient and effective activities in the midst of a significant financial crisis.

Even though the measles epidemic that began in 1986 continued, the incidence of other communicable diseases increased somewhat, and AIDS cases doubled, health conditions remained good overall. Life expectancy is higher than 74 years of age; infant mortality was 17.6 per 1,000 live births and preschool mortality 0.73 per 1,000; institutional obstetrical care was above 94%; and coverage for immunizations remained above 70%. Ninety-three percent of the population had access to piped water and 95% to sanitary excreta disposal systems.

The development of national capabilities to solve priority problems increased with the establishment and consolidation of technical groups charged with special problems and with the strengthening of the service infrastructure.

Within technical cooperation among countries, the Organization—with support from USAID, IDB, the W.K. Kellogg Foundation, the European Community, the Government of Italy, the Central America and Panama Operational Network, INCAP, the Government of the Netherlands, the Office of the United Nations High Commissioner for Refugees (UNHCR), and UNDP—worked to coordinate activities under the Plan for Priority Health Needs in Central America and Panama at national and subregional levels; participated in efforts to define the Costa Rican portfolio of projects under the Social Investment Program for the Central American Isthmus; helped in negotiations for border agreements for technical cooperation in health with Nicaragua and Panama; and participated in the coordination of activities with other social and economic sectors.

A joint Country-PAHO/WHO review of the Organization's technical cooperation conducted in March, led to the establishment of lines of action for PAHO/WHO programming in 1987 and for 1988-1991 and revealed several priority areas which required external cooperation and which reflect areas in the Plan for Priority Health Needs for the subregion. Securing resources to develop the infrastructure of primary health services; administrative decentralization; and consolidating local health services, which concentrate on communicable disease prevention and control, quality health care, food protection, maternal and child health, and environmental health, will be emphasized. Staff training to support basic activities is another area that will require external support, particularly with new educational models for all the country's health workers for the continuing education process.

El Salvador

The Ministry of Public Health and Social Welfare adopted the following strategies: health service development based on a model of local health systems (SILOS) and on local programming; human resource development; and definition of priority health care programs based on formulating a national maternal and child health program.

Although the persistent domestic conflict has not allowed for a formally structured health sector, conditions are favorable for starting several functional links and for developing joint social projects with education, agriculture, labor, and housing sectors. This should pave the way for a planned development of the health service infrastructure that encompasses a well-defined program content with social sector projections.

The following summary highlights some of PAHO/WHO's activities during the year.

A national project was formulated to repair several Metropolitan Area health facilities which were damaged during the 1986 earthquake. The project, which eventually will extend to the entire country, has been funded by the Federal Republic of Germany, France, Italy, the Netherlands, the European Community, and PAHO/WHO. A document was prepared which is the foundation for preparing projects for reconstructing and developing service systems and for defining the role of organizations and donor countries in this effort. A multidisciplinary team was established to oversee the development of SILOS and local programming activities. An evaluation of the managerial development project, conducted with extensive participation from the Ministry and the Salvadorian Social Security Institute, led to important conclusions that will help search for new approaches to joint work between these institutions and the SILOS project.

In human resource development, agreement was reached to develop a plan of action for solving current pressing problems as well as to lay the groundwork for a planned future development of health personnel. Areas of mutual interest to training institutions and users were sought as the basis for arriving at operational agreements on work-study programs, training in health education and health care methods in training institutions, identification of needs, and implementation of training programs. The School of Dentistry and the Ministry signed an agreement to implement a work-study strategy and to adjust the dental curriculum accordingly.

Work began on formulating comprehensive and priority health programs centered on maternal and child health. Joint efforts by UNFPA, INCAP, and PAHO/WHO have fostered decision making and the initiation of activities. The National Maternal and Child Commission was established, with representatives from the Ministry, medical and nursing schools, pediatrics and gynecological associations, and specialized hospitals. Another important step was the stratification of vaccination drives according to accessibility and to the population and geographic jurisdictions of the health services.

In basic sanitation, a bill on drinking water supply was submitted and a master plan for solid waste disposal in the Metropolitan Area was drawn up. Most efforts focused on providing training in environmental sanitation and water supply to staff from all levels. Country-wide computerized hydrogeological surveys conducted in rural areas were used to prepare investment projects for many agencies and countries.

The incidence of malaria has been reduced in recent years by combining measures to combat the adult vector and parasites with swamp drainage and coastal wetland control to prevent breeding grounds. This is an experience that El Salvador could share with other countries within the framework of technical cooperation among countries. PAHO/WHO supported and provided guidance to these ac-

tivities through resources from its country and regional offices as well as with locally hired personnel.

The Organization also supported better use of internal resources. Multidisciplinary teams with representatives from the Ministry's executive, regulatory, and advisory branches were established, as were working groups, some with participants from the schools of medicine, dentistry, pharmacy, nursing, and the Ministry, and others with representatives from the Ministry and the Salvadorian Social Security Institute; all of them function according to SILOS. An effort also was made to identify research groups and to support them in work geared toward national priorities.

The Ministry, the major international organizations, and the cooperating countries agreed on the need to coordinate external cooperation in El Salvador. The Ministry requested PAHO/WHO's support in this task, a request endorsed by the other organizations and the cooperating countries. The possibility of formulating social projects involving participation by a number of United Nations agencies was explored with UNDP and INCAP; a maternal and child health program will be formulated with UNFPA and UNICEF; and work on the SILOS will be carried out with the Governments of the Netherlands and Italy, and with the European Community. As a basic strategy, the Ministry is to formulate national programs for maternal and child health and for human resources using external contributions as an integral part of the funding but maintaining the autonomy of each program.

Guatemala

The Government targeted health priorities in maternal and child care, essential drugs, drinking water supply, and environmental sanitation. These priorities work within an ongoing process of democratization; an improvement in the safety of individuals, institutions, and society as a whole; an economic readjustment; and a betterment of public administration that emphasizes the decentralization of health services.

National priorities coincide with those in the Plan for Priority Health Needs in Central America and Panama and with the Organization's basic principles for action. PAHO/WHO activities within these priority areas mainly focused on: development of the health services, including institutional development for decentralization; promoting the majority of the population's access to essential drugs and assuring their quality; maternal and child health; drinking water supply and sanitation, emphasizing quality and more access; communicable diseases, particularly the control of AIDS, malaria, dengue, and *Aedes aegypti*; and human resource development. Activities deserving special mention are summarized below.

Primary health care continued to be instituted in all departments and in marginal areas of the capital, and basic concepts for programming local health systems which have been introduced have led toward program decentralization. However, even though extending the primary care has yielded more coverage, the quality of care needs some improvement. The General Directorate for Health prepared the 1988 national maternal and child health plan in collaboration with PAHO/WHO, and established a survey unit. Through the cooperation of national personnel and the corresponding staff in each of the countries of the Isthmus, a subregional survey of the human resource situation in the health sector was prepared for submission to the III Special Meeting of the Health Sector of Central America and Panama (RESSCAP). The Government and

San Carlos University signed an agreement to establish a school of public health whose curriculum was designed with PAHO/WHO cooperation.

National-resource mobilization was particularly encouraging during the year. National staff participated in all areas of PAHO/WHO cooperation in Guatemala, and this new cooperation approach resulted in better trained nationals and in more self-sufficiency for addressing and formulating priority health problems and for seeking their solutions. Examples of this approach were the evaluation of the human resource situation in Central America and Panama; the development of a model for decentralizing the Ministry of Public Health and Social Welfare; implementation of primary health care; and solving the paralytic shellfish poisoning problem. Faculty from the Rafael Landívar University collaborated with PAHO/WHO in an essential drug study conducted within the framework of the Plan for Priority Health Needs in Central America and Panama. The active involvement of universities in health activities is being increasingly promoted.

PAHO/WHO-supported intersectoral activities included pesticide-monitoring operations conducted through a committee involving the Ministries of Health and of Agriculture and San Carlos University; setting up technical staff teams from the Ministries of Health and of Agriculture and from the National Emergency Committee to examine special situations (e.g. the paralytic shellfish poisoning syndrome); and community education activities involving the Ministries of Health and of Education and local committees. In addition, specific activities addressing women's participation in health and development were programmed. Other examples of intersectoral activities include the joint work of the Ministries of Health and of Agriculture in the urban canine rabies eradication program; of the Ministries of Health, of Agriculture, of Finance, and of Economics in food control; of the Vice-Presidency and the Ministries of Planning, of Finance, of Education, and of Health in administrative decentralization; and joint actions with the Secretariat for Social Welfare.

In mobilization of external resources for priority areas, assistance was provided by the Governments of France, Italy, Spain, and Switzerland. Laboratory equipment to produce rabies vaccine was donated to Guatemala. A drug information center was established at San Carlos University as part of a joint effort by the university and the Ministry of Health with cooperation from Spanish institutions. Funding and technical educational materials were received for the project for essential drugs and primary care in Sololá, and foreign experts were made available for the human resource program.

The Government signed health agreements with El Salvador, Honduras, and Nicaragua and held a first meeting with Belize to identify potential areas of cooperation within the concept of technical cooperation among countries. It also established the foundation for developing a research center for technology in health for Central America and Panama.

The Organization promoted intrasectoral linkage between the Ministry of Health and the Guatemalan Social Security Institute (IGSS), particularly for IGSS's direct participation in and for the task force's human resource evaluation for RESSCAP III. Other intersectoral activities include the participation of all health-sector institutions in the National Commission on AIDS and the organizing of meetings to discuss general interest matters such as standards and management for blood banks.

Honduras

The Government has identified the following priority areas for PAHO/WHO cooperation: developing national capabilities to conduct health programs and services with emphasis on management training; formulating and implementing a national plan for technical cooperation to determine assistance needs and define responsibilities for cooperating agencies and governments while searching for ways of implementing technical cooperation among countries and promoting dialogue and understanding between neighboring countries; searching for technological solutions tailored to the country's degree of development and investment possibilities; promoting coordination among institutions from the health sector and elsewhere; and jointly developing health education strategies with other sectors.

PAHO/WHO cooperated in strengthening national efforts to develop the health sector, especially regarding the sector's managerial and analytical capabilities, and, in order to promote decentralization of local health systems in selected areas of the country, advised the program for regionalization of health services.

As part of the Central American subregional project for essential drugs, the Organization cooperated in updating the country's pharmacological formulary, in promoting educational activities to encourage the population's proper use of drugs, and in facilitating the country's participation in the Essential Drug Revolving Fund for Central America and Panama (FORMED).

Regarding human resources PAHO/WHO continued to collaborate in the technical and administrative strengthening of training centers for technical and auxiliary personnel and in university-level, professional training. In particular it supported the schools of medicine and nursing in developing a work-study instructional model. The Organization also cooperated in the health education and community participation program by designing and financing an educational demonstration project for the community and for entry-level health workers.

In maternal and child health, the Organization cooperated in formulating a national plan, in providing management training for the program's senior staff, and in training volunteers in the community.

In food and nutrition, PAHO/WHO collaborated in the technical and administrative strengthening of multisectoral activity implementation at national and regional levels, in the formulation and implementation of the national nutrition survey, and in the first height survey of schoolchildren. With support from INCAP, national personnel were trained in formulating and administering group food programs, especially for mothers, infants, and schoolchildren.

Regarding the control of the incidence of the most prevalent diseases, PAHO/WHO cooperated in assessing the impact of national programs for controlling diarrheal diseases and acute respiratory infections, in training staff in bacteriological diagnosis of tuberculosis and leprosy, in establishing a national AIDS control program, in a program for control of *Aedes aegypti*, malaria, and rabies, and in formulating a cooperation agreement among the Government, the U.S. Agency for International Development (USAID), UNICEF, Rotary International, and PAHO/WHO.

Nicaragua

The impact of the political-military conflict on Nicaragua's socioeconomic conditions resulted in a deterioration of both living conditions and health care levels in rural communities and marginal urban districts. The population's shift from rural to urban areas also continues. The diminished foreign currency available for the health sector particularly limited procurements of basic inputs for health programs.

In response to this situation, the people's organizations and the Government, acting through the Ministry of Health, aimed their work toward two basic objectives: preventing further deterioration of health conditions and making the best possible use of installed capacity in the National Health System. Administrative procedures affecting the organization, decentralization, and regionalization of health services were redirected with these objectives in mind.

In regard to the first objective, priority was given to providing health care to soldiers and the disabled, the rural population, workers, native communities along the Atlantic coast, and high-risk groups—mothers and children under one year of age. To reach the second objective, sanitation and health conditions, regional epidemiological profiles and the epidemiological control and surveillance system were more clearly defined. Work also progressed in consolidating the network of primary care services and in organizing territorial health systems.

In human resources, substantial advances were gained in preparing the diagnostic and five-year development plan, which, after some changes, will be put into practice in 1988.

The Ministry of Health proposed a new project to ensure optimal use of funds to purchase drugs, inputs, and equipment to maintain health services by establishing enterprises responsible for procuring, distributing, and monitoring products, 90% of which are imports.

At year's end, the Ministry began planning and programming activities based on an approach for strategic functional planning that considers domestic conditions and projects activities on a three-year basis, giving priority to problems in need of urgent solution and establishing flexible operating mechanisms that allow ongoing adjustment.

PAHO/WHO based its technical cooperation on the compatibility between the country's priorities and the "Orientation and Program Priorities for PAHO During the Quadrennium 1987-1990," and, in coordination with INCAP and PASCAP, directed its cooperation to three basic areas: development of the health service infrastructure (health management process, service organization and development, technical cooperation among countries, development of information systems, technology and critical inputs, human resource development, and emergency preparedness); priority problems (maternal and child health, communicable disease prevention and control, rehabilitation and health of the disabled, food and nutrition, and environmental health); and management of scientific knowledge (health research and the national system for scientific and technical information).

Despite the country's socioeconomic conditions, the Government, through the Ministry of Health and with the organized participation of the community, maintained a basic health level, attested to by immunization levels in children below age five and by the absence of poliomyelitis cases. In malaria and dengue, health services, both regional ones and those within the territorial health systems, addressed the needs of the population by improving the organization and management of available resources by lengthening the work day and by operating 24-hour health centers and posts.

To improve the use of medicaments, the national therapeutic formulary and the list of drugs were applied in five of the nine health regions.

Major health problems included a high infant mortality rate (64.5 per 1,000 live births); 78% of which was due to preventable diseases such as acute diarrheal diseases, acute respiratory infections, septicemia, malnutrition, and neonatal death. The mortality rate in the 15- to 49-year age group remained at 2.4 per 1,000 inhabitants, due mostly to wounds inflicted by firearms. Protein energy malnutrition continues to affect children under age six and pregnant and nursing women. Studies conducted during the year showed that 22% of the school population suffers from malnutrition, vitamin A deficiency, and nutritional anemia. Poor sanitary conditions continue to prevail in rural areas, where only 13% of the population has access to water supply and excreta disposal services.

During the year Nicaragua improved the mobilization and coordination of external assistance through the Plan for Priority Health Needs in Central America and Panama. Multilateral agencies (IDB, UNFPA, WFP, UNDP, and UNICEF) contributed approximately $US5 million. In addition, within technical cooperation among countries, significant advances were made through border agreements for cooperation with Costa Rica and Honduras, and through collaboration agreements with Brazil, Cuba, and Guatemala.

Panama

Despite the internal crisis and economic problems besetting Panama, the new health authorities that took office in November 1986 reorganized the Ministry of Health in the course of the year, and established guidelines and strategies to develop the sector according to the commitment to reach the goal of health for all by the year 2000.

To implement the investment plan, the Ministry mobilized resources from the Preinvestment Fund, prepared designs and plans to modernize several hospitals and constructed others, and improved the peripheral structure by reorganizing the health sectors in the most underserved areas. According to the strategy used, resources are allocated to reduce costs and to regulate health activities to improve conditions of the more than 400,000 underserved inhabitants. The Government also stressed ambulatory care to increase coverage and make better use of resources. Regionalization was strengthened, and community participation was fostered through concerted efforts from governmental and nongovernmental institutions. To this end, the Ministry retrained some of its staff and redirected its efforts toward the strengthening of local health systems. In addition, efforts were undertaken to bring the health services in line with traditional programs, eliminating verticality, bringing about a better integration of health actions, and concentrating the services at the local level. A bill was ratified which authorizes direct purchase of drugs, lowering their cost and making them more accessible to the population, and a program was undertaken to streamline registration and control of drugs and to assure their quality. An ambitious equipment-maintenance plan which provides staff training, establishes three maintenance centers, and consolidates an adequate support structure, also was adopted this year.

The Infant Survival Plan and production of a highly nutritive, low-cost vegetable mixture progressed. Advances were made in extending the use of oral rehydration therapy, in vaccination, and in the care of pregnant women. Through contributions from Rotary Interna-

tional and support from local health systems, the Expanded Program on Immunization conducted several vaccination drives. Malaria continued to consume resources and greater efforts to control outbreaks along the border with Colombia and, for the first time, along the border with Costa Rica. A total of 1,080 cases were reported. *Aedes* reinfestations increased, and control operations were hampered by financial constraints. The Government continued to extend the sanitation network, achieving a coverage of 69% of the rural and 99% of the urban population. In five years, 569 water supply systems and 25,000 latrines have been built.

Health conditions remained good, save for a measles outbreak and the rise in malaria. Life expectancy at birth was over 71 years of age, infant mortality 21.8 per 1,000 live births, and mortality in the 1- to 4-year age group 1.7 per 1,000. Obstetrical care in institutions was higher than 82%. The leading causes of death were cancer, heart disease, and accidents. Cases of sexually transmitted diseases, including AIDS, increased.

PAHO/WHO technical cooperation focused on supplementing national efforts, particularly those aimed at improving the infrastructure, at designing strategies for regulating health service care, and instituting measures to strengthen management carried out according to a new and more closely integrated health care model. Efforts to strengthen local health services by concentrating and reallocating resources to generate appropriate solutions in each locality were supported. A jointly financed effort from IDB and PAHO/WHO broadened the technical cooperation scope through the use of experts in planning, hospital architecture, engineering, medical and surgical equipment and instruments, maintenance, and energy conservation, as well as administrators, economists, and financial analysts. In addition, resources were mobilized to hire national experts. During the year the Organization hired 235 consultants through personal service contracts; provided 63.3 months of short-term consultant services; and supported 209 courses or seminars with 3,238 participants.

The Organization also promoted the mobilization of resources from the Plan for Priority Health Needs in Central America and Panama to collaborate with national authorities in defining food and nutrition strategies; from the Government of Spain for essential drugs work; from IDB, the Ministry of Health, and the Social Security Agency for maintaining equipment and medical facilities; from IDB, GTZ (Federal Republic of Germany), and the National Water Supply and Sewerage Institute for water and sanitation activities; from USAID and IDB for communicable disease control; from IDB, Rotary International, the Ministry of Health, and the Social Security Agency for expanding EPI; and from INCAP, UNICEF, UNFPA, the Ministry of Health, and the Social Security Agency for infant survival. Resources from UNICEF, the Ministry, the Social Security Agency, and PAHO/WHO also were used to support local health systems. The Governments of France, the Federal Republic of Germany, Italy, the Netherlands, Spain, Switzerland, and the United States of America also contributed to other health programs.

NORTH AMERICA

Canada

In Canada, the primary responsibility for health and social affairs rests with the provincial governments. They are responsible for the organization and delivery of health care, as well as for the administration of medical care and hospital care insurance programs. However, permanent health consultation networks exist between the Federal and Provincial Governments, and the Federal Government monitors the provincial health insurance plans and participates in financing their operations through the Federal/Provincial Fiscal Arrangements and the Established Programs Financing Act.

Decentralization to the regional and municipal levels has been encouraged, and the principle of decentralization also is being applied to health care for Canada's native people. Health care is becoming a direct responsibility of Indian bands in Canada.

The cornerstone of the Canadian health system is the national program of health insurance. It consists of provincial hospital and medical care plans and extended health care service programs supported financially by both Federal and Provincial Governments. Although provincial insurance plans may vary, each provincial health plan must meet minimum requirements to qualify for federal funds, thus ensuring a degree of uniformity in coverage and benefits for all Canadians. This system has allowed all Canadians to enjoy universal coverage in hospital services since 1961 and in medical services since 1971. Most provinces also have introduced supplementary benefits such as dental care for children, prescription drug plans for the elderly, and extended care in long-term care institutions.

Canadians are committed to making their health care system one of the best in the world while maintaining health expenditures at a relatively constant percent of Gross National Product. This commitment was demonstrated by the passage of the Canada Health Act in 1984. Although it did not change the fundamental nature of the national health insurance system, the Act consolidated earlier health insurance legislation provisions into a single law and reaffirmed Canada's commitment to five principles of health care: universality, comprehensiveness, accessibility, portability, and public administration.

Ensuring universal access to the health care system means surmounting the challenge of responding to the health needs of the many cultural groups who live in Canada: communication barriers must be bridged and often new disease patterns among immigrant groups must be addressed.

To better identify the changing health needs of Canadians, traditional health indicators must be complemented with more specialized measures. Consequently, the country's various health information systems are undergoing major changes to ensure that health information can be produced on a regular and timely basis for health managers, and regular information is supplemented with periodic large-scale surveys such as the Canada Health Survey.

During the past few years, much attention has focused on the need to achieve a balance in the health system, with emphasis on prevention and promotion as well as on treatment. Canada's health system increasingly has moved toward identifying and reducing health risks in the population through health protection, health promotion, and disease prevention strategies, and today, many initiatives based on these strategies are under way. These programs seek to change fundamental

attitudes and behaviors affecting health, and, as a result, Canadians now display far greater awareness and concern for their own health, their lifestyles, and their attitudes toward environmental hazards.

The involvement of nongovernmental organizations and professional health associations is critical to the success of these initiatives. To support such involvement, the Federal Government pursues a partnership policy which provides financial assistance to nongovernmental organizations and undertakes joint ventures in areas of mutual concern. Financial support to health research has been increased and innovative funding methods have been sought. Health research continues to provide new knowledge in disease prevention and treatment.

A strong commitment to maintaining basic health services continues to be an important part of the health care system. Safe, nutritious foods, safe and effective drugs and medical devices, clean water, and a safe environment are fundamental to a healthy Canadian population. To fulfill this objective, the Federal Government regulates the safety of foods, drugs, and medical and radiation-emitting devices; develops health guidelines and standards for environmental, occupational, and consumer product hazards; and provides services to assist in preventing and diagnosing diseases.

Although progress has been made, important challenges remain. Chronic and degenerative diseases warrant further attention, as do mental health and occupational health. Smoking is still a serious problem. The incidence of sexually transmitted diseases is increasing, and there is a concern about the complications of such infections. Drug abuse worries Canadian parents as it does parents in other parts of the Region. In Canada, a comprehensive strategy that focuses on reduction of both supply and demand of drugs has been devised.

In 1986-1987 Canada contributed $CDN117,100,000 to assist governments of the Americas. In addition, $CDN28,810,000 has been disbursed in the Region to support projects of nongovernmental organizations and humanitarian assistance. The International Development Research Center (IDRC) donated $CDN19,090,000 for research projects in the Americas.

Mexico

The country has continued to give priority to pressing health protection needs. In keeping with that policy, the Government continued to strengthen the National Health Program, which coordinates the health sector's institutional efforts to achieve the proposed objectives. Prior to adopting the Program, it was necessary to implement three strategies to improve the organization and operations of the National Health System: sectorization of health institutions, decentralization of services, and modernization of the Secretariat of Health. Subsequently, intersectoral coordination and community participation in health care were added to those strategies.

In this context, the following priority requirements for developing the infrastructure of national programs were identified: emphasize primary care and preventive medicine; foster a more effective use of inputs; regulate the services according to technical standards that ensure a uniform quality; continue to coordinate the growth of the infrastructure; and support the training of human resources needed by the country.

PAHO/WHO's technical cooperation,

aimed at developing local health systems, was structured around the following seven programs that constitute the national program: development of health services; disease control; health promotion; environmental sanitation; family planning; social welfare; and support programs. Based on this, the Organization cooperated in implementing the National Health Program for 1984-1988, emphasizing addressing priority health problems through substantive programs; strengthening administrative and technical capabilities of health service operations in those States where decentralization has already occurred; collaborating in and supporting a project to reconstruct facilities in the Metropolitan Area and another to expand the infrastructure of first and second level health care resources conducted with IDB assistance for the benefit of 6.4 million inhabitants; and participating in and supporting a program for epidemiological surveillance and disease control. This last program received extrabudgetary funding for the prevention and control of AIDS, control of diarrheal diseases, and the Expanded Program on Immunization (EPI).

The Organization also cooperated with the Government in the program "Operation Impact," designed to strengthen local health systems within the decentralization of the health services and in conjunction with the development of operating capacity (Mexico-IDB Project) and administrative improvement. To encourage this process, the Secretariat of Health developed a strategy based on addressing priority health problems. In environmental health, PAHO/WHO cooperated in the prevention and control of air, water, and soil pollution; leakage control and efficient use of water in Cuernavaca (with the Secretariat of Agriculture and Water Resources); and in the institutional development of the Tijuana-Tecate State Public Service Commission (CESPT-T).

In national resource mobilization, PAHO/WHO supported the establishment of working groups for specific areas, including organizing a Technical Coordination Unit for Reconstruction and a series of national meetings on "Structural Change: Challenges to Consolidation of the National Health System" that mobilized resources from institutions within and outside the sector.

In the area of technical cooperation among countries, the Organization supported activities related to Mexico's agreements with Belize and Cuba.

PAHO/WHO continued to emphasize the need to develop extrabudgetary funding sources to supplement assistance from regular PAHO funds; potential areas of cooperation were identified. The strategy increased funding from a number of agencies, including IDB, the World Bank, Rotary International, USAID, UNICEF, and UNDP. A case in point was the 1987 extrabudgetary allocation for the environmental sanitation program, which amounted to $US748,000, 4.8 times the amount assigned from PAHO's regular budget. A project to reduce water leakage and use water more efficiently and one for institutional strengthening of CESPT-T were expanded largely through extrabudgetary funds.

In the area of intra- and intersectoral coordination, PAHO/WHO encouraged the development of more links within the health sector to ensure that programs are implemented through effective support and reciprocal consultation among the sector's component agencies. A significant advance in this regard was the establishment of an interagency commission to train human resources in health care and one for research. In addition, the Organization fostered intersectoral coordination to ensure that the use of the health sector's resources, especially those that address general welfare and that require tighter program links, is compatible with the National Health System's operational elements.

PAHO / WHO Field Office, El Paso, Texas

The PAHO/WHO Field Office in El Paso serves as a catalyst for the Governments of the United States of America and Mexico in their efforts to jointly identify and promote actions on public health problems. Priority activities included the development and conduct of 63 courses and seminars held for public health professionals along the United States-Mexico border. The Field Office also participated in, cosponsored, and provided administrative or technical support for over 40 technical meetings or conferences, including the United States-Mexico Border Health Association (USMBHA) Annual Meeting, the Rural Health Conference held in Arizona, and the Mexico-United States Border Substance Abuse Conference held in Hermosillo, Mexico. Activities were also undertaken in establishing general or specific information systems on diabetes, maternal and child health, and border laboratories; providing technical experts for United States-Mexico border projects; and starting a border directory of health care providers.

To foster epidemiological surveillance and disease incidence reporting from the ten border States, the Field Office continued to publish its *Border Epidemiological Bulletin,* coordinated the annual Border Epidemiologists/Veterinarians Meeting, and started an environmental health project. In addition, the Field Office developed, coordinated, and reviewed the United States-Mexico Border Health Statistics Report. By incorporating the conditioning factors that determine disease incidence and prevalence, this report serves as a tool for health planning and for detecting health problems of the border population. The report also provides information on community institutions which could collaborate in solving border health problems.

The Field Office worked with Rotary International, the Rotary Clubs of El Paso and Ciudad Juárez, and veterinary public health authorities to develop and support a three-year pilot program for international rabies control.

To coordinate and develop the Border Laboratory Network project funded by the United States Department of Health and Human Services, the Field Office conducted a working meeting to review the progress of information data bases development, made on-site surveys of laboratories in Baja California and Chihuahua, and completed a second survey tool for additional review and analysis. This project is designed to provide information on the status and needs of border laboratories.

As Secretariat of USMBHA, the Field Office planned and coordinated the XLV Annual Meeting, held in San Diego from 7 to 10 June, and supported the USMBHA Binational Health Councils designed to exchange information on common health problems and to stimulate binational efforts to solve them. In addition, the Field Office oversaw the Association's Maternal and Infant High Risk Assessment and Training Improvement Project, a two-year project funded by the United States Federal Government that targets the Ciudad Juárez/El Paso area. In 1987, the project developed a needs assessment survey for prenatal, postnatal, and infant health services emphasizing identification of high-risk pregnancies. The report also incorporated the area's socioeconomic and cultural characteristics to determine health care needs and concerns of the border inhabitants.

This year, the Field Office wrote proposals for two maternal and child health projects, a binational tuberculosis project, a health education program proposal, and a maternal and child health proposal to be submitted to the Carnegie Corporation.

United States of America

In 1980, the United States of America began implementing a decade-by-decade strategy to achieve the goal of health for all by the year 2000. The U.S. Public Health Service led in the development of ten-year national goals and objectives which constitute the health promotion and disease prevention agenda for the nation. Federal, state, and local governments as well as public, private, and voluntary sectors actively participated in developing and implementing it. The agenda's goals and objectives are specific and measurable, and address health improvements through behavioral changes, environmental health protection, and clinical preventive services. Two hundred and twenty-six objectives that ranged across 15 priority areas were selected for their potential in decreasing preventable mortality and morbidity by reducing the incidence of infectious diseases, chronic diseases, and trauma.

Since the review of the status of these objectives, conducted in 1985, the U.S. Public Health Service has been revising the goals and objectives in order to develop the national health strategy for the decade beginning in 1991. The "mid-course" review documented successful trends in about half the current objectives; about one quarter are unlikely to be achieved by 1990 and another fourth lack sufficient data to determine their status. Among the successes, the mortality rates set as major goals for each age group of the population showed encouraging progress toward the 1990 targets, mostly due to decreases in premature death due to heart disease, stroke, and unintentional trauma. Infant mortality rates were down 26% (73% of the 1990 target); adolescent and youth mortality rates were down 11% (56% of the 1990 target); and adult mortality rates were down 19% (77% of the 1990 target). In addition, gains were made in reducing smoking among adults and drug abuse among adolescents.

This progress review also provided important information about the objectives themselves and the delivery of health care in the United States of America. For example, measuring results has shown not only why a given objective has or has not advanced, but also that some objectives are not measurable. Although lack of data to measure the status of many objectives is of valid concern, a determination should be made as to whether the objectives in question warrant an allocation of finite resources to create additional data collection systems or to begin new research studies to fill those information gaps.

Perhaps the most important contribution of the review has been to expose those objectives unlikely to be achieved by 1990, because they identify either poorly constructed objectives or problem areas in health care services or in education. These objectives require an analysis of their continuing importance and a scrutiny of possible inadequacies in attention, resources, skill, or policy.

In a broader sense, the review additionally has confirmed the outstanding results that can be achieved by setting national objectives that bring together people and organizations in support of certain goals. For example, thanks to the nationwide coalition to implement child passenger safety laws, improved vehicle design, and safety seats, today all 50 states have enacted laws that require the use of child restraints in automobiles. The mid-course review has shown that, given the fact that among children ages 1 through 14, motor vehicle collisions are a major cause of injury and disability and the cause of 20% of all deaths, the enhancement and enforcement of these laws will be a critical factor in reaching the goal of reducing the motor vehicle fatality rate for children to no more than 5.5 per 100,000.

In the course of the year, the U.S. Public Health Service has convened regional hearings and has cosponsored other hearings with

the Conference of Nongovernmental Organizations to help foster the development of a nationwide consensus regarding the revised health objectives for the year 2000. The framework for discussing what priorities to address in the next decade is comprised of a proposed agenda of diseases, conditions, and risk factors organized in the following categories: screening and early intervention in chronic diseases, acquired immune deficiency syndrome, other sexually transmitted diseases, other infectious diseases, maternal and child health, family planning, oral health, unintentional and intentional injury, occupational health and safety, environmental health, tobacco use, alcohol and drug abuse, nutrition, physical activity and fitness, mental health, and health maintenance for the elderly. New goals and objectives will be drafted late in 1988, to be presented in early 1990 after extensive review and refinement. The U.S. Public Health Service plans a major national conference in 1990 to mark the end of the campaign for 1990 objectives and the beginning of the objectives for the year 2000.

In addition to grants, contracts, and the services of technical experts to PAHO/WHO, the United States of America provides bilateral technical and financial assistance to many countries of this Region. The country's major channel of financial contributions is the U.S. Agency for International Development (USAID). In fiscal year 1987, USAID's child survival health programs totaled $US243.16 million, of which $US59.64 million was allocated in Latin America and the Caribbean. The USAID health policy continues to stress the goal of increased life expectancy in developing countries by focusing on infant and child mortality and morbidity as the main intermediate objectives. Other objectives are to reduce maternal mortality and morbidity, to use child survival interventions as the basis for building a more comprehensive health care system over time, to ensure that gains made in improving child survival and health are sustained, and to develop new basic, effective technologies and improved systems for delivery of child survival services. Other priorities include primary health care, water and sanitation, vector control, AIDS, health care financing, and research.

SOUTH AMERICA

Argentina

During 1987 PAHO/WHO cooperation followed guidelines set by the Secretariat of Health of the Ministry of Health and Social Action and was channeled into seven projects: modernization of the sector; strengthening of policy determination and strategic planning; integrated development of health programs and services; federalization of the sector; institutional development; economic and financial development; and health and welfare. Within the policy of technical cooperation among countries, Argentina established a program of surveillance, prevention and treatment of vector-borne diseases, especially with Bolivia and Paraguay, and a program to exchange social security information with Brazil.

Regarding modernization of the sector, an administrative analysis of the Secretariat of

Health was concluded, a reorganization plan proposed, and support given to the National Institute for Social Work.

To help strengthen policy determination and strategic planning, technical cooperation focused on coordinating the efforts of several sectors aiming at consolidation of the legislative proposal for national health insurance. A Technology Analysis and Assessment Unit and a Research Policy and Priorities Unit were developed, and an ethical code for health researchers was drawn up.

With respect to integrated development of health programs and services, the Dr. Juan Garrahan National Pediatric hospital began to operate. The hospital will be governed by its own administrative authorities, and it will function as a health care model providing progressive care and extended and complete care for the patient by the same medical teams throughout the hospital. This same model was extended to all national public hospitals. PAHO/WHO technical cooperation supported this process by mobilizing national resources and consultants from Brazil, Cuba, Uruguay, and Venezuela.

The following activities highlight efforts within the health programs. An international introductory course on maternal and child health, conducted with support from the Latin American Center for Perinatology and the School of Public Health of the University of Córdoba, was offered. Workshops on perinatal standards and assessment of perinatal care services were conducted in the provinces of Chubut and Jujuy, and workshops on risk factors were conducted in Rosario. A meeting held in Tucumán to evaluate maternal and child health services represented a milestone in the analysis of such services at the provincial level.

Provincial mental health bureaus received support through continuing education efforts in policy-making, planning, and in administration, standardization, and auditing of mental health services. A national meeting of mental health directors was held in conjunction with the Congress on Mental Health and Primary Care.

In oral health, a meeting for provincial oral health officers as well as the 75th World Dental Congress were held; an international course was conducted for dental health directors; and a water fluoridation program was begun in the province of Buenos Aires and the Federal Capital.

Among major activities conducted in the development of epidemiology were a mortality analysis carried out with national working groups integrated by officials from the national government, the Federal Capital, the provinces of Chaco, Neuquén, and Santa Fe and the two National Epidemiology Institutes, and an analysis of health conditions at provincial and local levels. A national meeting was held to identify national groups that conduct population studies based on an epidemiological approach. The program to disseminate selective information to participants of the National Epidemiology Network progressed. Regarding nutrition, the Ministry of Health and Social Action, in conjunction with the OAS Inter-American Center for Social Development (CIDES), and PAHO/WHO, completed a cost-effectiveness analysis of the food-supplement program in schools. The Organization also helped conduct a diagnosis of iodine-deficiency problems and collaborated with the National Food Program in research and training.

In human resource development, surveys on the medical labor market and on the sociology of the medical profession were carried out. In addition, several research projects dealing with labor aspects of nursing were initiated. The Association of Schools of Medicine was supported in its work with faculty coordination; a prospective analysis of medical education at the schools of medicine of Tucumán, La Plata, Buenos Aires, Rosario, and Corrientes was conducted, and a similar analysis was undertaken in the schools of nursing. The Organization also cooperated in establishing the Argentine Association of Public Health Training Centers, in drafting agreements with the Latin American Federation of Dental Associations and CIDES for developing a leadership program in health, and with CIDES in the first course on social policies with emphasis on health.

Technical support, particularly in orienting training of practical auxiliary nurses toward a work-study strategy, continued to be provided to nursing schools in Córdoba, Neuquén, and Rosario, as well as to other institutions that train nursing personnel.

To implement the federalization of the sector, which calls for establishing decentralized comprehensive health systems at the provincial level, a conceptual framework and strategies were developed. An analysis of the health sector in the provinces will be carried out and used to design a health-care model with administrative and financial components from the provincial sector. Four provinces have already been targeted for this work.

To further develop the information system, a national technical group was established to examine the possibility of consolidating systems from the Secretariat for Health, provincial health ministries or departments, medical professional associations, social work agencies, the National Institute for Social Work, and cooperating agencies in the private sector.

Several studies on vector-borne diseases were promoted, among them a study on Chagas' disease conducted with the Dr. Mario Fatala Chabén National Institute for Chagas' Disease Research in the Secretariat for Health and the UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases. In addition, a national Chagas' disease eradication program was undertaken, as well as a program of AIDS prevention and community education conducted with the Secretariat for Health, the Ministry of Education, the National University of Buenos Aires, and the Health Department of the city of Buenos Aires. Research projects on human reproduction were started in Rosario and in the Federal Capital.

The program on women, health, and development organized its third national meeting, attended by participants from Brazil, Cuba, Mexico, Nicaragua, and Peru.

In environmental health, technical cooperation designed to organize the sanitation subsector and integrate it to the sanitary works sector is part of a national sanitation plan to be conducted by the Ministry of Water Resources with UNDP and the World Bank. The Organization, with the Housing Secretariat of the Ministry of Health and Social Action, provided special support to the National Directorate for Environmental Quality and its provincial offices that deal with municipal solid-waste services.

The Secretariat for Health asked PAHO/WHO to serve as technical and financial executing agency for the World Bank development project for the health sector and for the institutional development component of the IDB project for provincial public hospital recovery.

Bolivia

In 1987, Bolivia's economy continued to stabilize, and while recovery remained slow, inflation was brought under control and steps were taken to reactivate the country's productivity. However, due to the rising unemployment rate, the economic crisis continued to affect the most vulnerable population groups. In response to this situation, the Ministry of Social Welfare and Public Health established, as part of the 1987-1989 three-year plan, policies and strategies aimed at institutional strengthening and development, among them incorporating Social Security facilities into preventive programs; the organized participation of the population in all levels of health care; training in health for human resources from both institutions and the community; conducting a drug policy that encompasses the population's access to pharmaceuticals, an increase in domestic production, and strengthening the system of public pharmacies; a food and nutrition plan; environmental

protection and improvement through organized participation; intra- and intersectoral coordination; and development of the health services based on regionalization. In addition, the Ministry emphasized programs in food supplements; nutrition education and epidemiological surveillance; basic sanitation; immunization (including EPI); maternal and child health; control of diarrheal diseases and acute respiratory infections; intestinal parasitoses; metoxenous and sexually transmitted diseases (including AIDS); and zoonoses.

During the year, PAHO/WHO cooperation was directed toward supporting implementation and follow-up of the Plan for Immediate Actions, development and execution of the 1987-1989 Triennial Plan and the project to develop a health service system that emphasizes primary care and the initialization of experimental areas that will allow verification of the health care model. PAHO/WHO also supported the organization and strengthening of the People's Health Committees and the training of community health leaders; cooperated in training programs that represent the first stage in the decentralization of services and the establishment of local health systems; collaborated in designing and adjusting the regionalization model and the experimental phase of the information subsystem; and supported the strengthening of the lowest level administrative and service units. In environmental sanitation, the Organization cooperated in project studies for major cities in Bolivia, and, in occupational health, helped to increase coordination among the subsector's institutions and to train personnel. The results of these activities are manifested in the formulation and execution of plans, in the availability of mid- and short-term administrative instruments, in the identification of additional external financing for projects, and in a significant development of the country's capability to address health problems. These advances have been achieved despite frequent changes in executive and technical personnel, human resource shortages due to low salaries, frequent adjustments to the joint programming, a small health budget, and inadequate intra- and interinstitutional coordination.

PAHO/WHO-supported programs have led to an improvement in the Country's capability to solve priority health problems; to the formulation of development program objectives reflected in the 1987-1989 three-year plan; and to the maintenance of already gained advances such as the near complete eradication of poliomyelitis and an effectively organized community participation.

In an effort to offset the shortage of domestic funding sources and to concentrate resources on priority programs, a plan to systematically program and review external cooperation was again jointly undertaken with USAID, UNICEF, WFP, UNDP, and several nongovernmental organizations. This system increased the quantity of and benefits from external resources for health. External financing agencies such as IDB, the World Bank, and GTZ (Federal Republic of Germany), remained willing to finance health projects and to consider favorable conditions for granting financing requests. In addition, within the context of cooperation among countries, activities were pursued to mobilize national resources through bilateral or subregional agreements such as the strengthening of the Hipólito Unanue Agreement.

During 1987, PAHO/WHO promoted meetings to incorporate social security institutions into primary care programs and to establish joint programming systems to avoid duplication of efforts and ensure coordination in health activities.

Brazil

The Government has established the following priorities for PAHO/WHO cooperation: health service infrastructure development with emphasis on primary health care, priority problems of high risk groups, and management of health knowledge. Main activities within these areas conducted in the course of the year are summarized below.

In health systems infrastructure, PAHO/WHO worked toward developing and implementing the Unified and Decentralized Health System, especially in planning, budget, financing, and in the institutional development of information and other administrative systems. The Organization also cooperated in designing health care models, and a program was initiated to provide technical and administrative support for 29 local systems in 7 States. The development of human resources also was emphasized, particularly in terms of the continuing education of management-level professionals in health-care and administrative services; in training primary and secondary-level staff from 14 federal units; and, at a management level, in implementing training, organizational analysis, post description, and evaluation methods. Through PAHO/WHO scholarships, 87 professionals received training, in Brazil and ouside of the country, in different aspects of health.

Regarding essential drugs and vaccine production, quality-control efforts at the Institute for Sanitary Quality Control were strengthened. PAHO/WHO supported programs to develop self-sufficiency in the production and control of biologicals and in the production of rabies vaccines for use in humans and dogs. Projects to produce DPT, tetanus toxoid, BCG, and anitoxic sera at the Butantany and Vital Brazil Institutes were also supported. The Organization also provided technical cooperation to laboratories in the network of biologicals production and control, and training to their staff.

During 1987, work in health information systems included establishing a new structure for the Brazilian Information Network, which comprises 19 centers, 17 libraries, and 150 collaborating units. The bibliographic control of national information, information analysis, and a bibliographic exchange (424 scientific journals and 2,523 monographs were recorded; 4,410 research requests and 205,000 bibliographic queries were fulfilled; and 62,328 photocopies were made available) also were undertaken. To help develop the Brazilian Network's activities, staff from 15 collaborating centers was trained in cooperation with the Project Research Financing Agency and the National Council for Scientific and Technical Development.

Activities in maternal and child health and in food and nutrition funded through the United Nations Fund for Population Activities (UNFPA) were strengthened at national and state levels. National standards in the field were published; 5,094 physicians, 1,119 nurses, and 824 assistants were trained in different aspects of maternal and child health; state groups working in maternal and child health were organized; and research activities and the establishment of a perinatal information system were supported.

In environmental health, in addition to helping conduct courses, seminars, and research, PAHO/WHO cooperated in the following projects which were jointly funded with the World Bank and implemented in collaboration with national institutions: preparing norms for improving management and rural and urban sanitation. Effects from these projects benefitted some 80 million low-income people. PAHO/WHO also worked with the State Company for Basic Sanitation Technology (CETESB) in a project to control environmental pollution in São Paulo and, in collaboration with ECO, in a study conducted in São Paulo to measure the effects of environmental pollution on health.

The collaborating centers of the Pan Ameri-

can Network of Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA) received much support; they were structured in two groups, one for the south of the country headquartered in CETESB in São Paulo, and one for the north headquartered at the State Federation of Environmental Engineering in Brasilia. The coordinators for CEPIS and ECO also received training through a seminar on information systems.

The epidemiology program aims primarily at conducting epidemiological surveillance and at disease control, especially of acute infections. During the year, efforts pertaining to AIDS were also conducted, and EPI was expanded by implementing the new five-year plan through an agreement among the Ministry of Health, Rotary Club International, UNICEF, and PAHO/WHO.

The Organization, in addition to providing technical and administrative cooperation to the control programs of the Superintendency for Public Health Campaigns (SUCAM), also began to support, through an agreement with the Ministry of Health and SUCAM, the project for control of endemic diseases in the Northeast and for control of malaria in the Amazon Region.

In zoonosis control, PAHO/WHO prepared a document on urban rabies eradication for the decade, which served as a reference point for fine tuning the nationwide control program that has been in effect since 1977. This highly successful program (in 1977, 108 human deaths from rabies were notified and only 42 in 1987) which is managed by the Special Public Health Services in Rio de Janeiro, received the Organization's support in programming and activity evaluation as well as providing international experts to consult in specific areas. Through CEPANZO materials for diagnosis and production of vaccines were made available. Using WHO indicators, hyperendemic areas for taeniasis and cysticercosis were identified. Working with officials from the State of Paraná, PAHO/WHO developed an integrated control program to eradicate hyperendemic niches. In the leptosperosis program, a National Technical Committee was constituted and diagnostic laboratories with capabilities for conducting micro- and macroaglutination serologic tests were identified. Studies also were conducted on toxoplasmosis, hydatidosis, leishmaniasis, and plague to determine their impact on public health, and an agreement was signed between the Special Public Health Services Foundation and PAHO/WHO to launch a primate program in the country.

Chile

The Chilean constitution, in acknowledging health as a human right, establishes that the State must protect the right to free and egalitarian access to health promotion, protection, and recovery, and to the individual's rehabilitation; must guarantee that health activities conducted by public or private institutions comply with the form and conditions set by the law; and that each person must be free to select private or public health care. This law, in effect since 1 January 1986, will benefit 95.3 % of the population, and 100% of the population will receive free health services.

Chile's long tradition of organization and service manifests itself in its health structures; in the professional, technical, and human caliber of its health personnel; in its already tested program orientation; and in its nearly nationwide health coverage and infrastructure.

According to adopted health policies, health promotion, health protection, and primary care activities have been given priority.

The decrease in mortality rates is a result of these policies.

Government policies regarding secondary and tertiary levels of care focus on a review of the equipment in the system's major hospitals, in greater contributions to budgets for consumer goods and services, and in a review of the physical structure and functional programming of each health facility.

In human resources, the Ministry of Health is strengthening health personnel through a plan of mixed responsibility for providing services, and through a state and a private subsystem. The Social Security Institutes have steadily grown: 20 institutes serving approximately 1,470,000 beneficiaries were in operation at year's end.

The Organization promoted the mobilization of national resources by hiring Chilean professionals to serve as consultants in various Ministry of Health activities and by helping to train personnel from various units of the Ministry in national institutions. Given the quality of human resources in Chile, it is increasingly feasible to rely on the experience and knowledge of national professionals and to conduct personnel training in domestic institutions. Areas still remain, however, where officials have stated the need for assistance from the Organization and from other countries.

Regarding mobilization of external resources, PAHO/WHO administered a $US408,748 grant, made available by Walter Reed Hospital of the United States of America, to conduct a three-day field trial of meningitis B vaccine in Iquique. Results from this trial should prove very useful not only for Chile, but also for other countries that face the same problem. PAHO/WHO also administers UNDP funds, totaling $US430,008 for 1987 to continue the project to control hospital infections.

Colombia

The Government emphasized the decentralization of the municipal health services based on a local programming plan involving active community participation. Priority areas include: recovery and adjustment of physical infrastructure of facilities that provide individual health care or are destined for diagnosis and research; establishment of a decision-making information system; human resource development through continuing education programs; intrasectoral coordination; and analysis and identification of alternative technologies for expanding efficient, effective, and equitable coverage of the health care system.

Priority health programs include maternal and child health, communicable disease control, basic sanitation in rural areas and drinking water supply, control of drug dependency, alcoholism and smoking, and control of diseases preventable by immunization and chronic diseases. According to these national priorities, PAHO/WHO provided technical cooperation in infrastructure development; programs for control of malaria and diseases preventable by immunization; maternal and child health and family planning; production, control, and procurement of biologicals; prevention and control of some zoonoses; training of human resources; developing educational materials for distribution; and institutional and financial analysis of the health sector. The Organization also supported the Ministry of Health and public and private companies in water supply, solid waste disposal and recycling, foot-and-mouth disease control and elimination of urban rabies, and in a disaster relief and emergency preparedness program.

To mobilize national resources, PAHO/WHO, at the request of the country's officials,

hired long-term national consultants to work in projects to restructure the national health system and the Ministry of Health, to develop a national continuing education program, and to conduct a study of sectoral financing alternatives.

To foster intra- and intersectoral linkage, the Organization supported coordination with other agencies of the United Nations system; this effort was undertaken to avoid duplication by integrating priority government activities. The Organization also promoted coordination among national authorities and other agencies in conducting activities of the Expanded Program on Immunization (EPI) and the Infant Survival Plan.

Acting as executing agency, PAHO/WHO mobilized external resources totaling $US1.5 million for use in basic sanitation activities, maternal and child care and family planning, control of drug abuse and alcoholism, and EPI. According to the policy of technical cooperation among countries, plans were developed to support, in 1988, programs in malaria, drugs, drug abuse control, maternal and child health, and infrastructure development, according to priorities established for the Andean Subregion. In addition, a proposal for cooperation in biologicals production and quality control between Colombia's National Health Institute and Brazil's Oswaldo Cruz Foundation was being prepared.

Ecuador

The economic crisis affecting the countries of the Americas was compounded in Ecuador in 1987 by the effects of the March earthquake: the destruction of an oil pipeline section suspended petroleum exports, the country's main source of both foreign revenue and financing for a substantial portion of the national budget. The seriousness of the crisis was manifested in rising rates of inflation and unemployment and in an increase in the informal sector of the economy.

In April 1987, a change in the Ministry of Public Health led to the redirection of national priorities toward stronger administrative efforts to support decentralization and the integrated local programming of health care activities. As a result of this policy, the Ecuadorian Institute of Sanitary Works (IEOS) undertook an institutional development program that includes regionalization and the establishment of new environmental sanitation activities. In 1987, IEOS reached the goals set for the International Drinking Water and Sanitation Decade. The Technical Council, chaired by the Minister of Public Health and constituted by representatives from the Ministry's undersecretariats and technical and administrative directorates, was strengthened to effectively serve as a deliberative and decision-making agency for health programs. Regional activities fell under the responsibility of/and, through its mediation, the General Provincial Directorates for Health. In some provinces this arrangement resulted in activities aimed at organizing health care facilities according to program areas. This effort facilitates the identification of priority health problems affecting the population and of their solutions, involving all health service levels as well as the community. Other noteworthy developments were bringing the Executing Unit for the National Drug Program under the responsibility of the Ministry of Public Health and creating a National Committee for AIDS. The Ministry of Public Health assumes increasing direct responsibility for programs which are supported by external funding.

PAHO/WHO provided technical cooperation and financing for national priority activities at the central, provincial, and local levels; facilitated the mobilization of national resources; awarded fellowships for studies

abroad and funds for the participation of national officials in international meetings; and cooperated in conducting courses and seminars and in preparing proposals for Ministry programs. The Organization also supported several health surveys. By the end of the year some had been published—*Alimentación y salud* (Food and Health), *La situación de la salud en el Ecuador* (Health Conditions in Ecuador), and *Registro de tumores* (Tumor Registry)—and others were in progress.

It is too soon to assess the impact of the priority programs on health conditions; however, the strong involvement in and commitment to decentralization and local programming by health services from national officials at the central, provincial, and local levels is worthy of note. This process will strengthen national capabilities to address priority health programs.

The National Health Council has redefined its functions to direct the health sector toward a national health service. In response to the growing trend to decentralize health care services to the municipalities, the need for technical cooperation from PAHO/WHO and other agencies is expected to grow appreciably in the near future.

Paraguay

As an outgrowth of the joint analysis of PAHO/WHO technical cooperation, Paraguay conducted an analysis of its health situation, emphasizing infrastructure development, maternal and child health, vector-borne diseases, and environmental sanitation. In addition to identifying problems, the study suggested policies, strategies, and activities in each of these fields, and pointed out areas needing the Organization's cooperation. The final analysis document serves as the foundation for planning the Organization's future cooperation in Paraguay.

The following summary highlights some of the Organization's technical cooperation activities carried out during the year.

In health infrastructure development, the Organization, through both regular funds and extrabudgetary funds from IDB, continued to work to extend the health service network to small communities and rural areas; to study installed capacity in the Asunción Metropolitan Area; to design and start the National Network of Public Health Laboratories; to develop a project for a national maintenance system for medical facilities and equipment; and to strengthen the information system and its electronic data processing. In Health Region II, a local and regional programming model was designed and implemented, and work was begun to develop an information system adapted to administrative capabilities at the regional level.

At the Government's request, the Organization supported the plan to inaugurate a highly sophisticated national hospital. This facility, to be operated by the Ministry of Public Health and Social Welfare, will function at the apex of the health service structure pyramid. Eight hundred people attended the inauguration ceremony of the hospital's auditorium, which coincided with the Pan American Teleconference on AIDS.

In human resource development, PAHO/WHO helped publish the results of the second national human resource census and collaborated in the first national course on public health. The Organization also cooperated with the School of Medical Sciences of the National University of Asunción to design a new curriculum; with the School of Nursing to conduct workshops on nursing education, administration of nursing services, and oncological nursing; and with the Institute of Social Wel-

fare to conduct a seminar on social security that led to an institutional development plan which also will be supported by the International Labor Organization. At the request of the Health Committee of the Chamber of Deputies, PAHO/WHO cooperated in a study on government employee insurance which, once implemented, will cover much of the working population.

In maternal and child health, the Organization collaborated in developing a national program; in designing a project, to be financed by the W.K. Kellogg Foundation, to set up a training model for maternal and child health; and, as executing agency for UNFPA, in drawing up a new project, to be carried out from 1988 to 1991, which contemplates a progressive nationwide expansion of maternal and child health care, family planning services, and health education services. Thanks to significant social mobilization efforts by the Government, two poliomyelitis vaccination campaigns conducted during the year reached more than 90% coverage.

In control of vector-borne diseases, the Organization promoted the signing of agreements, coordinated meetings, and helped define action lines. An exhaustive study of these diseases will serve as the basis for preparing several projects. Joint activities with neighboring countries for the control of malaria, Chagas' disease, dengue, yellow fever, rabies, and schistosomiasis were stressed.

In environmental sanitation, PAHO/WHO supported institutional development in the National Environmental Sanitation Service (SENASA), the conduct of studies to improve treatment plant operations in the National Sanitation Cooperation (CORPOSANA), and institutional development and detection of water losses in the Asunción water supply system. The Organization also promoted an intersectoral and interinstitutional meeting on housing to examine possible joint actions to solve health problems associated with inadequate housing, and provided assistance in solid waste management, environmental pollution, sanitary housing inspection, and food protection.

PANAFTOSA and CEPANZO supported the National Animal Health Service's efforts to control foot-and-mouth disease, bovine rabies, and brucellosis.

The Ministry of Public Health and Social Welfare created a national health information system that consolidates all existing information units from the health sector's medical care, teaching, and research institutions; an interagency workshop was conducted to develop regulations for the system. PAHO/WHO's Country Office Documentation Center merged with the Ministry's to form the system's core.

In the context of technical cooperation among countries, the Government signed an agreement with Brazil to control canine rabies, and the two countries also conducted joint programs to control vector-borne diseases and eradicate wild poliomyelitis virus. Brazil also cooperated in training Paraguayan technicians: the hospital administration course offered by the Getulio Vargas Foundation; the training of SENASA staff at the Paraná State Sanitation Company; the workshops on sanitation, environmental protection, urban development, and the quality of life in marginal communities conducted by the Brazilian Association of Sanitary and Environmental Engineering (ABES) and the Porto Alegre Municipal Water and Sewerage Department; and the formulation of programs for improving drinking water treatment plants carried out in conjunction with the Federal University of São Carlos (São Paulo) and CORPOSANA deserve special mention. Working with Argentina, the Organization promoted coordination with authorities from border provinces and supported the participation of Paraguayan professionals in the environmental impact evaluation course held in Posadas. PAHO/WHO also collaborated with binational organizations from Itaipú and Yacyretá in an environmental seminar and in activities to finance water supply and sanitation works in those areas as well as hydroelectric projects. It sponsored subregional meetings on vector-borne diseases, environmental sanitation, oncological nursing, and the active search for polio-

myelitis cases. A unit known as the "Asunción Group" was established to define the methodology for searching for poliomyelitis cases in the Southern Cone.

During the year, the Organization promoted the coordination of external cooperation through mechanisms that complement various support programs and plans and that bring about better resource utilization.

Peru

In 1987, the Government ratified the national health policy and stressed the need to expedite its execution. A regionalization statute issued in March, advocates decentralization to regional governments in accordance with constitutional provisions. This law will guide economic and social development policies. The Ministry of Health has targeted decentralization and the functional integration of its services and those of the Peruvian Institute of Social Security (IPSS) as priorities, concentrating on community participation as the foundation of its health policies.

A joint meeting to review PAHO/WHO technical cooperation in Peru was held in October and led to setting the following priority areas for the Organization's cooperation: strengthening of the decentralization of local health systems including a functional integration of services; development of programs in maternal and child health, communicable diseases, food and nutrition, environmental health, emergency preparedness, mental health, and some chronic diseases; strengthening of health services; development of technical and operational capabilities in health services; mobilization of technical and financial resources; and community participation. In addition, the Organization endorsed a technical cooperation agreement with IPSS which has increased PAHO/WHO's cooperation in the health sector.

Regarding the strengthening of decentralization, PAHO/WHO participated in the National Committee for Functional Integration and assisted in establishing standard systems for hospital costs, statistics, and information systems. Highlights among the Organization's support for activities in priority programs are: developing an immunization plan for 1987-1991 with the United States Agency for International Development (USAID), UNICEF, and Rotary International; organizing programs for control of diarrheal diseases and acute respiratory infections, EPI, and family planning within an integrated national program involving all public sector institutions (IPSS, the Armed Forces, the Police); control of tuberculosis, yellow fever, and malaria, as well as rabies eradication campaigns in Lima and other cities; establishing the National Commission for AIDS; and designing a national program for food and nutrition that will incorporate activities in this area.

In environmental health, PAHO/WHO worked with national resources from CEPIS and ECO to strengthen the education sectors within the environmental engineering faculties and to train instructors; in workers' health, the Organization worked with the Ministry of Labor, the Federation of Workers, the School of Public Health, and the National Institute for Workers Health. In addition, PAHO/WHO strengthened the Ministry of Health's disaster unit by training 1,000 health sector workers; supported the National Institute of Health in vaccine and drug production; worked intensively in human resource planning and in developing statistical and archival systems; and promoted community participation through educational campaigns.

Increases in immunization coverage (even though goals have not yet been reached) and in basic sanitation services are notable accom-

plishments of the Government with the Organization's assistance.

PAHO/WHO pursued the mobilization of national resources through a multisectoral and multidisciplinary approach, particularly in the project to expand, restore, and equip support hospitals; the project to strengthen agencies that supply drinking water and sewerage services in Ica, Pisco, and Trujillo; and in the project to develop and implement the program for emergency preparedness.

To mobilize external resources, PAHO/WHO maintained a close working relationship with other United Nations agencies and with bilateral and international institutions. The Organization worked with UNICEF to coordinate activities and share responsibilities in those programs where both function as executing agencies. To coordinate and make the best possible use of external resources in the areas of immunization and in maternal and child health, an Interagency Coordinating Commission for Immunizations was established. Within intersectoral coordination, the Government, with assistance from the Organization, adjusted health program activities with water supply, housing, education, and agriculture sectors.

The Government's policy regarding external cooperation aims mainly toward investment projects from international agencies for financial cooperation such as IDB and the World Bank. Bilateral cooperation efforts continued, especially with the Agency for Technical Cooperation of the Federal Republic of Germany (GTZ), the Japanese International Cooperation Agency (JICA), USAID, and the Government of Italy.

Uruguay

The process of consolidating democracy in Uruguay was marked by greater institutional stability this year. The Ministry of Public Health took two important steps for the future of the health sector: establishing the State Health Services Administration (ASSE) and adopting the "family doctor" model for urban health services. The Parliament has already approved legislation to institutionalize these measures, which are consistent with the perceived needs to decentralize direct health care services and counteract the "medicalization" and depersonalization now characterizing the delivery of these services.

In view of the country's demographic trends, during the year the Ministry gave top priority to health services for adults and the elderly. To this end, under the leadership of the General Health Directorate, a group was established to consolidate a program that includes geriatrics, mental health, rehabilitation, chronic diseases, and accident prevention.

High on the list of national priorities for which PAHO/WHO technical cooperation was made available was the definition of a national health system, an issue that reached political consensus at the intersectoral level and for which a bill was submitted to the legislature. Primary health care was promoted in both the capital and the interior and is now being implemented in various places with the active involvement of municipalities, communities, and water supply and sanitation entities.

Given that the decentralization of the health sector's administration is required to implement these changes, the newly established ASSE will assume responsibility for managing all health care services, allowing the Ministry to devote itself fully to its directing and regulatory functions.

During 1987 the Ministry, with support from the University, offered several management training courses for managers and prospective managers of health services. As a result, overall health service administration and managerial capability has improved.

The Budget and Planning Directorate of the Office of the President of the Republic conducted a survey of human medical resources which indicated that early in the next century Uruguay will have a high density of physicians, most of them concentrated in the capital. These data will be useful in defining human resource policies for the health sector.

Maternal and child health (including EPI activities and diarrheal disease control) and the control of sexually transmitted diseases remained as high priorities. Although AIDS is not yet a public health problem in Uruguay, a program was approved to control this disease, with substantial funds devoted to education and epidemiological surveillance, without neglecting the fight on other sexually transmitted diseases. Measures were taken to test for the AIDS virus in blood used for transfusions and in high-risk groups.

A managerial information and monitoring system (SIMOG), implemented during the year in most of the country's health establishments, will lead to better informed decision making and improved performance monitoring.

Immunization campaigns continued to be priority activities. Children were vaccinated against mumps, rubella, and the six EPI diseases; high-risk groups were vaccinated against hepatitis B.

To combat epizootic foot-and-mouth disease affecting the entire Southern Cone subregion and Brazil, measures were taken to halt transmission and vaccinate livestock.

All these activities received some technical cooperation from PAHO/WHO, either through short-term consultancies (since the country has many well-trained professionals who are familiar with solutions to the problems), support for local courses and seminars, or fellowships.

Within the context of technical cooperation among countries, the Organization promoted activities to integrate the countries of the Southern Cone subregion and Brazil, especially regarding Uruguay's neighboring countries.

To foster intersectoral linkage, PAHO/WHO supported joint activities among the Ministries of Labor and Social Security, Agriculture and Fisheries, and Education, the Autonomous Water and Sewerage Company, and various municipalities.

Venezuela

Several changes during 1987 had positive effects on the health sector, including passage of the Organic Law for the National Health System and initial work on its regulations; establishment of a commission to plan the implementation of said law; the creation of the Standing Commission on Primary Health Care; establishment of the health cabinet to define intersectoral policies and strategies; completion of the process of building and remodeling hospitals and outpatient care facilities financed under the three-year plan; and establishment of the Infrastructure and Equipment Foundation for remodeling, expanding, and maintaining existing health facilities.

According to guidelines in the VII National Plan for Social and Economic Development (1985–1989), the Ministry of Health and Social Welfare continued to give priority to establishing the National Health System, intersectoral linkage, primary care, integrating programs for high-risk groups, maintaining infrastructure and equipment, scientific and technological development, essential drugs, information systems, environmental sanitation, veterinary public health, epidemiology, human resources, oral health, mental health, nutrition, and maternal and child health.

Salient PAHO/WHO activities involved: collaborating in legal and organizational as-

VI. Program Support

Administrative Support

Conference and General Services

The Conference and General Services Department of the Organization provides building and office services as well as conference, interpretation, and translation services at Headquarters. The Office is also the focal point for managing the operations of the Organization's Headquarters building and the PAHO Building Fund. In May, the Organization relocated some units to the new building at 2121 Virginia Avenue, N.W. This move was the culmination of a long period of planning and negotiation to replace the old Governor Shepherd Building.

PAHO/WHO helped organize or service 354 meetings held at Headquarters and throughout the Region. Special effort was focused on the organization and direction of the Secretariat and support services, including preparing and processing documents for the XXXII Meeting of the Directing Council, the 99th and 100th Meetings of the Executive Committee, the 8th and 9th Meetings of the Subcommittee on Planning and Programming of the Executive Committee, and the meeting of the Special Subcommittee on Women, Health, and Development. Complete organization, staffing, and documentation services were also provided for the V Inter-American Meeting, at Ministerial Level, on Animal Health.

In response to the Organization's needs, the office provided 261 interpreter days in the four official languages, including furnishing interpretation services into Portuguese for the WHO Regional Office for Africa during the 37th Session of the Regional Committee, held in Bamako, Republic of Mali. Using in-house staff, freelance translators, and ENGSPAN and SPANAM, the machine translation systems developed by PAHO, 4,193,638 words were translated during 1987: 55.5% into Spanish (including translation of WHO's Technical Report Series); 38.9% into English; 4.5% into Portuguese; and 1.1% into French.

The results of an 11-month controlled study to assess the cost-effectiveness of machine translation for the two working language combinations of the Organization are expected to show high rates of productivity and consistently quick turnaround.

Under an agreement funded by USAID and the Consultative Group for International Agricultural Research, ENGSPAN was licensed to the International Center for Tropical Agriculture (CIAT), in Cali, Colombia, and the International Rice Research Institute (IRRI) in the Philippines. Personnel from these institutions were trained in dictionary updating, postediting, and general management of the systems.

Personnel

By year's end, the Organization's staff totaled 1,092, with consultants and temporary advisers contracted through Headquarters totaling 2,631. Women in professional and higher categories constituted 25% of the work force.

The 99th Meeting of the Executive Committee approved amendments to the Staff Regulations to implement Resolution XIX of the XXII Pan American Sanitary Conference concerning hiring national staff members under local conditions of employment. Incorporating these human resources into the PAHO/WHO sys-

pects of the implementation of the Organic Law for the National Health System; supporting the Standing Commission on Primary Health Care in conducting two workshops, a national one at the central level to establish standards and propose health policies and one to examine and discuss primary care strategy in each of four States; and strengthening the National Commission for Development of the Teaching and Practice of Epidemiology. Maternal and child health program development emphasized the risk approach and perinatal care by establishing a system of public hospitals and health centers in the University Hospital, which functions as a national reference center, and by strengthening the program at subregional and local levels. Additional technical cooperation included: collaboration in organizing the national oral health program; coordination of EPI efforts, with special emphasis on poliomyelitis control by the Ministry of Health, Rotary International, and IDB; support for the National Institute of Hygiene in producing rabies vaccine and other biologicals; acquisition of publications and other essential items for programs of the Venezuelan Scientific Research Institute and the WHO Collaborating Center in Clinical Immunology; strengthening the urban rabies control program and developing a food protection information system; cooperation with the Ministry of Agriculture and Livestock in setting up a plant to produce foot-and-mouth disease vaccine; support to the National Institute of Nutrition in establishing a food and nutrition surveillance system; development of the School of Public Health, using strategic planning and prospective analysis; establishing a Master's program in the epidemiology of metoxenous diseases at the School of Malariology; epidemiological studies on leprosy and leishmaniasis at the Pan American Center for Research and Training in Leprosy and Tropical Diseases; and support for the National Commission against Drug Abuse created by the Presidency of the Republic. With PAHO/WHO cooperation, the second stage of the human health resources information system of the General Sectoral Human Resource Directorate was completed, as was the prospective analysis of the country's eight schools of medicine.

To carry out these activities, PAHO/WHO provided permanent country consultants, regional and intercountry advisers, short-term consultants, fellowships, contractual services, grants, courses and seminars, and equipment and supplies. As part of the policy on mobilization of resources, national staff hired by PAHO/WHO contributed amply to these activities.

In external resource mobilization, the Government received financing from IDB to study and control tropical diseases in the Federal Amazon Territory; for construction of a laboratory to produce foot-and-mouth disease vaccine, a project carried out by the Ministry of Agriculture and Livestock and the National Livestock Investment Fund; and for a project of the National Institute of Sanitary Works (INOS) to improve the quality of water in the central portion of the country. In addition, with funds from UNDP and the United Nations Environmental Program (UNEP), an INOS project involving sanitation and environmental improvement is under way in the Tuy River basin.

The Organization continued to promote technical cooperation among countries as an effective way to mobilize technical resources and to participate in the project on intersectoral strategies conducted by the Ministry of Health, the Central Office of Coordination and Planning of the Presidency of the Republic, and the Latin American and Caribbean Institute for Economic and Social Planning.

tem in various technical and administrative areas has led to creating administrative systems that include new categories of personnel under the jurisdiction of the Personnel Office.

A review was undertaken of contractual service agreements, to ensure proper application of these contractual mechanisms. The review and the resulting instructional manual also consider the need to strengthen administrative controls in the use of these agreements.

A study on the Organization's appraisal report system was completed and, after an exhaustive review, its new format was implemented in September.

Despite budgetary constraints, the Organization continued to give high priority to training staff at all levels, with particular emphasis on technical updating.

Procurement

The Procurement Office purchased supplies, equipment, and services in support of Headquarters units, PAHO/WHO projects, and Member Governments under the Reimbursable Procurement Program, the Expanded Program on Immunization (EPI), and the Revolving Fund for Essential Drugs for Central America and Panama (FORMED). Total procurement by the Organization amounted to $US26,460,500 in 1987. Acquisitions for Member Governments consisted of $US5,573,000 for EPI (vaccines and syringes), $US526,000 for FORMED (pharmaceuticals), and $US3,058,000 for other programs. Purchases of goods and services for PAHO/WHO-funded projects totaled $US17,303,500. In addition, the Procurement Office provided source and price information to Member Governments on a wide range of commodities.

Budget and Finance

For the 1986-1987 biennium, the PAHO Governing Bodies appropriated $US112,484,000 for the PAHO Regular Effective Working Budget, which represents an 8.2% increase from the $US103 959 000 appropriated for the previous biennium. Since this increase was lower than the 9.1% in mandatory cost increases, the Organization absorbed the difference (0.9%) in program decreases. In addition, given that collected quota assessments amounted to considerably less than the figure approved by the Governing Bodies, the Director restricted expenditures to expected levels of income. Following these necessary fiscal restraints, actual expenditures and obligations increased only by $US624,970, or 0.6% between 1984-1985 and 1986-1987.

Income totaled $US103,096,548: $US82,805,095 (76.9% of the total) represented collected quotas for Member Countries' 1986-1987 assessments; $US15,343,597 constituted collected prior years' quotas; and $US4,947,856 represented miscellaneous income (as compared to $US6,906,138 for the previous biennium).

Expenditures from PAHO Trust Funds increased from $US22,334,415 in 1984-1985 to $US32,061,927 in 1986-1987. Income earned through these extrabudgetary activities totaled $US2,707,231 during the period, helping defray the Organization's indirect administrative costs. Specially funded programs also showed expenditure increases during the biennium. Expenditures under the Expanded Program on Immunization (EPI) totaled $US10,298,523 for the two-year period, and PAHO disbursed $US8,693,183 for supplies and equipment purchased on behalf of and paid for by participating countries and public agencies of the Americas.

Expenditures and obligations on WHO Regular funds amounted to $US54,124,337 during 1986-1987, although the initial allocation to this Region was $US57,856,000 including mandatory cost increases of 9.9%. Due to WHO's financial situation, the Director-General made global implementation reductions, decreasing the WHO Regular funds in this Region by 6.4%.

Administrative Development

The Organization continued to support administrative development in its offices in the countries and the decentralization of certain administrative responsibilities from Headquarters to the field. To facilitate these activities, computer-based systems for financial management have been upgraded and links between systems in the field and at Headquarters developed. This includes designing a standard integrated program for financial management in the field, for which main modules were programmed and tested; it is expected that the system will be operational in several field offices some time next year. To facilitate development of new administrative systems and procedures, the Organization carried out three regional seminars and several workshops during the year.

Information Coordination

The Organization maintained its large and complex computer center, as well as making extensive word processing available to all its units. Long lead time projects and system improvements were instituted or consolidated this year.

In an effort to adapt the Headquarters' bibliographic data to those in Member Countries, PAHO's bibliographic system is being incorporated into the ISIS text-based data base. This program was developed and improved by UNESCO and has been used by some WHO Collaborating Centers for several years. The Organization has supported training sessions using instructors from the Latin American Center on Health Sciences Information (BIREME) and other Centers to bring ISIS use to Headquarters within another year.

A demonstration project merging the ISIS data base with new compact disk technology (CD-ROM) has been very promising. All of BIREME's bibliographic data bases have been formatted using this technology and have been distributed widely both within the Organization and to other national institutions. To encourage the use of CD-ROM, which has the potential for distributing large amounts of information quickly and inexpensively, PAHO/WHO has distributed more than 100 CD-ROM readers to cooperating institutions in the Member Countries. Two editions of the bibliographic data base will be produced and distributed in 1988, and other commercially sold CD-ROMs such as MEDLINE also will be made available.

During 1987 a project was initiated to define and program a system for producing and assembling a PAHO/WHO-wide Annual Operating Program Budget Plan (APB) and a four-month work plan (PTC). These microcomputer-based systems were first used to prepare each unit's 1988 APB and first four-month work plan; the next goal in the project is to incorporate these individual systems into an Organization-wide program on the mainframe computer.

The demand for new centralized office automation equipment grew during the year; consequently, a DEC minicomputer, the MicroVAX III, will be installed. Several uses will be explored during this experimental addition of the VAX. For example, a VAX version of ISIS would allow the PAHO bibliographic system to be moved out of the mainframe; other small, unlinked systems and programs also could be moved, both reducing overload on the mainframe and satisfying some unmet requests for small programming systems.

The on-line Financial Management System (FMS), other terminal dependent systems, and the installation of new computer equipment in the user's area have put additional demands upon the computer itself. New users of office automation will be encouraged to move onto the VAX instead of the WANG systems. A long-awaited remodeling of the computer system also was undertaken.

The systems' development area completed the first biennium-end processing for the Expenditure Accounting portion of the Financial Management System, the implementation of the General Ledger portion of the FMS, and the implementation of the standardized PAHO Reference Tables.

Information and Public Affairs

The Office of Information and Public Affairs stepped up its efforts to disseminate information about the Organization and its activities, emphasizing reaching wider audiences through television and other electronic media.

One of the major activities for 1987 was the organization of the First Pan American Teleconference on AIDS, held in Quito, Ecuador, on 14 and 15 September and beamed by satellite to about 45 000 participants in 30 countries throughout the Americas. Broadcast in English, Spanish, Portuguese, and French to some 650 sites in the Region, the teleconference was part of an effort to increase the awareness of health workers, decision makers, the media, and the general public about the world-wide AIDS epidemic. Over 100 journalists flocked to Quito and hundreds of others gathered at the receiving sites, where they participated in two press teleconferences held during the meeting. The success of the AIDS teleconference has opened new horizons for the Organization by showing that telecommunications can be used to reach wide audiences with important health and scientific information, and that it can achieve, in an economic and efficient manner, much greater impact than normal dissemination channels. The teleconference also revealed new avenues of cooperation with Member Countries, the private sector, and other organizations. For example, INTELSAT carried the satellite signal at no charge to 30 countries under the auspices of its Project Share, and the Global Development Network of the Miami Children's Hospital handled other technical aspects of the transmission. As an outgrowth of the teleconference, the Organization also worked with the Miami Children's Hospital to produce eight educational videos based on teleconference topics which were distributed to the Ministries of Health of all PAHO Member Countries. Work is already under way for the second Pan American teleconference on AIDS and the first Pan American teleconference on drug abuse.

The Organization shot video footage showing health conditions in the Americas and made it available to many television stations and networks in the United States of America and in other countries. In addition, two special productions on PAHO/WHO's work to improve health conditions in the Region were distributed to networks for airing throughout the Americas. Video productions also were developed on a number of important subjects, including the "Earthquake in El Salvador," "Myths and Realities of Natural Disasters," "Immunization, Health Conditions in the Americas," the "Essential Drug Program in Central America," "Water and Sanitation," and an update on the "Plan for Priority Health Needs in Central America and Panama."

The Organization produced 24 photo exhibits which were displayed in several countries, and numerous photos were provided to a variety of publications. It also developed a five-part audiovisual program on health education, and reviewed, updated, and adapted as slide series a number of filmstrips.

The Organization continued to disseminate information about its activities to newspapers, television and radio stations, and specialized magazines through press releases, background papers, press conferences, press kits, and through electronic press distribution systems. More PAHO/WHO personnel were also made available for press interviews, television shows, and speeches. As the demand for video productions, photo exhibits, graphic arts production, and slide presentations continued to grow, the video and the visual aids units purchased additional equipment and expanded their production capabilities.

The first Caribbean Health Communication Roundtable, organized by PAHO/WHO, was a landmark in public health communication. It brought together the health sector and the media to explore paths of collaboration, and to involve the media in communication for primary health care, particularly in support of the Caribbean Cooperation in Health initiative.

To increase awareness of and support for PAHO/WHO programs, liaison with nongovernmental organizations was intensified and

collaboration with like-minded organizations improved. Articles reflecting the diversity of conditions in the Americas were published in a special issue of *World Health* magazine edited by PAHO, and the 1987 World Health Day kit—with articles targeted for use by the media, educators, and health workers—emphasized a Regional focus on immunization.

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