TEN-YEAR HEALTH PLAN FOR THE AMERICAS

Final Report of the III Special Meeting of Ministers of Health of the Americas

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

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PLANNING A NEW DECADE

PLANNING A NEW DECADE

INTRODUCTION

During the last decade the Governments of the Americas decided to plan economic and social development as an integrated process involving a sequence of actions directed to achieving specific objectives in the solution of priority problems, as set forth in the Charter of Punta del Este—the juridical basis for the entire Hemispheric undertaking (*1*). This has in turn been a part of the First United Nations Development Decade, as decided by the General Assembly and coinciding in its underlying concept with the decisions of the countries of the Western Hemisphere (*2*).

The Ten-Year Public Health Program of the Charter of Punta del Este (*3*) served as a basic guide in the formulation of national health programs and projects during the period 1962-1971. It was examined successively by the first two Special Meetings of Ministers of Health of the Americas, held in Washington, D.C., in April 1963, and in Buenos Aires, Argentina, in October 1968. The Final Reports of these Meetings (*4, 5*) contain recommendations concerning the problems discussed, which were incorporated into the policies of the Pan American Health Organization and the World Health Organization, through resolutions of the PAHO Directing Council, Regional Committee of WHO for the Americas (*6, 7*).

Three evaluations of the Program were made during the decade. Under the title *Facts on Health Progress* PAHO has published (*8*) comparisons between the proposed goals and the progress achieved, based on information supplied by the Governments and supported by explanatory material in each case.

As stated elsewhere, "the data reflect a continental effort based on the work of each country. Seen in its totality, the attainment has been substantial. Analyzed in terms of lower mortality and less disease, it is equally impressive. Even beyond the progress reflected in vital statistics, there are outstanding modifications in methods and ideas, better quality of human resources, and greater productivity of health services. These accomplishments describe a valuable experience which signifies that for similar problems in comparable ecological conditions it will be most practicable to establish and reach specific objectives. It appears logical to capitalize on the lessons of the past decade and to program the present decade" (*9*).

This was precisely what was decided upon by the XX Meeting of the Directing Council of PAHO, XXIII Meeting of the Regional Committee of WHO for the Americas (1971), when it resolved to accept the kind invitation of the Chilean Government and to hold the III Special Meeting of Ministers of Health of the Americas in Santiago (*10*).

To provide a political frame of reference, it was decided to examine the social implications of health in the Americas in connection with the Second United Nations Development Decade (*11*), which began on 1 January 1971. As part of this ambitious undertaking, the World Health Organization set priorities and recommended goals for a number of program areas. Many countries of the Americas have surpassed these goals, and all of them have made significant progress in dealing with each of the problems set forth (*12*). This justifies

the decision of the Governing Bodies of the Pan American Health Organization to establish objectives for the 1971-1980 decade in keeping with the situation in each country and throughout the Hemisphere, with the possibility of achieving them, and with economic and development trends. It is in these terms that the purposes of this III Special Meeting of Ministers of Health of the Americas have been defined.

THE UNIVERSAL CONCEPT OF HEALTH

It is today accepted that health is an end for each human being and a means for the society to which he belongs.

It is an end, an object of continuing individual concern, because it enables each person to realize his potential. It has been rightly said that we are what our genetic inheritance makes us and our environment allows us to be. In this context, health is a manifestation of the innate and acquired adaptive capacity of each person. It is a subtle and uninterrupted process, halted only by the onset of diseases of varying etiology that reflect the failure to adapt to the inner and outer environment.

It is a means, because it constitutes a component of development, i.e., of a combination of efforts to achieve social well-being. This is far more than the sum of such factors as economic growth, institutional reforms, and structural change, among others. While all these are very important, they fail to take account of what is for us the essential element: the spiritual significance of health, regarded by some as the *sine qua non* of individual happiness.

It is for these reasons that health is today proclaimed to be a universal right, and not a privilege to be enjoyed by the few. We recognize that this is still an aspiration, a desideratum which no society has yet attained in the sense of continuous application of the best concepts and methods of science and technology to the prevention and cure of diseases affecting man. But this does not preclude it from being our fundamental aim and the responsibility of the Governments we represent. For health is not an attribute of man in isolation; on the contrary, the community is affected, wholly or in part, by the health status of its members. These contribute their physical and mental energy to the common good. Any reduction of this energy is directly related to the economic and social dynamics of the State. Consequently, the people have a right to health care, and it is the responsibility of the Government to ensure that the right is enjoyed equally by all. For all these reasons health is a universal right which distinguishes a civilized from an uncivilized society.

The last decade has seen an end to the debate on the significance of health to the economy. As has been said in the course of our constructive discussions, health is an intersectoral product that depends on over-all development. Economic decisions must not lose sight of the fact that all economic effort leads to man and his well-being; that man is not merely a means toward economic goals but is their purpose, their end, their significance, and their *raison d'etre*. Hence it is agreed that both are components of development and that, far from being mutually exclusive, they supplement one another. There can be no productivity or production in a population which is frequently ill, or health in a static economy. For this reason, in spite of all difficulties and obstacles, it is considered desirable to plan economic and social development in a harmonious way, i.e., on the basis of objectives for increasing the levels of in-

come and well-being at one and the same time. While this cannot always be done for a country as a whole, we know how to do it for specific problems. As was stated at the II Special Meeting of Ministers of the Americas, "it therefore follows that national and regional health programs should be incorporated into general development plans, as early as the preinvestment phase. This is a reasonable proposition, and its implementation, although complex, is feasible, and, what is more, unavoidable" (*13*).

The over-all process of economic and social development must have like characteristics. It must take place rapidly, i.e., growth of the gross domestic product (GDP) must be at a rate higher than 6 per cent a year. It must also be self-sufficient so as to be able to achieve the targets established as part of a long-term policy of dynamic balance. It must be at the disposal of man as an instrument of social progress, in the sense of a fair distribution of income and the creation of an institutional framework eliminating privilege and providing opportunities for all, as reflected in easy access to sources of education, health, and employment. A country's economic development is the exclusive problem of its population and cannot be dependent on the generosity of third countries.

The following definition of health problems reached in the First Meeting of Ministers of Health continues to be valid: ". . . we conceive of them as the aggregate of factors that condition the diseases and their distribution in each society. These are factors of a biological, economic, historical, and cultural nature. Available data show that Latin America is beset by infectious diseases, undernourishment, poor sanitation, unhealthful housing and working conditions, illiteracy, lack of proper clothing, and a low per-capita real income. These factors together produce a high general mortality, as well as a high mortality in children, especially those under five years of age . . .; and accidents of pregnancy and motherhood which limit life expectancy at birth; they are also responsible for the poor scholastic performance of many schoolchildren, for low productivity, not to mention a pessimistic outlook on life. The distribution of these health problems among the countries varies, as it does among parts of the same country, and between the cities and rural areas" (*14*).

To this must be added what one speaker described as one of the challenges to "sophisticated society" of today, which should also bear in mind the adverse effect of pollutants, drug abuse at all ages, the problems derived from the smoking habit, the medical aspects of accidents, especially in the younger age groups, and mortality from degenerative diseases—cardiovascular and cancer—among old people.

A NEW OPERATIONAL NOMENCLATURE

This concept of health problems, their origin and dynamics—a definition which could properly be termed structural—continues to be valid today, with all its implications. An operational nomenclature, in a certain sense a new language, which facilitates planning, including priorities, budgetary allocations, and the execution of specific actions, has been created in recent years. This nomenclature is reflected in the General Program of Work of PAHO/WHO for 1973-1977, approved by the XVIII Pan American Sanitary Conference (*15*).

This attempt at systematization classifies the problems into two major groups: those directly related to health conditions and those whose solution depends on the quality, quantity, and organization of resources and of

methods and procedures for the improvement of health conditions. The problems in the former group are classified under the heading of *services to individual health* and include maternal and child care, nutrition, control of communicable and chronic diseases, and all matters related to the environment. Those in the latter group are classified under *development of the infrastructure* and comprise national health systems, including professional, technical, and auxiliary manpower; administration, planning, evaluation, and information; legislation and regulation; basic and operations research, and financing. In this last aspect, full recognition has been given to dependence on new structures, while making them responsible for producing to the limit of their potential capacity.

The factors affecting health, to which we have referred, are interrelated in a number of ways that vary with the degree of development in each society. This accounts for the diverse nature, magnitude, and frequency of specific health problems. From a qualitative standpoint the situation remains much the same as in the past decade, but quantitatively there is evidence of significant changes reflecting progress in the Region. Programs are today being drawn to a scale consistent with useful levels, by which is meant a volume of preventive and curative action sufficient to bring about a downward trend in morbidity and mortality. This is, of course, particularly evident in the developing countries. It does not occur to as great an extent in technologically advanced countries which have a life expectancy at birth of 70 years or so and where the prevalent diseases are not always easily preventable, where treatment is costly, and where solutions depend on a modification of deeply rooted habits and customs, that is, individual behavior. We know how difficult it is to induce such changes even in those cases in which the personal benefits are clearly evident.

In the last decade changes became the accepted means for the satisfaction of social demands. Wherever rigid structures, faulty administration, discontinuous decisions, or insufficient financing interfered with the achievement of a given objective, stress was laid on the urgent need to bring about a profound modification of the state of affairs, reflected in more disease. The period was rich in attempts of this kind, although they were not always made with sufficient depth to alter the dynamics of a given problem. This does not mean that the lessons learned cannot be put to use in this new decade to make greater progress in the reduction of specific morbidity and mortality rates in the Hemisphere.

THE RENAISSANCE OF ECOLOGY

The last five years have seen an extraordinarily vigorous rebirth of ecology—the old science created by Haeckel 100 years ago. By definition, ecology is the study of the continuous relationships between a living being and the environment of which it forms part. Applied to man, it coincides with our ideas of health. We speak today of an ecological concept of health which attempts to study human beings in their entirety, relating them harmoniously to their inner conditions and external setting.

What has occurred in the industrial societies should serve as a warning to the developing countries. In effect, the exploitation of natural resources, industrialization, and unplanned urbanization have led to air, water, and soil pollution which has affected the favorable equilibrium between the species—destroying some we wish to preserve—and has

adversely affected food production and consumption and posed a hazard to health and well-being. To these physical problems should be added the psychological and social problems associated with excessive and unnecessary noise, those of solitude or violence, overcrowding and promiscuity, and everything else that interferes with a healthy society. The problem is made even worse by the deterioration of the natural setting. These problems are related to the growth of population, the increasing demand for goods and services of every kind and from every source, and the accumulation of waste.

Now, as never before in the past, the decisions of Governments, institutions, and individuals have consequences reaching far beyond the immediate effects. It is incumbent upon us to think and act ecologically and to modify our value judgments and behavior if we wish to avoid or limit damage to the human environment and to the health of communities.

The fact is that the quality of life is determined by this continuous interchange and interaction of human beings with their environment in a process which may properly be termed social metabolism, and which involves the interplay of every conceivable variable induced or produced by man and nature. This widely diverse context—a myriad of factors in constant change—explains why there are conflicting opinions in both national and international spheres regarding problems, priorities, techniques, and investments. It is essential that countries and regions have policies that define what they propose to do, state the facts underlying the purpose, and prescribe ways of achieving them.

With regard to the environment, the decision of the XVIII Pan American Sanitary Conference and the XX Meeting of the Directing Council (*16*) is still very much to the point. Although considerable progress was made in the provision of water supply and sewerage services during the past decade—thanks to the work of the Governments and the efforts of the people—there are still many, especially in rural areas, who lack these essential services and who are equally entitled to have them. Our priority task is undoubtedly to devote special attention to those most in need, those who usually live in villages and in the outskirts of major cities. With this in view we have established goals which we hope to achieve through the application of modern techniques, those which make it possible to speed up installations through improved use of domestic resources, greater facilities for obtaining foreign capital and, what is most essential, active community participation.

We must also concern ourselves with the other components of the environment to an extent commensurate with their harmful influence on health. It will be necessary to identify them through epidemiologic research and to reduce their effects through the use of whatever methods are available and financially possible.

This objective includes the university training of ecologists and other specialists in environmental sciences; investigation and analysis of each economic and social development undertaking in terms of its effect on the human environment; enactment of laws and issuance of regulations to render the established policies and rules viable; and the establishment or technical and administrative improvement of government institutions responsible for all these matters.

The fundamental role of the Ministries of Health is evident. Theirs is the responsibility for keeping development from being planned and executed in a dehumanizing manner. This can readily be done if they are given the necessary authority, as is already the case in some countries. In any event our Ministries must be involved in governmental decisions affecting the process of industrial and agricultural production—as well as regional development—for the purpose of avoiding

disease without interfering with economic development. Examples of such participation are to be found in economic infrastructure projects. Projects for the development of river basins—whether covering states or provinces of a single country or two or more countries—are a specific case in point. Projects for the construction of roads, irrigation systems, or power plants can likewise create environmental problems, either by destroying the balance between species, or by stimulating the reproduction of vectors, polluting the air, water, and soil, or affecting health through any of these mechanisms.

The use—or abuse—of pesticides in agriculture merits special mention. While admittedly useful in the production of certain plants, they have been shown to destroy species of birds and fish, to disturb the production cycle of food crops and, even worse, to poison human beings. Some countries have decided to prohibit their use; these are in the minority. The reverse is true in countries where vector-transmitted diseases are still prevalent. Malaria is the most conspicuous example. In those areas where *Anopheles* mosquitoes are susceptible to a given insecticide, its exclusive use in the malaria eradication program is essential to prevent the development of resistant species. The same criterion applies to the fight against *Aedes aegypti*, the urban vector of yellow fever. This proposition has been accepted by the World Health Organization.

All this shows the urgent need for the use of these products to be planned jointly by Ministries of Agriculture and Health. As a general policy we have attempted to foster the establishment of Permanent Inter-Ministerial Committees for that purpose. To facilitate their work it will be necessary to draw up appropriate legislation and regulations, together with standards and procedures for each group of countries, bearing in mind the requirements for agricultural development, control of disease, and promotion of health (*17*, *18*).

We should like to repeat what was stated in the Final Report of the II Special Meeting of Ministers of Health of the Americas:

> In the years ahead the Governments will have to cope with environmental problems of greater magnitude and complexity. Advancing technology will leave in its wake a more sophisticated array of human stresses. Environmental contaminants will increase and will broaden from microbiological pollutants to those having their origin in chemical substances. Long-term exposure to toxic substances will be more significant and more difficult to diagnose, with wide separation of cause and effect. The growth of cities will aggravate problems of traffic congestion, accidents, and noise hazards. Population densities and poor housing will increase the hazards of communicable diseases and problems of mental health. In industrial complexes, occupational health will require more focused attention and remedial measures.
>
> In the future, health agencies must expand their activities to include the health-related considerations of slums, poverty, and filth; of ignorance, delinquency, and crime; and of the effects these have on the total health of people (*19*).

Intensified social demands for a healthy environment may be predicted. They are already apparent in the major urban centers of the Hemisphere as one of those irreversible trends that will be spurred continuously by effective action of the Governments and the sharing of responsibility between ministries, with the Ministries of Health taking the lead in this respect. This line of thinking points directly to a profound modification of customs and attitudes in daily life, for in the last analysis, the deterioration of the human environment increases in direct proportion to the growth of the population, its power to purchase and consume, and the volume of residues and wastes produced by man. The community has the right to use the resources of nature for its growth and development, but no one has the right to use and destroy this heritage, since the right to life and health

generates the responsibility to ensure that water is pure, the air clean, and the land fertile, and to avoid the ecological deterioration which development actually brings about.

The harmony that is desirable between man and his environment does not always exist. At times unfortunate events take place which can be catastrophic. In a variety of ways, the countries of the Americas have had to face such events, and the available epidemiology with which to do so should have been given greater attention. Their violent or distressing course is dictated by a large number of causes, all of them related to factors characteristic of the environment or the earth. The effects of tidal waves, earthquakes, and hurricanes are well known, as are the geographic zones where they tend to occur.

It may also be well to recall at this point other "emergencies," less violent but with every characteristic of a true tragedy, such as periods of drought and torrential rains followed by floods, which affect the lives of men living in society.

These facts are mentioned as one further aspect of the undeniable influence of ecological factors on health and one of the problems which must not be underestimated.

MATERNAL AND CHILD HEALTH AND FAMILY WELFARE. POPULATION DYNAMICS

Women of child-bearing age and children under 15, the groups exposed to maternal and child health risks in Latin America and the Caribbean, comprise 63 per cent of the population. The accelerated demographic growth in many countries will increase, particularly among the above-mentioned groups, the demand for social services, including health services.

In the last decade there was some limited progress in maternal and child health care. However, the rate for maternal mortality, probably greatly underestimated, was approximately five to seven times greater in Latin America and the Caribbean (rates of 13.5 and 18.8 per 10,000, respectively, in Central and South America) than in North America (2.5 per 10,000).

Maternal mortality is to a large extent avoidable and occurs mainly as a result of toxemia in pregnancy, hemorrhagic accidents, infection, and especially, clandestine abortions.

The proportion of deaths of children aged under five to the total number of deaths in 17 countries of the Region is more than 20 per cent, whereas in the United States of America and Canada, the proportions are of the order of 4.6 and 5.5 per cent. Infant mortality rates and the mortality rates of children between one and four years of age—data that are subject to a substantial degree of underregistration—vary between 34 and 101 per 1,000 and 1.4 to 24.7 per 1,000, respectively.

The notified causes of child mortality can for the most part be reduced. The most important causes are gastroenteritis and communicable and respiratory illnesses. It is not easy to assess the role of certain conditions that are included under the headings of "perinatal causes" and "malnutrition" in infant mortality. Although inadequately documented, malnutrition is undoubtedly an important basic or related cause of infant mortality.

Economic and social factors, in other words the limited national income and its unequal distribution among families, exert an influence on the high risks to which the family and the mother and child are exposed because of their unfavorable effect on nutrition, the level of obstetric and pediatric services, as well as on education.

Moreover, it is immediately apparent that mother and child care is limited, sporadic,

and commonly of restricted efficacy. The care of pregnant women extends to less than 30 per cent; institutionalized care during delivery in about half of the countries covers fewer than 50 per cent; assistance during the puerperium is given to less than 5 per cent. Moreover, care of children below five years of age is often belated, limited, and inadequate.

The facts described above are explained to a great extent by the weakness in the administrative infrastructure of maternal and child care services; the limited or even complete lack of funding for such services; the limited availability of professional and specialized assistant personnel; their uneven distribution; the difficulties in communication, transportation, and equipment; and, especially, the lack of effective community participation in related programs.

There has been a consensus that there must be a reduction of the risks of illness and death to which mothers and children are currently exposed, and an extension of the coverage of maternal and child and family welfare services, care being taken to concentrate activities in a suitable manner. Special account must be taken of the child in its first year of life, and of mother and child at childbirth.

Within the framework of this program, every family should have the opportunity of obtaining information and adequate services for problems relating to fertility and sterility, provided it does not conflict with the policy of each country.

To attain these goals, an intersectoral policy for family, maternal, and infant protection should be formulated, including measures to guarantee their civil and legal rights; regulations to ensure their economic and employment rights; the promotion of recreational activities; education and vocational guidance; and the execution of programmed activities in maternal and child health care.

This health program must be universal in coverage, efficiently operated and readily accessible geographically, institutionally, and financially.

FOOD AND NUTRITION

There is a consensus among the Governments of Latin America and the Caribbean that the Region possesses lands, minerals and sources of energy which are waiting for not only the necessary financial investment but also institutional organization and application of technology to transform their potential into goods and services in the field of food and nutrition. Given these potential resources, the existence of undernutrition and malnutrition in the Region represents a serious contradiction that must be overcome for humanitarian, social and economic reasons (*20*).

Available information supports the assertion that the food supply is insufficient to meet the needs of the population, that the food intake is neither adequate nor balanced, due not only to cultural but also to economic factors, and that biological utilization of food is inadequate.

Per capita food availability has not increased appreciably over the previous decade because of a number of factors including, notably, land tenure systems, low soil productivity, inadequate irrigation systems, limited use of fertilizers, failure to apply modern agricultural and fishing technologies, primitive farming methods and the prevalence of plant and animal disease, and also accelerated population growth. It has been estimated that more than 35 per cent of meat production is lost because of certain zoonoses. This explains the support given by the Ministries of Health and Agriculture to the Pan American Foot-and-Mouth Disease and Zoonoses Centers.

The influence of nutritional customs and habits, as well as beliefs and superstition, on

food consumption patterns is well known. These factors, which are related to illiteracy and ignorance, accentuate the effects of low family purchasing power. There is extensive documentation showing that microbial and parasitic infections are a contributing factor in poor biological assimilation of food. Moreover, the Inter-American Investigation of Mortality in Childhood, sponsored by PAHO, has revealed a large percentage of deaths caused by infections in which malnutrition was a predisposing factor (*21*).

The interrelationship between nutrition and infection is the primary factor of epidemiologic importance to be taken into consideration in our environment; its economic and social origin must be weighed, and activities must be put in hand with a view to attaining targets of genuine human value in relation to the health of the children in our countries during the present decade.

The entire complex process, extending from production to consumption of food, to its biological utilization, and related to food imports and exports, must be regarded as a system and dealt with on the basis of a well-defined food and nutrition policy. The responsibility for implementing such a policy lies with the Ministries of Health, Agriculture, Education, Economic Affairs, and Planning. Up to the present time—in spite of the serious problems noted above—the Governments have yet to establish a mechanism for reconciling the availability of the food required for a healthy population with the economic need. We maintain that the first of these factors is paramount because of the contribution made to national income by a healthy, well-nourished population. We reaffirm our decision to encourage the adoption of a food and nutrition policy and to implement it through carefully devised and coordinated programs and projects. This is, to be sure, a long-term objective and one which it will not be easy to attain. But its time has come. International cooperation among PAHO/WHO, the Food and Agriculture Organization (FAO), and the United Nations Children's Fund (UNICEF) will be helpful in bringing this about. For the reasons stated, we are confident that the Inter-American Development Bank and the International Bank for Reconstruction and Development will increase their loans for the control of foot-and-mouth disease and the zoonoses most prevalent in the Americas and for projects aimed at assuring an adequate supply, consumption, and utilization of food in the Region.

It is recognized that, as part of the development of an intersectoral food and nutrition policy, there are a number of programs which contribute to an overall solution and other measures which could help to alleviate the situation in the short term.

The former include changes in the economic structure and in land tenure, in order to achieve significant changes in the structure of demand and measures to ensure an adequate food supply and a consequent improvement in the nutritional status of the population. This will be achieved through effective land reforms and the use of modern food production and processing techniques, supported by modern marketing systems. At the same time, the association of family groups in agricultural cooperatives is desirable, in order to transform the out-of-date rural structure into a productive agricultural industry.

Among the possible means of alleviating the present food situation through the use of existing potentialities in the rural communities is the promotion of local food production in subsistence-economy areas. Teamwork on the land in communal groups, using modern agricultural techniques will improve local production of food which can be used directly to improve the diet of the families in those communities.

Furthermore, the economies of our countries do not always permit the importation of foods to supplement domestic production in

order to meet food requirements of the entire population.

We have proposed a series of specific targets and a strategy for reducing the prevalence of nutrition-related diseases and for approaching an optimum level of nutrition in our countries. These targets and strategy represent an effective program which we believe can be carried out. However, the program will not be feasible unless the problem is accorded its proper priority and supported by the resolute action of Governments, by provision of the necessary resources, by active participation of the people themselves, and by advisory assistance from the international organizations.

It is recognized that an adequate nutritional status and the satisfaction of the demand for food is an inalienable right of peoples. Consequently, this right is established as an aim in itself, apart from any purely economic considerations related to the economic and social development of a country.

COMMUNITY PARTICIPATION

As pointed out in the preceding section, the last few years have seen the growth of a movement toward participation by communities which organize their efforts in support of health programs. Historically, the origin of this movement is a system of real teamwork traditional among the aborigines of the Hemisphere.

As far as health problems and the promotion of health are concerned, they constitute a framework which in its broadest sense will act as an educational background, a factor stirring the conscience of the man in the street to change his way of thinking and his behavior and to see health not merely as a right but as an overriding responsibility of the people, who must no longer be content to accept programs, but must participate wholeheartedly in them so that the health resources created by and for them will expand and multiply.

Community organization will be the decisive factor in exploiting the inexhaustible potential of the people, channeling their concern in the direction of genuine social service activities, for the betterment of the environment. The effects will be of the utmost importance in the struggle to attain better and higher levels of health and thus promote the steady development—physical, social, and cultural—of man.

In the urban and rural environments alike, whenever there has been real motivation in terms of increasing the well-being of the community, the population has responded beyond expectations. What is important is to listen to the people, and to give them a voice in the decisions and a role in the work, including its financing. A community is organized into groups whose composition depends on the type of problems and the action to be taken for their solution, and each group is assigned specific responsibilities. Collaboration of these groups with the national and local health authorities will make it possible to expand the aims and assure the completion and continuity of each program.

Some countries have adopted laws on the subject, supporting community organizations or other forms of popular organization.

The value of the so-called voluntary collaborators has been demonstrated in the malaria eradication program, especially in its consolidation and maintenance phases. Volunteers can also play a useful role in other health activities such as immunization and sanitation programs.

It is important, let us say once again,

to catalyze this vast potential source of cooperation for carrying out activities for the prevention and cure of disease in the Hemisphere. Rural communities frequently offer the necessary conditions for the promotion of comprehensive development programs, including agricultural and livestock production, housing, schools, health services, local roads, and other components that contribute to the improvement of living conditions.

Community participation has proved to be an effective reply to this new approach to health care and disease, inasmuch as the motivation, education, and organization of communities is enabling them to participate in programs in the interest of their own health.

HEALTH MANPOWER

Human resources continue to be the essential element for "integrated medical care." Manpower—whether consisting of professional personnel trained in the university or auxiliaries working on an integrated and systematic basis within the context of a program—are the means of assuring the achievement of the goals in view. As has been pointed out, the activities of health personnel can benefit a greater number of persons than was envisaged in a project if the community is motivated and understands the objectives pursued.

In the past decade there was a marked advance in the training of the various categories of health workers. Noteworthy is the case of physicians, whose training is planned on a level in keeping with the rate of growth of the population through the creation of 60 medical schools during the period in Latin America and the Caribbean area (*22*). A similar situation is to be seen in the technologically advanced countries, where the prevalent types of problems require more and more personal care.

In this connection, there are certain problems which, although not unique, call for special emphasis.

The general practitioner, the primary provider of family care, represents only a small proportion of all physicians and must have social skills and attitudes. As a result of the growing trend toward specialization, one of the countries reported a drop of 5,000 in the number of family physicians as compared with 1957. The training of sufficient general practitioners is a necessary corollary of the structural changes proposed.

The problem is further complicated by the fact that fewer physicians practice where their services are most needed, namely in poor urban areas and in the rural parts of the country. There is a discrepancy between the numbers of professionals in the large medical centers of large cities and the rural areas of many communities where there is not a single doctor.

There is a need for a more rational distribution of physicians in the various specialties. Even in the technically advanced countries, the need is being recognized for making better use of resources and raising productivity through the help of auxiliaries, whose services save the physician's time.

In the solution of the health problems of the developing countries it has been shown that nurses, nursing auxiliaries, and members of the community are the key to the delivery of health care. The shortage of nursing personnel is still serious, and if the goals of country health plans are to be attained, these plans should define the level of nursing care each country requires within its health system, the category and numbers of personnel, and the training programs needed; they should also take the measures necessary to put this into practice.

The past decade also witnessed substantial progress in the training of dentists, engineers, veterinarians, biochemists, pharmacists, nutritionists, and other professionals. However, the present need is even greater and the foreseeable requirements make it imperative to intensify the training of health professionals.

The problems in the field of health manpower are related to the systems of instruction in the universities, the distribution of these human resources in the urban and rural environments, emoluments, incentives, migration, the advanced training of graduates, and the type of organization of the medical care system.

It is necessary to plan the training and employment of health personnel in the countries.

We reaffirm our support of the reform of the health science curricula which is advocated by PAHO and WHO (*23*). This reform is characterized by an integrated approach based on the objective of serving health as a biological and social function; it is multidisciplinary in the sense that the normal and pathological states of the individual and of communities are examined through simultaneous and systematic application of principles and techniques explaining their origin and aiding in their prevention or their cure when this is possible; and it is multiprofessional in that it seeks to bring about the training of health professionals and technicians in the university through a gradual process in which the basic, clinical, and social sciences are progressively coordinated.

It is noteworthy that present-day education programs reflect and depend on the structural units—professorships or departments—into which the educational institutions are divided. This division has often been such that it contributes to a compartmentalized image of health, as opposed to one deriving from a properly systematized body of knowledge. The ideal solution, and that which is sought, is to organize the teaching-learning process on the basis of problems and not disciplines, with all the necessary instructors, regardless of the unit to which they belong, taking part in the explanation of those problems and endeavoring to give the student an understanding of all aspects involved in a normal or pathological function. In other words, to give the student a complete picture of a process occurring in nature, rather than expecting him to create these elements.

In order to carry out this policy, we have recommended that health organizations, public and private, work more closely with universities through a regionalized system of instruction and health care. Thus, health agencies will be able to contribute to and benefit from education, while universities will be placed at the service of development and social well-being. Research, centered on the most prevalent problems, is the link to progress for the benefit of the people. This is our understanding of the concept of "community medicine," which we regard as a means of giving education an opportunity it sorely needs and professors and students a chance to apply modern procedures in the prevention and cure of disease.

We consider it highly useful for students of the various health sciences to participate in the services from the beginning of their course of study. Teaching based on guided practice facilitates the learning process, and gives the future professional a feeling of worth, as well as first-hand knowledge he would not always obtain through purely academic work and his own experience. The so-called "rural service" programs, in which the student, prior to receiving his degree, is required to spend one or two years in a given community and assume responsibility for preventive and curative work, are a useful complement to the student's academic training. The system should not be restricted to the training of physicians; it should also be used in training dentists, nurses, veterinarians, and other professionals. Naturally, the results

will be in direct proportion to the extent of supervision the student receives, the extent to which he can consult other physicians or refer certain cases to them. If this stage is regarded as the beginning of a governmental career in which there are proper incentives, the possibilities for a successful operation of the system and for benefits to the country are all the greater. The system should, of course, be operated as a part of the process of coordination between the Ministries of Health and the universities.

We realize that these proposals can be carried out only through progressive stages and that their implementation requires a firm and continuous commitment on the part of our Ministries and the universities. The national interest and social well-being must be the guiding principles in the performance of this task.

We believe it essential to improve the information on human resources to include not only their categories, numbers, and career or professional status but also their training, experience, and availability. This will require precise definitions of the functions of the various categories of professionals, technical and auxiliary personnel. The information must be systematized and kept up to date if it is to be useful for the planning of health and education. Once the responsibilities of each of the categories within the structure of institutions has been established, it will then be possible to organize community participation in such a way as to maintain and accelerate health programs.

The increasingly larger number of persons completing their secondary schooling is reflected in a growing demand for enrollment in universities. For various reasons many universities are not in a position at present to restrict enrollment. This combination of circumstances calls for student guidance and also for the establishment of new professional courses of study related to development needs. In order to increase the number of students admitted and improve the quality of instruction, it is necessary to train more and better teachers and research workers in universities and schools of public health.

These ideas on the reform of education and health sciences are directed, among other things, to promoting the training of technicians, without precluding the possibility that the most promising ones will go on to higher levels of training in the future. Should such measures not be taken, it is predictable that the present imbalance between professionals and intermediate-level technicians will persist. According to available information, 45 per cent of health manpower in the Latin American and Caribbean countries is university-trained, 12 per cent has pre-university or technical training, and 42 per cent are auxiliaries (*24*). Because so many of these auxiliaries have not had the benefit of organized training—this in spite of significant progress during the past decade—it is often necessary to indulge in the wasteful practice of assigning persons with university or pre-university training to activities more appropriate for auxiliaries.

This situation is made even worse by the uneven distribution of health manpower as between urban and rural areas. The concentration in urban areas and the relative neglect of communities located far from the major cities is all too evident. As we have already said, there is an urgent need to institutionalize the system under which a graduate is required to devote a period of time to rural service before receiving his degree. This measure should be supplemented by organizing the services in such a way that the largest possible number of persons are within the reach of trained auxiliaries working under adequate supervision. This is perhaps the most important and urgent task for the present decade.

Another problem is that of establishing stipends and incentives at high enough levels to attract health officials to rural areas. Sufficient attention is not always given to the significance of such problems as isolation,

lack of communication with scientific centers in the country and abroad, geographic obstacles to the referral of patients to better-equipped establishments, the difficulty of obtaining prompt delivery of equipment and materials essential for the prevention and treatment of disease, and excessive responsibilities. All the health personnel in these areas merit relatively higher compensation for their efforts.

Migration of professionals to other countries of the Hemisphere, with the consequent loss of valuable experience for the countries that trained them, is a matter of serious concern. The loss to the home country is considerable in terms of the cost of their training and the value of the contribution they make over their professional careers, not to mention the lives they might have saved and the diseases they might have prevented at home. The country receiving them is correspondingly enriched. We believe it necessary to update the information collected by the Pan American Health Organization and take whatever measures are needed to reduce this migration (*25, 26*). Experience shows that this exodus is not prompted exclusively by the expectation of a higher income; the motivation is also a desire to realize one's potential to the fullest.

These summary observations on health manpower—based on an analysis of the documents—confirm the conviction that human resources are the essential element in each and every program for the prevention and cure of disease in our countries. We have emphasized the priority assigned by us to providing services to individuals and communities currently lacking health care of any kind or, what is even worse, having no access to it. Fully aware of the situation and of the seriousness of the problems, we submit that to assign to auxiliaries—under adequate professional supervision—the responsibilities compatible with their experience, is a highly urgent matter. By so doing, we could meet the social and humanitarian demands of our calling.

This proposal also envisages the training of graduates provided that it includes, at every stage, a contact with reality and the application of modern techniques to the solution of the most widespread problems; in short, that the education be enriched through action. We have already made reference to "rural service or internship" for all the health professions, which we should like to see formalized in certain situations and countries.

Truly impressive advances have been made in the so-called "life sciences" during the past 30 years. These advances have stemmed from scientific research, conducted by public and private institutions alike, out of which have arisen new concepts and interpretations of life phenomena, a better understanding of the dynamics of these processes in individuals and communities and, as an outgrowth of all this, diverse approaches to the solution of widespread problems. Much of this effort, including noteworthy discoveries, has taken place in the Americas. Because of this progress, health education has become increasingly more complex and costly and the advanced training of professionals more urgent. Graduate training today involves disciplines going beyond the health sciences themselves. Only rarely are these disciplines taught or practiced in a single university with the depth required for the training of scientists.

We are in agreement with the idea of improving the mechanisms now at the disposal of the Pan American Health Organization to enable programs to be developed affording graduates in the health professions optimum conditions for independent study and scientific and technical development in areas of interest to their countries.

PROFITING FROM THE LESSONS OF THE DECADE

During the past decade considerable advances were made in both the prevention of disease and the care of the sick. This progress, achieved through the efforts of the people and their Governments, was the net result of successes and failures which taught us many lessons that can usefully be applied in our work of bringing a minimum of well-being to every inhabitant of the Hemisphere. Our task is to offer opportunities and put our trust, as the history of the Americas has taught us to do, in the intrinsic qualities of the men and women of the Hemisphere. The population of the Americas as a whole increased by at least 24 per cent but that of Latin America and the Caribbean rose by 33 per cent.

Our problem lies in providing services to the 37 per cent of the population that today receives no medical care of any kind. Our firm commitment to this task has been put to the test and proven on many occasions. We propose to foster an even greater degree of cooperation between our countries through PAHO/WHO.

One of the problems that aroused most concern during our debates was the inadequacy of coverage and the short supply of health care for all citizens. Not infrequently we find that our programs are the legacy of an archaic system which served a useful purpose in the past but is noteworthy today for its limited accessibility, its prohibitive cost, and its decided inadequacy for the giver and the receiver alike. It was pointed out in general that even in developed countries poor persons, remote or isolated groups, and indigenous populations lack proper care.

The task awaiting us in the decade now beginning makes it clear that unless there is a decided change in the traditional structures, it will not be possible to effect a breakthrough and make the coverage implied by the right to health a reality. Ingenuity, boldness, resolution, and tolerance of change on the part of all concerned will be indispensable.

To this must be added the expected increase in population.

The vast majority of this 37 per cent lives in rural areas or in the marginal districts of major cities. This sector of the population accounts for a disproportionately large share of general and specific morbidity and mortality. It is subject to communicable, acute, and chronic diseases and to malnutrition, illiteracy, and lack of sanitation. Owing to its minimal income, its diet is quantitatively and qualitatively inadequate, and this is reflected in the mortality of mothers and children. Accordingly, mass migration from these areas to the cities, and the "ruralization" of the latter, is not at all surprising. By the end of the 1971-1980 decade, it is anticipated that, in addition to the growth of the population now estimated at 100 million people, one quarter will be located in cities of over 500,000 inhabitants and 50 to 55 per cent in cities of 20,000 to 500,000. It is expected that four metropolises will reach a population of 10 million inhabitants and several others will be approaching the 4 million mark. The weight of this geographic distribution will be felt in the demand for services, including health services, and in environmental deterioration. The planning of the development and each of its components is therefore an urgent matter, justified by the desire of our Governments to guarantee and implement the right to health and social well-being.

In the field of health, the experience of the past decade has taught us many lessons which we should apply in the present decade if we are to meet our responsibilities. We recognize that a firm political decision is a highly essential factor in the successful accomplishment of plans, programs, and projects. The diversity of the countries of the Region, in

terms of the nature and frequency of problems and the quality and quantity of resources available, is readily apparent. That should lead us to accept the fact that planning must be applied through successive stages in which the objectives can range from attacking new problems to extending the geographic coverage of a program or serving a larger number of people. Planning for the entire health sector will be possible in some cases in a given region of a country, and in others for the entire country or even for adjacent areas of two countries. In every case, however, planning of the health sector cannot be done independently from economic development planning as a whole, because, as we have pointed out, the two complement one another. The inference to be drawn is that there is no single method but rather a series of methods that must be applied in the light of each particular situation. Hence the sectoral planning process is conceived as an element proportionate to and in harmony with the economic and social development plans, and its goals are directed toward the implementation of the whole series of policies designed to raise the health levels of the community to the highest degree possible. It must not be forgotten, moreover, that in many instances services are rendered or planned in relation to projects inspired not by the needs of the community but by the desire to introduce imported techniques and procedures of doubtful benefit to the community's priorities.

In spite of the large number of health specialists trained during the past decade in this field, education must be further intensified in accordance with the scheme developed by the Pan American Center for Health Planning (27). There is ample room for research into new systems that will make it possible to serve the largest possible number of persons at the lowest cost, in order to solve the most widespread problems.

The need to improve the quality, quantity, and use of demographic and health statistics is clear. No rational planning or evaluation is possible without reliable statistics. We speak today of information systems to support planning and evaluation and provide a basis for taking decisions before and during the execution of projects. Such systems must be created during the present decade, either for specific functions or, where circumstances permit, for the sector in its entirety. Without them the utilization of available resources will fail to yield the expected results. We regard the documents submitted by the Pan American Health Organization as valuable tools to support the decisions of our Governments in matters of health planning (*28, 29*).

Progress during the past decade emphasizes the importance of expanding and intensifying the coordination of all the national institutions involved in an integrated program of health care. This will be facilitated by joint formulation of programs and projects and by close interaction of the services concerned with their implementation. What we are seeking to accomplish is to avoid duplication, reduce costs, and increase the efficiency of institutions. Many of us recognize the validity of the statement in the Basic Reference Document that "in almost all the countries of the Americas, there are numerous organizations that overlap and compete with one another. This situation results in squandering of resources, unequal coverage of different population groups, and unnecessarily high costs." In view of the increasing number of people today lacking any scientific care, we reaffirm the urgent need to use to the full the installed capacity of our countries. Some have decided to set up integrated health services to this end. In such cases the medical services financed by social security have been incorporated into the new body, which comes under the Ministry of Health.

During the past decade, deficient organization and administration of national and local agencies was identified as one of the major obstacles to providing the population with the

means for the prevention and treatment of disease. We are convinced that there can be no viable planning without efficient administrative practices. And we intend to emphasize whatever will help to improve management in our Ministries and in all their agencies at the intermediate and community levels. We must encourage the training of administrative officials, the use of modern methods, and, where justified, the application of systems analysis and computer science techniques. All these efforts must be made as part of the planning process and must include program budgeting.

Along the same lines, we believe it important to insist on the need to arrive at clear definitions of the functions and spheres of responsibility of professionals, technicians, and auxiliaries. This will enrich and facilitate the formulation, execution, and evaluation of projects and will also provide a sound basis for motivating the participation of communities and achieving a substantial increase in health manpower. We have already noted—and this is another lesson of the past decade—the wealth of potential manpower which the Hemisphere has, both in the urban and rural areas, and which is only awaiting an opportunity to contribute to the common good. The more this potential manpower is given a voice in the decisions on matters involving its immediate interests, the more assured will be its contribution, the more effective its work, and the more sustained its commitment and concern.

Modern health techniques—those already available and those we are certain that science will provide in this decade—must be applied in a manner consistent with the life style of the societies of our countries and adapted to local conditions. Cultural characteristics need not be a barrier to individual and collective well-being. The psychological and social infrastructure can play as important a role as the physical infrastructure in matters of health, when age-old customs are observed, because this helps to persuade the members of each community that the scientific methods are of greater value than the empirical ones—in other words, when new techniques and methods are applied in accordance with local possibilities.

In all the countries of the Americas the cost of medical care, especially in hospitals, has risen steadily. Whatever the reasons, this is a fact that makes it imperative for us to review the system in use today. Construction of new in-patient facilities should of course be limited to what is strictly essential, with preference given to remodeling of existing institutions. This can be done if we intensify programs of prevention and nutrition, improve ambulatory and out-patient care, and reserve hospitalization for those cases in which treatment under continued observation is required. In such an arrangement specialized hospitals should be reduced to a minimum. The sooner the existing ones—for instance, institutions devoted to the care of tuberculosis patients—are converted to general hospitals, the better use will be made of available resources.

This proposal includes the application of "progressive patient care" systems in which human and material resources are allocated and concentrated in accordance with the seriousness of each case. At the same time, the hospital is placed at the service of the community 24 hours a day.

Medicaments are an important item in State investment in the health sector. The constant increase in pharmaceutical preparations, the variety of names and the different associations of drugs placed on the market by manufacturers make therapeutic care complex and very costly. If to this is added the independent acquisitions of certain State establishments we find a chaotic situation which makes it impossible to produce consumption and output statistics and greatly increases the price of medicaments.

Bearing in mind that Latin America and the Caribbean area invested in 1970 approximately US$2 billion in medicaments, or approximately 1.3 per cent of the gross domestic product, the question arises whether the preparation of a set of national formularies, the organization of self-financing quality control, the incorporation of the production of medical and other preparations in the regional common market, and similar devices, would not reduce the investment of capital goods in the health sector. This approach largely depends on prescriptive rationalization on the part of the medical profession.

The whole field of equipment maintenance is equally important; when well organized, it ensures that the equipment is utilized efficiently. The amount of capital lying idle, inactive or unproductive because of unserviceable or temporarily unusable instruments in establishments in our countries is enormous. More important than the cost is the loss of patients not treated at the right time because of inadequate equipment. This is just another of the lessons of the past decade that will have to be applied to the full in the present decade.

We have noted with considerable misgiving that 70 per cent of the hospital directors in Latin America have no formal training for this job, a situation which we are forced to correct as soon as possible.

From a functional and rational point of view, we should like to reaffirm the important need to integrate preventive and curative techniques throughout the system. From an administrative standpoint, it is equally important to coordinate all the institutions that can carry out health care activities. Both of these are aspects of the planning process, which includes priorities, measurable objectives, procedures, and investments.

Not all of the laws and regulations are consistent with the principles and methods of modern health practice and of the jurisprudence this practice has been creating. Moreover, existing laws and regulations are not being applied effectively, owing to dissociation between the activities carried out by the agencies of our Ministries and those performed by the persons responsible for effectively applying existing regulations. We must therefore define the problem in relation to the legal texts, systematize the latter, and issue regulations to assure their enforcement (*30*).

We have referred to certain suggestions for obtaining more and better health care through the use of available resources. Each Government will determine for itself to what extent these suggestions are applicable to it and whether there are alternative solutions that can achieve the same purpose. This refers to the problem of extending coverage to persons currently lacking medical care of any kind, whose number is estimated—we repeat—at 37 per cent of the populations of the Latin American countries and the Caribbean area as a whole. And in none of these countries is service of uniform quality evenly distributed throughout the national territory. As a result, there are groups that are not receiving the benefits of preventive and curative care.

Even if the best possible use of installed capacity were being made, there would not be enough to satisfy the needs. As we have pointed out, these needs are concentrated in the rural areas and in the peripheries of large cities. In the rural areas, special efforts must be made in favor of those who live in isolated locations and must be attracted to accessible communities through incentives that will assure them, to begin with, at least a livelihood. Once again we should like to stress that their active participation, beginning with the stage at which the work to be done is determined, is as important as the provision of funds and techniques. Health activities should for obvious reasons be organized as one of the first requirements in these new communities. Unless a rural development policy such as this is adopted, there will be

no possibility of offering services to these people who live in isolation.

Until this is accomplished, emphasis should be placed on the so-called "concentrated rural areas," that is, on viable communities, by which is meant those that are capable of organizing themselves for the common welfare. For these communities, particularly, we must accept the fact that the most frequent health problems—which are the dominant ones in developing countries—cannot be solved with university professionals alone. There are not enough such professionals, nor can they be trained in sufficient numbers during this decade. It is necessary to rely on trained auxiliaries, assisted whenever possible by graduate nurses. Their work will be enriched through participation in the health committees of communities. There is ample experience to ensure successful results through this system. What is essential is that the system be properly planned and implemented as part of a national health plan. In order to reduce mortality and morbidity rates, we must achieve effective levels of coverage, which means extending service to large numbers of people in connection with each problem. The installed capacity must be used in such a way as to reach every organized service, and new services must be created through the utilization of budgetary allotments and community contributions.

We recognize that there are health activities in which a large number of persons can be served within a given period of time. An example of this is the control of communicable diseases by means of immunization. We recommend that such activities be organized on the basis of existing services for persons who can readily visit them. In the case of those who cannot do so, it is suggested that services be provided in specified places to be determined according to the location of local health agencies. Once a degree of immunization sufficient to interrupt transmission is achieved, the necessary infrastructure should be established for epidemiologic surveillance and for vaccination of new additions to the community. Wider use of procedures for food enrichment, salt iodization, and water fluoridation, together with installation of basic sanitation services, makes it possible, among other benefits, to alleviate the social burden of disease and reduce expenditure for curative purposes.

Although we are convinced of the value of integrated development of rural areas, we have not had long experience with such programs in this field. Wherever these programs have been tried, the result has been increased social welfare. The health sector should be included in these programs and in other development plans in which small investments will yield much greater returns than if made under isolated programs.

TOWARD AN INCREASE AND BETTER USE OF INVESTMENTS

The past has taught us the principal obstacles that interfere with the solution of the most socially significant health problems, even when the essential resources are available. We have mentioned these obstacles in an effort to create an awareness that will help to limit their negative impact on the achievement of the purposes which are common to all our Ministries. We should like to point out, however, that even if available resources are used with maximum effectiveness, the task before us—37 per cent of the Region's total population on an average lacking modern health care of any kind—larger investments will be required. The anticipated increase in population should not be overlooked in this regard.

For the purpose of programming these in-

vestments, we have drawn up certain standards in which prevention is given priority in functional terms. Problems affecting the largest number of people are emphasized from a social standpoint. The use of auxiliaries under adequate professional supervision is stressed from an operational point of view. Coordination of all health services, regardless of who provides them, and of these with the universities, is given priority in the institutional realm. And the participation of every human being capable of contributing to the common good is given prime importance.

The health problems we have identified for 1971-1980, and the goals we have proposed for each of them, are based on a better understanding of the realities in the Americas. We know that the information is insufficient and urgently needs to be improved in terms of quantity and reliability. However, the progress achieved in the last 20 years in the field of statistics enables us to describe trends, formulate assumptions, and determine courses of action. As we have said, the population of the Hemisphere is expected to increase by at least 30 per cent during the present decade. Furthermore, about 40 per cent of the people are not receiving any effective preventive and curative services at present. Even in those societies of the Americas having the highest levels of development there are large population groups in this situation. It is only logical to conclude that investments must be increased if the ravages of disease and death in all the countries are to be reduced.

We are fully aware that progress—or the lack thereof—in health matters depends on the extent of economic growth in each country, on the distribution of income, and on the degree to which structures and institutions are modernized to assure a more productive use of the funds allotted to each development sector. The achievement of all these goals, as specified in plans, programs, and projects, is strictly in accord with the political decisions taken at the highest levels of Government. It is there, and only there, that priorities are assigned to health and to the other social functions contributing to well-being and providing opportunities for each individual to realize his aspirations.

In full awareness of this situation—a true frame of reference—we have formulated the Ten-Year Health Plan for the Americas for 1971-1980. In order to implement this Plan we shall have to increase the present service to a point where the needs of the greatest possible number of persons can be satisfied directly through a comprehensive system for the prevention and cure of disease. If the Plan is fully carried out, we are certain that progress will be far greater than in the past decade and that its pace will continue to quicken through the end of the century. This progress will be reflected in a significant reduction of death rates; virtual disappearance of certain diseases; reduction in the incidence of acute communicable diseases; more and better services in the field of water supply, sewerage, disposal of solid waste and other residues; in less air, water, and soil pollution; in a larger supply of essential proteins for vulnerable groups such as mothers and children; and in an increase in the relative incidence of degenerative chronic diseases such as cancer, cardiovascular disease, and mental disorders. We are confident that the intensive scientific research under way on these problems will provide us with better techniques, the progressive application of which will help to bring them under control. Health professionals will perform their work with a clearer view of reality and with broader opportunities to abide by the standards of their profession. By the end of the decade we shall have rationalized the use of material resources to the fullest extent possible, particularly of the equipment, instruments, and buildings essential to our Plan. Above all, we shall have helped to awaken or intensify an authentic movement in the communities, in keeping with the purposes of our Governments, di-

rected to the promotion of health and the diffusion of optimism.

It is obvious that larger investments will be needed both for capital goods and for the operation of services. The funds will have to come from the national budgets and from contributions of persons, institutions, and communities, including the traditional tripartite financing by social security (State, employer, and worker), supplemented at each point by external funds provided under multilateral and bilateral programs.

An estimate of investments in health in the past decade by the public sector alone indicates a figure of US$20 billion. In some countries it includes the medical benefits financed under social security. This figure does not include, as we have said, private spending, that is, the amount devoted by each person and family to curative medical care. This sum includes the external capital, which we have estimated as $2.6 billion from the Inter-American Development Bank, the International Bank for Reconstruction and Development, and the United States Agency for International Development.

For every human endeavor it is legitimate to ask whether the same investment might not have yielded better results—in our own particular case more health and well-being. It is precisely for this reason that in the course of our constructive dialogue we have given very careful attention to ways of surmounting those obstacles which have prevented better and more vital use of the resources made available by our society for meeting a collective responsibility involving the common welfare. This analysis, and the measures we are committed to carry out, permit us to say that with increased investments we shall achieve the goals we have set for ourselves.

Our estimates have been made on the basis of today's costs. We know that costs will increase as a result of new technological advances (and we want but one class of health care for all our citizens); developments in the international financial situation and the relative decline in the purchasing power of our currencies; the rise in the price of drugs, food, equipment, materials, and essential equipment; and the inevitable adjustments of wages and salaries. For our part, we are determined to obtain the best possible use of resources and to give the natural leaders and the social groups the fullest possible participation in preventive and curative activities while expanding the responsibilities of officials of our Ministries. We are extremely concerned over the high rates of unemployment and underemployment in the Americas (*31*). Inability to find employment poses a serious moral crisis for a person who is willing and able to work, either physical or intellectual, for the good of his family and the society to which he belongs. There is nothing more depressing or frustrating. Moreover, the requirements and demands of development are so clear and of such a nature that sophisticated techniques are not required for most of the problems. Our countries have all the elements they need for molding their own individual lifestyles based on genuine national aspirations and not on imitation. Health activities could be used to offer many of the unemployed in the countryside and the cities an opportunity to participate in an important undertaking leading by different roads to social well-being.

Our Governments will determine the specific problems and objectives to be reflected in the Ten-Year Health Plan. The cost of the necessary activities, both preventive and curative, will have to be estimated in terms of current values in each country. Wide variations are to be expected within and between countries. According to information we have available, we estimate that health expenditures charged to the national budget over the past 10 years will have to increase by at least 85 per cent during the current decade.

The external capital contribution should be at least US$5 billion. As we have said, it will

be allocated mainly for construction of facilities and purchase of equipment in the urban and rural areas, within the basic parameters we have already mentioned; for sanitation and environmental improvement services; for increasing the supply of proteins of animal origin through the control of foot-and-mouth disease and certain zoonoses; for preparation of biologicals, food, and drugs; for programs for the control of certain communicable diseases; for the training of human resources; for establishing and improving systems of planning, evaluation, and information, for administration of health services, and for basic and operations research.

We are extremely pleased to note that the Inter-American Development Bank is now offering loans on 40-year terms with a 10-year grace period and at interest of only 2 per cent. We trust that such loans will be made available for health programs requiring external capital and supported by suitably prepared projects, for all countries without discrimination. Among such programs we should like to stress those for maternal and child care in suburban and rural areas of our countries. We trust that other multilateral or bilateral sources of credit will adopt a similar lending policy.

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However, the five years since the Meeting of the Task Force on Health have witnessed the burgeoning in the Americas of a spirit that is breathing new life into old patterns and obsolete structures; an increasing willingness to meet social aspirations; a recognition—not only in words but also in the law and its application—of the right of every human being to a minimum degree of well-being, regardless of his social class, religion, or genetic origin. Life has quickened its pace and become more demanding, and demands far exceed the resources and the capacity of institutions to satisfy them (*32*).

There is a clear awareness today of the implications of health, and our Governments are more than ever firmly resolved to satisfy the increasingly insistent demands of our communities. Everything said in the above quotation has become even truer since October 1968, when the Second Special Meeting of Ministers of Health was held. Today we have a better picture of the problems and how to resolve them. With the necessary manpower and financial resources available we should be able to meet the responsibilities set forth in the following pages.

We have identified the problems we consider important for our countries according to available information. We have classified those problems in terms of the operational nomenclature we have referred to, arranging them under two basic headings: health services to individuals, on the one hand, and environmental action and development of the infrastructure, on the other. In each program area we have taken account of present conditions, probable trends and changes, and objectives (whether or not quantifiable), and measures for achieving them. The measures have in turn been described in scientific, administrative, and financial terms.

With the sole purpose of facilitating the analysis of a subject as complex as health from the standpoint of its intrinsic value and its contribution to development, we have presented each of its major components separately. The classification—like all classifications, is arbitrary, for in nature, health and disease are as inseparable as light and shadow.

We realize that this form of presentation may be useful to our Governments in making decisions in specific projects within a continental frame of reference. Above and beyond this, however, the concept of integrality we are advocating must prevail in the consideration of ways of arriving at the most effective possible organization of the resources available to our countries for the prevention and cure of the most widespread diseases and for satisfying the health aspirations of their people. This will involve the application of the methods of planning and programming we have mentioned, which are based on the inter-

dependence of all phenomena that conditions social well-being. In our own particular field the objectives for each program area—whether they involve activities directed to the individual or the environment—must be correlated with the existing infrastructure and with that to be created. Everything will be conditioned by the actual possibilities of putting it into practice, in terms of human, technical, material, and financial resources.

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Part II

RECOMMENDATIONS CONCERNING PROGRAM AREAS

RECOMMENDATIONS CONCERNING PROGRAM AREAS

COMMUNICABLE DISEASES

Present Situation

A study of what has taken place in the field of communicable diseases in recent years discloses considerable progress. Mortality due to infectious diseases in the under-five age group decreased by 48 per cent in Latin America between 1956 and 1966. Over the same period, diseases of the respiratory system decreased by 26 per cent, and those of the digestive system, mainly gastroenteritis, by 44 per cent. Morbidity and mortality due to diseases preventable through vaccination, such as measles, poliomyelitis, tetanus, diphtheria, and whooping cough, also showed a considerable reduction. In spite of an intensive search, no cases of smallpox have been recorded in the Region since April 1971. However, communicable diseases continue to be a serious health problem, especially in the under-four age group.

Mortality due to measles in 10 countries is 10 or more per 100,000 and in seven countries it lies between 1 and 9 per 100,000. For whooping cough it is 10 or more per 100,000 in 10 countries, and in eight it lies between 1 and 9. For tetanus, in 12 countries it is 5 or more per 100,000, and in eight countries it varies between 1 and 4.

Morbidity from poliomyelitis in 10 countries is 2 or more per 100,000, and in 14 countries it lies between 0.1 and 1.9. The rate for diphtheria in 19 countries is 1 or more per 100,000, and in five others it varies between 0.1 and 0.9.

In most countries there is very little knowledge available on the prevalent communicable diseases, as well as on the immunity status of the populations and the effects of control or eradication programs.

Problems of infrastructure and of supplementary services are the common denominator in all communicable disease control or eradication activities. Among the former, problems of administrative organization, information systems, programming, evaluation, research, and legislation are conspicuous. Problems of resources involve manpower as well as technical material and financial resources. Problems resulting from weakness of both the epidemiologic surveillance systems and the control programs also deserve special attention.

This creates the necessity for making the required changes in the infrastructure, implementing the programs and providing the corresponding funds, in order that the following may be achieved in the current decade:

- Institutionalization and consolidation of systems of epidemiologic surveillance, the basic essential for operation of all communicable disease control programs.
- Control or eradication of those diseases which can be prevented through vaccination.
- Eradication of *Aedes aegypti*, as has been repeatedly recommended in resolutions by the PAHO Governing Bodies.
- Control of intestinal infections and parasites, because of their high morbidity and mortality.

Recommendations

1. Organize definitively efficient epidemiologic surveillance and communicable disease control systems according to the infrastructure of the general health services.

FOR THIS IT WILL BE NECESSARY TO:

• Form and maintain epidemiologic surveillance units within the respective epidemiology departments, at the central and regional levels, in all countries where such units do not now exist.

• Provide any units formed or already in existence with all resources that would enable them to:

a) Maintain up-to-date knowledge of the epidemiologic situation of diseases and the factors that condition them.
b) Learn and anticipate the evolution of the epidemiologic behavior of diseases.
c) Learn and anticipate the evolution of the conditioning factors and their influence on the behavior of each disease.
d) Become acquainted with the changes in the course and extent of diseases as a result of the control or eradication programs.
e) Recommend control measures and evaluate the results.
f) Supply the basic epidemiologic knowledge for health planning and programming activities.
g) Strengthen and perfect the structures of the health services, particularly the reporting services, so as to provide the collaboration that is indispensable for the surveillance units.
h) Perfect and develop the supporting services, particularly the laboratory services.
i) See to the training of the manpower needed for the proper functioning of surveillance units, at both professional and auxiliary levels. The goal recommended for a minimum level of efficiency in the general epidemiology services is 0.4 epidemiologists per 100,000 population.
j) Develop the resources of surveillance in order to detect immediately the introduction of cholera and other quarantinable diseases in the Hemisphere and prevent its propagation.
k) Encourage the active participation of the community in health activities.
l) Promote and stimulate health education designed to bring about the active participation of communities.

2. Reduce morbidity and mortality due to diseases preventable by vaccination—measles, whooping cough, tetanus, diphtheria, and poliomyelitis—to the rates mentioned below, through systematic and integrated vaccination programs.

3. Reduce mortality due to measles, whooping cough, and tetanus to rates of 1.0, 1.0 and 0.5 per 100,000 population, and reduce morbidity due to diphtheria and poliomyelitis to rates of 1.0 and 0.1 per 100,000 population, respectively.

4. Maintain morbidity due to smallpox at zero.

IN ORDER TO IMPLEMENT RECOMMENDATIONS 2, 3, AND 4 IT IS NECESSARY TO:

• Vaccinate 80 per cent of the children under five years of age with DPT, anti-poliomyelitis, anti-smallpox and, where applicable, anti-measles vaccines, without neglecting maintenance vaccination of 80 per cent of those born in the year. In tetanigenous areas, an effort should be made to vaccinate 60 per cent of the pregnant women with tetanus toxoid.

• Utilize combinations of vaccines whenever possible.

In countries capable of providing adequate surveillance, smallpox vaccination might be restricted to the high-risk population groups.

5. Reduce mortality due to tuberculosis by between 50 and 65 per cent by combining vaccination of children under 15 years of age with BCG, search, and specialized treatment of patients, using general health services.

IN ORDER TO CARRY THIS OUT, IT WILL BE NECESSARY TO:

• Vaccinate 80 per cent of those under 15 years of age with BCG; attempt to treat all the detected cases of tuberculosis, mainly by utilizing the techniques and activities of the ambulatory medical care services; examine with bacilloscope 60 to 75 per cent of persons with respiratory symptoms of more than four weeks' duration. All these activities will need to be integrated in properly qualified general health services.

6. Endeavor to bring venereal diseases under control, FOR WHICH PURPOSE THE FOLLOWING WILL BE REQUIRED:

• Develop and improve venereal disease control programs, including epidemiologic surveillance, special care being given to diagnosis and prompt treatment, particularly by means of regular serological research in clinics, maternal and child health centers, employment bureaus, etc.

• Develop and improve clinical services, including laboratories.

• Develop broad programs of community health and sex education, with special reference to school levels, in order to enlist the active participation of the community in solving the problem.

• Promote and encourage research into new control methods, especially the intensification of studies designed to produce vaccines against venereal diseases and discover new diagnostic methods.

7. Eradicate yaws in those countries where this has not yet been achieved, FOR WHICH PURPOSE IT WILL BE NECESSARY TO:

• Evaluate the current status of yaws in those countries where its presence is known or suspected, and intensify programs for diagnosis and treatment of the sick and contacts, with a view to eradication.

8. Control and if possible eradicate pinta in the Americas.

IN ORDER TO ACCOMPLISH THE ABOVE, IT IS NECESSARY TO:

• Assess the present prevalence of pinta in those countries where the disease is known to exist or has existed.

• Train personnel to increase their clinical awareness and ability to diagnose, treat, and control pinta.

• Include pinta in all programs of research on the treponematoses where the disease exists or has existed.

9. Maintain enzootic areas of plague under control in order to prevent extension and possible spread to urban areas.

TO ACCOMPLISH THE ABOVE, IT WILL BE NECESSARY TO:

• Develop or improve epidemiologic surveillance services in enzootic areas of plague.

• Adopt measures to protect the human inhabitants of these areas.

• Stimulate ecological investigations and research to find vaccines or other appropriate prophylactic measures.

10. Reduce the incidence and prevalence of leprosy, with a view to the consequent decrease in disabilities resulting therefrom.

IN THIS CONNECTION THE FOLLOWING WILL BE NECESSARY:

• Develop and improve programs for the control and epidemiologic surveillance of leprosy, as well as for the specialized training of personnel, both professional and auxiliary, in this field.

• Develop and improve clinical services, including rehabilitation, personnel training, and research development.

• Improve the diagnosis and classification of leprosy, thus facilitating the compilation of more accurate epidemiologic data.

• Establish a regional training and research center with a view to defining a uniform methodology for leprosy control.

• Establish pilot field units to carry out epidemiologic research on the disease.

• Treat, as far as possible, up to 100 per cent of the infectious (lepromatous, dimorphous or indeterminate) cases.

• Promote epidemiologic surveillance and treatment of at least 75 per cent of all contacts.

• All these activities will need to be integrated in properly qualified general health services.

11. Improve the knowledge of viruses prevalent in the Region and in those countries with special problems, such as hemorrhagic fevers (virus of the Tacaribe group), encephalitis, and dengue and intensify research which will make it possible to develop control measures.

IN ORDER TO CARRY OUT THE FOREGOING IT WILL BE NECESSARY TO:

• Establish a surveillance system for the rapid detection and identification of outbreaks of human arbovirus diseases in the Americas.

• Carry out periodic serological surveys in those countries where arboviruses are known to be active, using selected human populations in order to determine their immunity status to the known arboviruses of the area.

• Establish a surveillance system for locating and identifying outbreaks caused by viruses of known pathogenic importance for man.

• Conduct periodic investigations of rodents in countries of Middle and South America to detect the presence of known Tacaribe group viral agents known or suspected to be pathogenic in man.

• Establish effective systems for the reporting of morbidity from serum and infectious hepatitis in each country of the Americas during the decade and carry out studies designed to ascertain their incidence and prevalence.

• Institute routine screening of blood donors for HAA antigen in all the major cities in Central and South America that have blood bank facilities.

• Establish strategically located centers for the production and distribution of human immune globulin to be used as a preventive measure against infectious hepatitis, and set up the machinery to ensure that all countries requiring this production benefit from it.

• Encourage the expansion of the laboratory network that constitutes the system of epidemiologic surveillance of influenza.

12. Reduce deaths due to louse-borne typhus in Middle and South America, as well as the number of outbreaks, FOR WHICH PURPOSE IT WILL BE NECESSARY TO:

• Intensify surveillance of louse-borne typhus and continue experiments with attenuated-strain vaccines with a view to administering such vaccines generally to populations exposed to the risk.

• Make proper studies of vector resistance to insecticides.

• Develop national laboratories for diagnosis of rickettsial diseases in the affected countries.

• Train national epidemiologists and clinicians in the surveillance of louse-borne typhus in order to detect outbreaks and to evaluate the effectiveness of vaccine field trials.

• Promote laboratory and epidemiologic research with a view to obtaining precise knowledge of the incidence of Q fever, murine typhus, and Rocky Mountain spotted fever in the Region.

13. Carry out studies to acquire greater knowledge of the frequency and distribution of Chagas' disease and schistosomiasis and promote their control.

TO THIS END, THE FOLLOWING SHOULD BE DONE:

• Continue studies of diagnostic techniques in order to achieve uniformity of diagnosis; promote research in effective therapeutic drugs and new control methods and their evaluation.

• Incorporate the respective control programs into the regional economic development programs.

• Intensify activities in environmental health and the construction of hygienic rural dwellings.

• Promote active participation of the community in parasitic disease control programs.

14. Reduce present mortality from enteric infections by at least 50 per cent, with particular emphasis on infants and young children.

FOR THIS PURPOSE, IT WILL BE NECESSARY TO:

• Intensify surveillance of intestinal parasitosis and enteric infections (including cholera), in combination with activities related to environmental sanitation, food quality control, and medico-sanitary care, to bring about a decrease of such diseases.

• Assure the availability of facilities for laboratory diagnosis and for adequate supplies of drugs and other therapeutic apparatus (hydration equipment).

• Conduct studies directed toward discovering new methods for the treatment and control of typhoid fever, with special attention to the problem of resistant strains to antibiotics.

• Establish programs for the control of diarrhea in children especially those under two years of age.

• Establish an epidemiologic surveillance system to detect any suspected cases of cholera, to confirm the diagnosis, and to apply the treatment and control measures indicated.

• Take the necessary steps to assure availability of the antibiotics and rehydration agents necessary for the early treatment of any possible cases of cholera.

• Train personnel for the surveillance, laboratory diagnosis, and treatment of cholera.

15. Eradicate *Aedes aegypti* from the countries and territories of the Region still infested, with a view to achieving effective prevention and possibly the elimination of the diseases it transmits. Reduce to a minimum the morbidity and mortality caused by jungle yellow fever.

TO ACCOMPLISH THE FOREGOING, IT WILL BE NECESSARY TO:

• Initiate eradication activities in 10 countries; endeavor to solve the problems that are hindering the progress of the attack phase in 12 countries; and complete eradication in 10 countries.

• Intensify the yellow fever immunization programs in the most exposed populations, especially those living in jungles in the enzootic areas and persons who enter these areas.

• Recommend, in order to facilitate the acceleration of the *Aedes aegypti* eradication program, that the Government allocate appropriate resources specifically to that program.

Action to supplement the foregoing activities

Supplementary services. Develop and perfect the laboratory services in all their aspects (production, diagnosis and research, nursing, and most particularly epidemiologic surveillance).

Infrastructure. Perfect the infrastructure of the health services with respect to the organization of information services, administration, manpower training, and updating of technical standards, which will make it possible to develop evaluation programs and activities. Allocate funds to ensure the availability of well-qualified personnel and the flow of material to carry out these programmed activities.

Research. Promote epidemiologic and op-

erations research with a view to improving the direction and administration of the programs.

International collaboration. Give particular emphasis to stimulating international cooperation, by means of bilateral or multilateral agreements between countries, through international health agencies, for the purpose of strengthening the management side in communicable disease control programs, and promote the studies needed for the establishment of a bank for vaccine and other biologicals to meet the needs of the countries of the Region.

MALARIA

Present Situation

Of the 34 political units in the Americas with originally malarious areas, 12 have succeeded in eradicating the disease and two have reached the consolidation phase in their entire territory. The remaining 20 are applying attack measures in the areas still affected by the disease. Through antimalaria activities it has been possible to reduce considerably the morbidity due to malaria, and this disease no longer constitutes a major cause of mortality in the Hemisphere. Nevertheless, most of the areas where malaria has been eradicated or where the incidence is low still maintain all their malarious potential, and the tragic experience of several countries shows how easy it is to lose the ground gained through great economic and human effort.

It is expected that, with sufficient resources, it will be possible to eradicate malaria by the end of the decade in areas where 168.2 million inhabitants now live (90.7 per cent of the population of the original malarious area in the Americas). For 9.3 per cent (17.3 million persons), the final solution to the problem depends upon the possibility of applying more efficient methods against the vector, against the parasite, or on susceptible persons, with a view to breaking one of the links of the transmission chain. The strategy must be flexible and adapted to epidemiologic conditions of each area.

Recommendations

1. Avoid the reintroduction of malaria in the areas containing 81.1 million inhabitants where it has been eradicated.

TO DO THIS, IT IS NECESSARY TO:

- Improve the surveillance system and its capacity to eliminate all possible infection foci created by imported cases.

2. Achieve eradication in areas containing 74.5 million inhabitants where there are good possibilities for doing so with available resources.

FOR THIS PURPOSE IT WILL BE NECESSARY TO:

- Intensify the application of measures presently being applied, under strict supervision.
- Develop a surveillance plan against malaria following the general outlines established for the areas where the disease has already been eradicated.

3. Interrupt or focalize transmission in areas containing 12.4 million inhabitants where satisfactory progress has not been possible due to financial problems.

TO ACCOMPLISH THE FOREGOING, THE FOLLOWING MUST BE DONE:

- Assign the necessary resources for the

application of the available attack and surveillance measures that have proved successful under the existing epidemiologic conditions.

4. Reduce transmission to the lowest possible level in areas containing 17.3 million inhabitants where progress depends upon the solution of serious operative or technical problems.

TO THIS END, IT WILL BE NECESSARY TO:

• Apply the most effective available methods, after adapting them to the local social and epidemiologic conditions and to the economic development plans of the countries involved.

• Intensify research activities aimed at developing more effective or less costly methods that may be applied as alternative or supplementary measures. To this end, the Organization collaborates with the countries and maintains a broad research program with other organizations aimed at discovering new campaign methods (chemical, biological, immunological, genetic) that may make it possible to eradicate malaria in areas affected by technical problems.

5. Increase coordination of antimalaria services with institutions such as the following, whose activities may have an influence on the incidence of malaria:

a) With the general health services, with a view to establishing an adequate surveillance system suited to the epidemiologic characteristics of each area.

b) With the urban and rural development services, to reduce or eliminate vector breeding areas.

c) With the agricultural and livestock services, to regulate the use of insecticides.

6. Ensure the financing of malaria eradication programs through the permanent and flexible participation of international agencies in the form of financial resources, equipment and material, and the creation of emergency funds.

7. Intensify intercountry cooperation to ensure, particularly in border areas, the harmonious development of the different phases of the malaria eradication campaign to be achieved during this decade, including research activities.

The eradication of one of the major illnesses affecting rural areas will raise the level of health of the population, increase human potential, improve land utilization, and improve scholastic performance, all of which will have a favorable impact upon the economic and social development of the countries.

CHRONIC DISEASES

Present Situation

Advances in the control of communicable diseases and the increase in life expectancy, together with cultural and environmental changes produced by recent urbanization and industrialization, are factors contributing to a rise in chronic diseases in most of the countries of the Region. Indeed, in the first half of the past decade, two-thirds of the deaths in the age group 15-74 years in 10 of the large urban centers of Latin America were attributed to chronic diseases. These include cardiovascular diseases, metabolic and functional impairments, bronchopneumopathies, neurological diseases, malignant neoplasms, and post-traumatic conditions.

In many of these diseases primary prevention is seriously impeded by the absence of effective methods. Furthermore, the chronic patient almost always requires continuing and prolonged care either in the hospital, in outpatient departments, or at home. This necessitates the harmonious operation of a complex of services that include medical, nursing, dental health, nutrition, rehabilitation, and social services, among others. Administrative confusion and lack of coordination of efforts only serve to increase the problems, since lack of resources is compounded by inappropriate use of them.

Recommendations

1. Reduce the incidence of preventable chronic diseases.

2. Encourage early diagnosis and timely treatment of chronic ailments.

3. Meet the total spontaneous demand for services required by this type of disease, including as far as possible suburban and rural areas.

4. Conduct epidemiologic investigations so as to obtain better knowledge of the problem with a view to adequate planning of resources for control programs.

5. Reduce case fatality rates from cancer of the cervix and corpus uteri, breast and larynx, and other neoplasms in which early diagnosis and timely treatment make such a reduction possible.

6. Conduct epidemiologic research for the purpose of identifying the causal agents of the various types of cancer, and in particular the environmental, nutritional, and genetic factors associated with gastrointestinal cancer.

TO CARRY OUT THE ABOVE TARGETS IT WILL BE NECESSARY TO:

• Organize technical units on chronic diseases in the Ministries of Health of all those countries where the magnitude of the problem justifies such action—these offices to be responsible for setting policies and specific standards and for overseeing compliance therewith, with emphasis on epidemiology.

• Ensure continuous treatment of chronic patients, especially for cardiovascular diseases and diabetes, and wherever possible set up special clinics for that purpose as part of the general health services. Organize and distribute appropriately among the urban hospital centers, intensive care units for the timely treatment of emergency coronary and bronchopulmonary cases.

• Organize comprehensive educational programs to combat pernicious habits and thus reinforce preventive measures in the control of chronic diseases and cancer. One example, *inter alia*, is that of measures against the cigarette smoking habit.

• Incorporate the epidemiology of chronic diseases into general epidemiologic surveillance programs.

• Place due emphasis on rehabilitation of the chronically ill, whether wholly or partially recovered, with a view to integrating them in the life of the community.

• Give priority to training of epidemiologists in the field of chronic diseases and cancer.

• Provide cancer treatment centers with the facilities and services necessary for their operation, centralizing resources for treatment by ionizing radiation.

• Intensify and coordinate the teaching of clinical oncology in schools of medicine and dentistry, and conduct periodic refresher courses in that subject for general practitioners.

• Establish 10 cancer epidemiology centers, located in those countries where the seriousness of the problem warrants it, with a view to creating a coordinated information system to provide support for multinational research.

MENTAL HEALTH

Present Situation

The mental health problems faced by the countries of the Region show a general tendency to increase both in absolute and relative terms due, among other factors, to longer life expectancy, greater control of communicable diseases, an increase in urbanization, greater economic development, and social maladjustment.

It is estimated that the prevalence of psychoses in the Region ranges from 15 to 50 cases per 1,000 inhabitants and neuroses requiring medical treatment between 50 and 200 cases per 1,000. In most countries there is a serious problem of alcoholism; various studies have encountered rates of prevalence greater than 5 per cent. The consumption of addicting drugs and psychotropic substances is a recent phenomenon which shows signs of increasing. The few surveys carried out in secondary schools reveal a prevalence rate of over 5 per cent.

Mental retardation and epilepsy, in many instances resulting from perinatal injury and infections and traumas in infancy, show a prevalence rate of over 1 per cent.

Suicide is a serious public health problem in several countries, with mortality rates higher than 7 per 100,000 inhabitants.

Psychiatric and mental health services of the Region are few and badly distributed, offering incomplete coverage to the urban population and practically no coverage to the rural population.

In Latin America, the number of psychiatrists, psychiatric nurses, social workers, and psychiatric therapists, as well as the present rate of production of such trained professionals, is totally insufficient to cover the needs of a comprehensive mental health program.

It is anticipated that in the next decade there will be an increased demand for mental health services. Mental illnesses and personality disturbances will experience not only a relative increase, owing to the diminishing rates for illness and death from diseases linked with the environment, but will reflect an intrinsic increase resulting from the greater impact of pathogenic factors that have special importance in developing societies. The fact that an ever-increasing number of persons will live in cities leads to visions of housing shortages and overcrowding, greater competitiveness for employment, and more idle time for the populace. If industrialization proceeds at the desired pace, the psychological disturbances of workers as a result of factory automation and increasing disassociation between the worker and his product can be foreseen.

There will be a greater percentage of people over 60 who, because of socioeconomic changes, will become isolated from the rest of society, in many cases unprotected by the family group.

The use of mind-altering and dependence-producing drugs, opium and its derivatives, and particularly alcohol and psychotropic substances, will increase, as may be inferred from present tendencies, especially among males between 10 and 40 years of age.

At the same time certain problems related to the integrity of the central nervous system, such as epilepsy and mental retardation, will become more evident.

Recommendations

1. Improve the quality of primary prevention and care provided in psychiatric services and the accessibility of those services to the population, integrating these activities into the basic health services, with a view to attaining, as a minimum, a 60 per cent coverage of the population.

2. Include mental health promotion and primary prevention in all health activities implemented.

3. Reduce the trend toward an increase in alcoholism and drug dependence by making available preventive treatment and rehabilitation services covering the entire population.

IN ORDER TO IMPLEMENT THE FOREGOING POINTS, IT WILL BE NECESSARY TO:

• Promote the definition of a mental health policy with special emphasis on primary, secondary, and tertiary prevention.

• Establish a precise diagnosis of the mental health situation through epidemiologic surveys on mental disorders, alcoholism, and drug dependence, using a methodology that makes findings comparable and stimulating exchange of information among the various countries.

• Promote for each country a ratio of psychiatric beds per 1,000 population consistent with its requirements, giving priority to ambulatory treatment and short-term hospitalization, preferably in general hospitals.

• Create technical services for mental health in those Ministries of Health which do not have them, as an integral part of the general health services.

• Establish each year five new community mental health centers in cities with a population of 100,000 or more, integrating them into the local health services and stimulating the active participation of the community in regard to them.

• Organize existing psychiatric services to ensure one psychiatrist per 100 beds and one specialized psychiatric nurse per 500 beds. Every hospital specializing in mental health should initiate continued educational programs in psychiatric nursing. Rehabilitation programs in mental health hospitals should be included.

• Update laws relative to mental, epileptic, retarded, and drug-addicted patients not only with regard to services rendered but also in order to uphold the rights of the patients.

• Provide that a minimum of 5 per cent of the beds in general hospitals be reserved for mental patients.

• Organize national services to combat alcoholism as part of the general health services, at the rate of one per year.

• Train 5,000 psychiatrists within 10 years by means of three-year courses.

• Qualify 5,000 doctors in basic psychiatry to service communities of less than 20,000 inhabitants.

• Establish international centers for the training of health personnel in mental health work, at professional and intermediate levels.

• Establish annual postbasic courses in psychiatric nursing in at least 10 countries.

• Stimulate the teaching of mental health in schools of medicine and other health sciences, at the undergraduate level and also in-service training.

• Provide one occupational therapist for each 50 psychiatric beds and a total of 2,000 such therapists through in-service training.

• Provide, as a minimum, the services of one professional occupational therapist per psychiatric institution, training these personnel by means of psychiatric rehabilitation courses.

• Provide training on mental health problems, particularly in the fields of prevention, and of alcoholism and drug dependence, to other sectors such as education, justice, agriculture, etc., with particular emphasis on the teaching profession, labor organization leaders, youth organizations, and other groups active in the community.

• Modernize treatment especially through the use of techniques of the collective type.

• Promote reallocation of the relevant financial resources so as to give emphasis to programs outside the hospital.

• Recommend to the countries that their Governments approve the Protocol adopted in

the Vienna Convention of 1971, which establishes regulations concerning legal production of and trade in psychotropic substances, and proposes measures to combat illicit traffic.

• Invite Member Governments to cooperate in the development and implementation programs to tackle the problems caused by drug dependency in the Americas and thus collaborate and assist in the epidemiologic studies proposed by PAHO and WHO.

• Intensify educational activities at all levels, especially among young people.

MATERNAL AND CHILD HEALTH AND FAMILY WELFARE

Present Situation

Women of child-bearing age and children under 15, the groups exposed to maternal and child health risks in the countries of the Americas, comprise 63 per cent of the population. The accelerated population growth, which involves a proportional increase in the young and dependent, creates, particularly among the above-mentioned groups, a considerable demand for social services, including health services.

In the last decade there was some limited progress in maternal and child health care. However, the rate for maternal mortality, probably greatly underestimated, was approximately five to seven times greater in Latin America and the Caribbean (rates of 13.5 and 18.8 per 10,000, respectively, in Central and South America) than in North America (2.5 per 10,000).

Maternal mortality is to a large extent avoidable and occurs mainly as a result of toxemia during pregnancy, hemorrhages, infection, and especially clandestine abortions.

The proportion of deaths of children under five with respect to the total number of deaths in 17 countries of the Region is greater than 20 per cent, whereas in the United States of America and Canada the proportions are in the order of 4.6 and 5.5 per cent. Infant mortality rates and the mortality rates of children betwen one and four years of age—data that are subject to an important degree of underregistration—vary between 34 and 101 per 1,000 and 1.4 to 24.7 per 1,000 respectively.

The causes of child mortality for the most part can be reduced. The main causes are gastroenteritis and communicable and respiratory illnesses. It is not easy to assess the role of certain conditions that are included under the headings of "perinatal causes" and "malnutrition." Although inadequately documented, malnutrition is undoubtedly an important basic or related cause of infant mortality.

Moreover, without considering in depth the role of low national income and the disproportionate distribution of that income per family as important factors in the epidemiologic role described, it is immediately apparent that maternal and child care is limited, sporadic, and commonly of restricted efficacy. The coverage of pregnant women generally extends to less than 30 per cent; institutionalized care during delivery in about half of the countries covers fewer than 50 per cent; and assistance during the puerperium is frequently provided to less than 5 per cent. Moreover, care of children under five years of age is often belated, limited, and inadequately integrated.

The facts described above are explained to a great extent by the weakness in the administrative infrastructure of maternal and child care services; the limited or even complete lack of funding for such services; the limited availability of professional and specialized auxiliary personnel; their uneven distribution; the difficulties in communication, transportation, and equipment; and, especially, the lack

of effective community participation in related programs.

Recommendations

In general:

1. Reduce the risks of illness and death to which mothers and children are currently exposed, and extend the coverage of maternal and child health services.

With regard to reduction of risks:

2. Develop sectoral programs and promote intersectoral programs in order to:

a) Reduce mortality in infants under one year of age by 40 per cent, within a range of 30 to 50 per cent.

b) Reduce mortality rates among children one to four years of age by 60 per cent, within a range of from 50 to 70 per cent.

c) Reduce maternal mortality by 40 per cent, within a range of from 30 to 50 per cent.

With regard to expansion of services, the formulation of goals for coverage, and minimum concentration, is recommended.

3. Attain coverage of 60 per cent for prenatal care, 60 to 90 per cent adequate care at delivery, 60 per cent for postpartum care.

4. Attain coverage of 90 per cent of children under one year, 50 to 70 per cent of children one to four years, and 50 per cent of children of five years of age.

TO ATTAIN THESE GOALS THE FOLLOWING SHOULD BE UNDERTAKEN:

• Develop an intersectoral policy for family and maternal and child welfare. This policy should include measures to guarantee their civil and juridical rights, as well as regulations to ensure economic, social, and working rights. This plan should also promote during childhood and early youth adequate recreational activities and opportunities for education and vocational orientation. The policy should involve the execution of programmed activities in maternal and child health care.

This medical health program must be universal in coverage, efficiently operated, and readily accessible geographically, institutionally, and financially.

TO THIS END THE FOLLOWING MEASURES SHOULD BE CONSIDERED:

• Establish and/or strengthen within national health organizations in all countries of the Region the technical units responsible for activities in the field of maternal and child health and family welfare.

• Develop the program as a continuous whole. It must include the various activities necessary for the protection of the family and especially the mother and child; family life education, particularly for adolescents; the care of gynecological problems, including venereal disease; the early diagnosis and timely treatment of cancer of the cervix, uterus, and breast; offering families the opportunity—provided this is not at variance with national policies—to obtain adequate information and services on problems related to fertility and sterility; the care of both mother and child during pregnancy; care during labor and after-birth; and the care of the newborn and children through the various stages of childhood, but especially during the first year of life.

• Adopt systems for regionalization of services, based essentially on the principle of multidisciplinary teamwork, including empirical midwives, and on delegation of functions, with adequate training and supervision.

• Formulate programs or subprograms for specific health conditions within the maternal and child health programs when the magnitude of the problems and local and/or regional characteristics warrant them (examples: control of infant diarrheas, respiratory infections, cervical cancer, etc.).

- Promote programs of extension of maternal and child health and family welfare services when required by circumstances.
- Incorporate periodic and timely data on coverage of programs of maternal and child health and family welfare in the statistical system.
- Prepare an operational timetable for the coverage goals according to which the program will be extended progressively, with priority given to areas with greatest likelihood of reduction of risks.
- Stimulate the production, in each country or through a subregional framework, of medications, materials, and supplies for maternal and child health care.
- Create and expand regional and subregional courses for the training of personnel concerned with program direction and administration of maternal and child health and family welfare services.
- Establish, disseminate, and interchange technical standards in maternal and child health.
- Develop regional systems to accomplish these tasks by means of multidisciplinary teams, including midwives, which may delegate functions to adequately trained and supervised assistants.
- Develop professional and assistant personnel based on a system of continuous training.
- Encourage and conduct basic applied research directed toward improving the operational capacity of these services.
- Establish an efficient system of supervision based on a rational evaluation method.
- Encourage active community participation in each stage of the program.
- Utilize local resources to the greatest extent possible, for example, through development and operation of "mothercraft centers," nursery homes, day-care centers, and centers for education and nutritional recuperation, as a means of promoting and augmenting professional care of the mother during childbirth, and of the child.
- Develop and conduct short intensive courses for personnel in maternal and child health, preferably in rural areas and under current conditions of work, with the assistance of international experts working with local instructors who will ensure the continuation of the training activity.

POPULATION DYNAMICS

Present Situation

The situation of family health in the Region is characterized by high indices of mortality and morbidity of mothers and children consequent to multiparity. Among the most important causes are maternal morbidity and mortality from hemorrhages, infections, obstetrical trauma and malnutrition, and infant morbidity and mortality from malnutrition, enteric diseases, infectious diseases, and poor growth and development.

Social and economic factors also influence the high maternal and infant risks because of unfavorable effects on the physical state of the mother, as reflected, and the quality of obstetrical services. Some studies have demonstrated the reduction in maternal mortality that can be achieved with proper care, even in cases of high risk such as mothers of advanced age.

Recommendation

Formulate, within the national policy, plans and means which contemplate integral protection of the family by providing adequate information and services concerning problems related to fertility and sterility.

IN ORDER TO CARRY OUT THE ABOVE, IT WILL BE NECESSARY TO:

- Improve the registration and analysis of basic demographic data within existing services.
- Organize, provided it is in agreement with the national demographic policy, activities in order to make available to families willing to use them, services related to fertility and sterility.

a) Contribute to the reduction of illicit abortion.
b) Diminish maternal and perinatal risk associated with high parity, excessive age or youth of the mother, or inadequate intervals between pregnancies.
c) Reduce anxiety and fear consequent to the inability to plan the family as desired.

- Develop programs including the following activities:

a) Studies and research of the epidemiology, control, and medical care connected with problems of fertility, sterility, and high risk for mothers and infants.
b) Provision of fertility and sterility services in the context of maternal and child health, including public information and educational programs.
c) Medical demographic programs in pre and postgraduate professional education and technical training of professional and auxiliary personnel participating in the activities.

To the extent that fertility and sterility activities continue a part of the maternal and child health and family welfare policy of the countries, they will contribute toward producing the social and economic effects mentioned previously.

New attitudes, forms of conduct, and scales of values related to fertility have arisen as a result of the economic and social transformation occurring in the developing countries. The entities responsible for over-all planning of economic and social development must take these changes into account. Moreover, these entities may decide to adopt appropriate demographic policies when the process of economic and social change indicates such a policy is needed or desirable.

NUTRITION

Present Situation

Health and nutrition surveys carried out during the last few years throughout the Region clearly indicate that there are serious nutritional problems in the majority of the countries; these are related to economic level, education, environmental sanitation, health, and general standards of living. Protein-calorie malnutrition; nutritional deficiency anemias due to lack of iron, folic acid, and vitamin B_{12}; endemic goiter and cretinism; and hypovitaminosis A are serious public health problems. At the same time, cardiovascular diseases, diabetes, and obesity, all related to nutrition, also constitute public health problems and are the cause of growing concern in the countries.

Protein-calorie malnutrition causes high mortality and morbidity in children under five. In nine countries, representing 70 per cent of the population of the Region, mortality among children from one to four years of age is 10 to 33 times greater than in developed countries.

Studies carried out in eight countries show that 40 to 76 per cent of the deaths in children under five due to infectious diseases are associated with nutritional deficiencies. Prevalence of advanced malnutrition (II and III

degrees) ranges from 10 to 30 per cent among children under five years of age in 18 countries comprising 65 per cent of the population of the Region, from which it can be estimated that close to 5 million Latin American children at present suffer from advanced malnutrition. It is well known that malnutrition leads to physical growth retardation in children, frequently accompanied by mental retardation; in the adult it also reduces his work capacity.

Prevalence of nutritional anemias ranges from 29 to 63 per cent in pregnant women, from 14 to 30 per cent in non-pregnant women, and from 3 to 5 per cent in men.

Fourteen countries with 55 per cent of the population of the Region still have prevalence rates of endemic goiter ranging from 10 to 60 per cent.

In 13 countries, representing 58 per cent of the population of the Region, the prevalence of deficient serum levels of vitamin A ranges from 5 to 45 per cent.

Cardiovascular diseases are the main cause of death in 10 countries, and diabetes shows prevalence rates ranging from 11 to 48 per 1,000 inhabitants in several countries.

In 10 countries, the per-capita caloric availability is below 2,500 per day; in eight countries, the per-capita protein availability is less than 60 grams per day.

Food intake surveys show an average daily per-capita consumption under 2,500 calories in seven countries. The total daily protein intake per-capita ranges from 40 to 116 grams in 19 countries and in four the intake is less than 50 grams.

The degree of development of the nutrition services varies widely. A few countries have established adequate planning, management, and evaluation systems for nutritional activities which are an integral part of the health programs. Others present great weaknesses in their administrative processes, in particular with respect to the establishment and observance of technical standards for the provision of nutritional services. Very few have incorporated nutrition activities in maternal and child health services.

Sixteen countries have salt iodization programs; however, nine of them have not succeeded in effectively implementing an endemic goiter control program.

The enrichment of flour with iron and complex B vitamins is compulsory in 11 countries and optional in eight. Two countries are starting to implement programs for the enrichment of sugar with vitamin A.

Some countries of the Americas are carrying out programs to produce high protein content vegetable mixtures which are acceptable to the population and yet economical (Incaparina, Colombi-harina, Duryea, AK-1000). However, these programs provide but little coverage.

Although a few countries are currently implementing extensive supplementary feeding programs for vulnerable groups (mother and children), in the majority of them those programs have limited coverage and inadequate technical control.

During the last decade, most countries have undertaken programs for the redistribution and better and expanded utilization of land, training of agricultural personnel in the use of modern methods, and promotion of basic food production.

No country has a clearly defined system that makes it possible to periodically and effectively carry out epidemiologic surveys of the nutritional status of its population.

All countries of the Region present shortages of trained personnel in the fields of nutrition, dietetics, and food technology.

Moreover, nutritional problems lead to increased operational costs of health services, poor performance in school, and reduction of agricultural and industrial productivity. The various sectors involved in the development of a country—the economy, agriculture, health, and education—all suffer directly from the effects of malnutrition.

Practically none of the countries has formulated and implemented a definite and coordinated intersectoral food and nutrition policy aimed at fulfilling the nutritional needs of all population groups.

The factors governing the availability, consumption, and biological utilization of foodstuffs, which determine the presence or absence of nutritional diseases, belong to different areas of a country's development. Although the health sector receives more directly the impact of such problems and carries out specific activities to combat them, they cannot by themselves effectively solve them. Simultaneously with the nutritional and health education programs it becomes necessary to carry out supplementary feeding of the most vulnerable groups (mother and children), environmental health, immunization, etc., and other programs to raise educational and economic levels among the population so as to generate effective demand for foodstuffs. At the same time, agricultural and fishery production and food marketing programs should be implemented in order to obtain a supply sufficient in quality and quantity to meet the nutritional requirements of the population.

A point worth stressing is the need to bring about changes in economic structures and systems of land tenure in order to obtain significant modifications in the structure of demand for services. These changes will need to be accompanied by action to increase the available food supply. All these measures combined can ensure an improvement in the nutritional status of the population.

It is recognized that an adequate nutritional status and the satisfaction of demand for food are an inalienable right of people, and accordingly this right is established as an objective *per se*, independent of any purely economic consideration regarding a country's socioeconomic development.

Recommendations

In general:

1. Reduce the prevalence of nutritional diseases and achievement of an optimum nutritional status for the entire population.

More specifically :

2. Reduce the current prevalence of II degree protein-calorie malnutrition by 10 to 50 per cent (30 per cent regional average) and of III degree malnutrition by 75 to 95 per cent (85 per cent regional average) among children under five. In those countries where this is possible, targets could be set separately for infants and children one to four years of age.

3. Reduce the current prevalence of nutritional anemias by 30 per cent among pregnant women.

4. Reduce the prevalence of endemic goiter to below 10 per cent, and eliminate endemic cretinism.

5. Reduce the current prevalence of hypovitaminosis A by 10 to 50 per cent (30 per cent regional average) among vulnerable groups.

6. Reduce the current rate of increase in prevalence of diseases associated with overweight, namely, cardiovascular diseases, obesity, and diabetes.

IN ORDER TO CARRY OUT THE ABOVE IT WILL BE NECESSARY TO:

- Promote and contribute to the establishment of legislation to organize planning and technical support structures for the formulation of food and nutrition policies, and define principles and methods for the formulation and implementation of such policies.
- Promote and contribute to the formulation of biologically oriented national policies on food and nutrition and execute coordinated

intersectoral programs implementing such policies in at least 75 per cent of the countries.

• Strengthen technical nutrition units in the health structures as follows: at the central level (Ministries of Health), 100 per cent; and at the intermediate level, 60 per cent.

• Train personnel for nutrition services, as follows:

a) Increase nutrition specialists currently working as professionals in the health sector services (medical nutritionists and nutritionists-dietitians) by 50 to 90 per cent (70 per cent regional average).

b) Appoint the necessary number of full-time nutrition specialists in 100 per cent of the schools of nutrition and dietetics and in 80 per cent of the schools of medicine, public health, and nursing.

• Establish a complete and reliable system for the diagnosis and epidemiologic surveillance of the nutritional status in all the countries.

• Organize and execute programs for the prevention of nutritional diseases, promoting the active participation of the community with special emphasis on the following aims:

a) Establish guidelines for nutrition activities and incorporate these in the health services at all levels, particularly in maternal and child health programs, in 100 per cent of the countries.

b) Coordinate and achieve effective coverage in supplementary feeding programs for the vulnerable population groups in at least 50 per cent of the countries, and develop mass feeding programs.

c) Develop information and nutrition education programs, including consumer guidance, through mass media (TV, radio, press), and collaborate in their implementation. The participation of the organized community should be sought in this connection.

d) Promote, advise, and collaborate in the development of nutritional education programs offered throughout the entire educational system.

e) Establish effective programs for salt iodization and the use of iodized oil in all the countries of the Region where goiter presents a public health problem.

f) Promote the enactment of legislation, where needed, to assure effective fortification of selected basic foodstuffs with iron, vitamin A, vitamin B complex, protein, or aminoacids.

g) Incorporate nutrition activities connected with the prevention of cardiovascular diseases, diabetes, and obesity in the health programs of all the countries where these conditions constitute serious problems.

• Appoint at least one nutritionist-dietitian in all hospitals with 100 or more beds, in 80 per cent of the countries of the Region.

• Promote the development of programs for the production of low-cost conventional and nonconventional foods of high nutritional value, especially for weaning children, in accordance with the latest technological advances in food production.

• Promote the development of programs to simplify methods of food marketing, including cooperative systems, permitting both producer and consumer to enjoy more favorable prices for food products.

• Intensify research in the field of food and nutrition with emphasis on the following specific areas:

a) Research into simple techniques, procedures, and methods for periodically evaluating the nutritional status of the population; on the factors and characteristics that determine growth and development in children; methodological studies of different types of nutrition and food programs, including cost-benefit analyses of supplementary feeding and nutritional education programs and

of programs for prevention of endemic goiter, hypovitaminosis A, and nutritional anemias; epidemiologic studies on the relationships between nutritional status and infectious diseases and the prevalence of cardiovascular diseases and diabetes; and lastly, research on the development, production, and marketing of nonconventional foods of high nutritional value and low cost.

DENTAL HEALTH

Present Situation

Although there is no complete dental epidemiologic map of the countries of the Region, there is evidence of the magnitude of the problem of dental diseases, especially dental caries.

A study made in one country showed that 98 per cent of school-age children in the capital city, and 91.4 per cent of those in the adjacent rural areas, had caries; 25 per cent had orthodontic problems; and 24 per cent had incipient periodontic problems. Only 40 per cent of the population had access to dental services. Of the 410 dentists in that country, 76 per cent are in the capital city.

The dental survey conducted by the Institute of Nutrition of Central America and Panama (INCAP) showed a generally high incidence of caries in rural areas, with half the teeth affected by caries between 15 and 19 years of age, and two thirds of them lost by 40 years of age. In women between 15 and 29 years of age, the incidence of caries was higher among those who were pregnant.

Only two countries of Latin America supply fluoridated drinking water to more than 30 per cent of their population; two others do so for between 15 and 30 per cent. In the remaining countries coverage is provided to less than 13 per cent of the population.

In 1971, only three countries in the entire Latin America and Caribbean area had more than 3.5 dentists per 10,000 population, whereas more than 12 countries did not even have an average of 1 dentist per 10,000 population. The mean was 1.9 dentists per 10,000 population.

Only a few countries have increased the number of graduates and of students enrolled in their schools of dentistry by an acceptable percentage.

For the most part, dental professionals are concentrated in urban areas, which limits the care that can be provided in smaller towns in rural areas, where about half the population of Latin America and the Caribbean lives. The present professional practice is geared to cover a small percentage of the people in the large urban centers.

The dentist/dental-assistant ratio is about three to one. There are approximately 100 schools of dentistry and fewer than 30 regular courses for the training of auxiliary personnel.

To complete the dental health picture, there is no organized marketing of fluoride products in the Latin American areas; there is a need for research to simplify dental materials and equipment; the dental equipment used in the university training courses is out of date; there is a shortage of personnel in the basic health sciences; and several Ministries of Health have no dental administration units in their national infrastructure.

Recommendations

1. Reduce dental morbidity, especially of caries as a prevalent disease and one that compounds the dental problem, and modify the components of the morbidity index.

2. Increase dental care coverage in both urban and rural areas, giving priority to care for children.

3. Achieve water fluoridation in cities of 50,000 or more population and develop as far as practicable a system for fluoridation for other areas.

4. Intensify and stimulate dental education activities in all health programs and introduce dental education into school curricula for children and adolescents.

5. Restructure occupational categories with an increase in the ratio of auxiliaries to professionals and diversification of manpower according to national and local situations.

6. Establish various models of dental practice ranging from individual practice to integrated teamwork.

7. Promote and stimulate the training of intermediate-level personnel whose inclusion in the dental health team will enable real and significant progress to be achieved against the most prevalent dental disorders during the next decade.

TO ACHIEVE THESE GOALS IT WILL BE NECESSARY TO:

• Define a dental health policy and create and/or strengthen dental units with regulatory, supervisory, and evaluation responsibilities at the national level, in the Ministries of Health of all the countries.

• Give priority to programs for the supply of fluoridated drinking water to at least 40 per cent of the population, and treat table salt with fluoride in countries that have centralized salt distribution systems or other systems whereby the benefits of preventive measures of proven effectiveness could be extended to communities not at present covered.

• Develop institutions and programs for the training of dental health personnel, special emphasis being laid on quality, productivity, and coverage, in accordance with the need for dental care services and conditions in the different countries. The personnel to be trained should be diversified—professional, intermediate and auxiliary—and trained to work as a team together with laboratory technicians and equipment maintenance personnel. The goal is to have a corps of at least 75,000 dentists by 1980 (with an approximate dentist/population ratio of 2 per 10,000), and of 82,000 auxiliaries (with an auxiliary/dentist ratio of 1:1), so as to make it possible by that date to have approximately one dental "unit" per 3,500 persons.

• Develop regional programs for the countries of the Americas, to train instructors for intermediate-level and auxiliary personnel, so that they may return to their countries and organize courses in either the dental or the public health schools according to the decision of each country.

• Promote programs for the design of simplified equipment and instruments and for the study and control of dental materials and of different dental care models, with a view to reducing costs and increasing the efficiency of dental services.

• Promote administrative, applied, and operational studies on personnel, tasks, techniques and equipment, time and motion, and cost-benefit that may help to increase the productivity of dental services; and establish a regular system for the international coordination of the design and use of dental health systems.

• Support comprehensive studies on the planning, design, and administration of regional dental health systems, including an analysis of the health situation, increase in resources, institutional development and action, and mechanisms for dental innovation and evaluation.

• Promote epidemiologic and basic research on the prevalence, causes, and prevention of

caries—for example, to ascertain their microbial origin and to study the possibility of developing preventive vaccines.

• Promote nation-wide epidemiologic studies of oral diseases in those countries where none have been undertaken, and supplementary studies in others, using the same methodology so as to make comparative studies possible. Request the Pan American Health Organization to determine, through an expert committee, the universal pattern to be followed by national surveys in order to obtain all the required information by the end of the decade at the latest.

• Intensify dental health education activities.

• Strengthen the activities conducted by national centers in specific areas, such as dental materials, epidemiology, pathology, teaching, and applied research, etc., and initiate them where conditions are suitable.

• Take measures for the programmed and rational integration of the available professional staff not yet incorporated into the dental care services.

ENVIRONMENTAL HEALTH

Present Situation

Environment and ecology were objects of special governmental attention during the last decade and will continue to be topics of primary importance throughout the 1970's, as they reflect equally important public concerns and needs requiring that environmental health programs be viewed in their proper perspective, that they function within the bounds of appropriate limits and reference points, and that the options of such programs be outlined and costs estimated.

Justification for programs to improve and control the quality of the environment may be found in the unprecedented results obtained by public services supplying water to urban and rural areas in many countries of the Region. These achievements in turn have strengthened the internal national organizations that support environmental health services in their endeavor to improve the quality of air, water, soil, and foodstuffs, and to anticipate possible damage to the environment from the various products and by-products of modern technology.

Water Supply and Sewerage

In 1960 only 60 million people, or 59 per cent of the urban population of the Latin American and Caribbean countries, benefited from a public water supply system, and only 29 million, or 28 per cent, had a public sewerage system. In rural areas less than 8 per cent of the population had access to public water supplies.

In 1961 the Governments of Latin America and the Caribbean area committed themselves to providing water and sewerage services to 70 per cent of the urban population and to 50 per cent of the rural population by 1971. The urban plan was completed satisfactorily; by the end of 1971 the results obtained clearly indicated that the program was successful. Of the total urban population—estimated at 155 million—more thaan 121 million (78 per cent) benefited from public water services. In the same period 59 million (38 per cent) of the urban population benefited from public sewerage services.

The rural program more than duplicated existing water services from 1960 to 1970. In 1971 it reached 31 million people, or 24

per cent of the total rural population estimated at 131 million. Although the rural goals were not fully achieved, the effort constitutes a solid basis for future rural progress. Health education in elementary schools is seen as a useful device to ensure the maximum effective use of rural water services in the interest of health.

The water and sewerage programs executed in the 1960 decade represent a total investment of US$2.6 billion, of which about $1.7 billion was contributed by the countries themselves, matched by loans from international credit organizations.

Collection and Disposal of Solid Wastes

The need for efficient solid waste collection and disposal services is particularly urgent in metropolitan areas and large cities. In Latin American and Caribbean countries the responsibility for garbage collection and disposal generally falls on the individual municipal governments. The majority of the cities have sufficient legal authority to regulate garbage collection and disposal within their jurisdiction, but the metropolitan areas surrounding them have only now begun to formulate policies in accordance with the scope of their responsibilities.

Programs expanding and improving these services were implemented in the last decade, but no specific goals were set. Currently, an estimated 75 per cent of the urban population has daily garbage collection, but the methods of final disposal are inefficient. In most cases, garbage is dumped in open fields at some distance from the city itself. Only in a few of the larger cities are solid wastes treated in incinerators or used in the production of compost.

A sound managerial, administrative, and financial policy, together with technical planning of systems, would contribute greatly to improving existing systems of collection, transfer, and disposal of solid wastes.

Environmental Pollution

Environmental pollution increases rapidly in heavily populated and industrialized areas. Water pollution is increased by the discharge of domestic wastes. Industrial wastes primarily affect air and water. Soil pollution results mainly from indiscriminate or excessive use of pesticides, fertilizers, and other chemical substances. Nevertheless, many pollutants entering one environment may in time be transmitted to the others, thus affecting simultaneously or in turn the water, air, and soil. This fact suggests the need for coordination of pollution control programs.

Water Pollution

The information available on water pollution, although limited, emphasizes the existence of the problem and its tendency to become more serious. It may be concluded in general that construction of sewage treatment plants and other control measures have not kept pace with the actual needs. For this reason, the authorities are taking into consideration the effects of urbanization, industrialization, and the like on the environment, so that possible damage may be anticipated and the necessary control measures established.

Air Pollution

Experience gained in developed countries reveals that Latin America and the Caribbean cannot escape the consequences of air pollution arising from urban and industrial growth, unless prompt action is taken. As the number of vehicles and the use of fuels increase, the amount of carbon monoxide, nitrogen oxides, sulphur, and other chemical pollutants discharged in the air also increases.

Available information on the effects of these substances on human health reveals that they are especially harmful to the young, the elderly, and the weak. To determine actual incidence rates it is necessary to conduct more epidemiologic studies. Other harmful effects

caused by air pollution are the destruction of vegetation, metallic corrosion, damage to paint, and reduced visibility. Generally speaking, too little attention has been paid to economic loss and health danger directly attributable to air pollution.

The past decade saw the creation of the Pan American Air Pollution Sampling Network, consisting of 52 stations in 23 cities throughout Latin America and the Caribbean, which measure the concentration levels of settled dust, suspended dust, and sulphur dioxide (SO_2) in the air. The results obtained provide a preliminary idea of the situation and confirm the need for introducing pollution control programs, at least in major cities.

Soil Pollution

The soil is polluted by chemical, domestic, commercial, industrial, or municipal wastes and sometimes even by agricultural products, including pesticides and fertilizers. Many of these pollutants enter the food chain and pose a serious threat to humans. In small doses ingested over an extended period of time, these pollutants cause long-term effects not immediately recognizable in humans, but whose injurious effects have already been observed in other life forms.

Noise Control and Other Stresses

Noise may be defined as the emission of sound that produces stress and alters behavior in human beings. This environmental stress, which increases with industrialization and mechanization, is changing from a mere occupational hazard and becoming an additional hazard to the population at large. These hazards to man include chronic deafness, disturbance of leisure and work time, irritability, and other stresses which jeopardize good health.

The effect of excessively high population concentration, vibrations, accelerated work pace, and other types of stresses has been studied in the work environment, but little has been done to evaluate the effect such stresses might have when less intense or occurring at home. It is necessary to obtain a more complete understanding of their effects, separately and jointly, if their importance is to be determined and standards for their control formulated and applied.

Recommendations

Water Supply and Sewerage

1. Provide water supply through house connections to 80 per cent of the urban population or, as a minimum, reduce that population currently without water services by 50 per cent, FOR WHICH PURPOSE IT WILL BE NECESSARY TO:

- Classify potable water supply services according to the grade of compliance with the norms of quality and efficiency of operation with the object of giving the best services to the population.

2. Provide water supply to 50 per cent of the rural population or, as a minimum, reduce that population without service by 30 per cent.

3. Provide sewerage service to 70 per cent of the urban population or, as a minimum, reduce that population without service by 30 per cent.

4. Provide sewerage service or other sanitary means of excreta disposal to 50 per cent of the rural population or, as a minimum, reduce that population without service by 30 per cent.

TO ACHIEVE THE PROPOSED GOALS, IT IS NECESSARY TO:

- Develop national or regional programs for supplying water and sewerage services that are compatible with economic development plans and accelerate institutional development in order to strengthen the responsible agencies and assure sound administrative policies.
- Develop human resources required to

carry out the plans and achieve the goals set by regular and intensive education programs.

• Prepare preinvestment studies and compile information needed to obtain domestic and foreign financing; draft loan applications; and develop methods based on adequate rates policies and sound administrative procedures.

• Develop programs with a view to setting standards for water quality control.

• Utilize techniques of "mass approach" and concepts of community self-help to provide water in rural areas and use of revolving funds to finance rural water supply programs.

• Establish a common denominator definition of urban and rural populations in order to facilitate comparability of data between countries and on a regional basis.

• Include preventive planning and training of personnel responsible for providing potable water supply and sewerage services in the routine activities of the corresponding agencies, in order to be able to meet emergencies created by catastrophies and national disasters.

• Ensure that programs of rural housing, agrarian reform, etc. emphasize as a primary objective the provision of potable water and excreta disposal.

• Promote and intensify health education programs through the whole educational systems, especially primary and secondary schools, in order to achieve the maximum effective use from water supply services and sanitary means of waste disposal.

Collection and Disposal of Solid Wastes

Establish satisfactory and suitable systems for the collection, transportation, processing, and disposal of solid wastes in at least 70 per cent of the cities with more than 20,000 inhabitants.

TO THAT END IT WILL BE NECESSARY TO:

• Develop a legal and administrative structure to focus national efforts on solid waste disposal in the metropolitan areas and major cities, and develop national or regional plans to ensure that funds are allotted and the proposed goals met.

• Accelerate the development of institutional changes when necessary to strengthen the agencies and guarantee sound administrative procedures; conduct preinvestment studies and compile the necessary information for drafting of requests for internal and international financing.

• Train the personnel needed to carry out the plans and attain the goals through regular and intensive educational programs and adapt, develop, or incorporate technology in order to design economic means for collection, treatment, and disposal of solid wastes.

• Organize educational and information programs to win public support in protecting the environment and help local groups to conduct systematic clean-up campaigns or help in garbage collection and removal operations. Also, establish information systems to determine priorities and trends and anticipate demands for services, evaluate program operations, and develop and modify plans for solid waste removal programs in accordance with the goals proposed.

Air, Water, and Soil Pollution

1. Establish policies and enact the necessary basic legislation for improving, preserving, and controlling the quality of water, air, and soil resources.

2. Formulate and execute programs for water pollution control in river basins, coastal waters, and other water bodies where industrial development, urbanization, or other considerations indicate the need for such measures.

3. Formulate and execute air pollution control programs in urban areas with more than 500,000 inhabitants and in other cities where industrialization or other special considerations justify the need for such measures.

4. Formulate and execute soil pollution control programs in urban and rural areas where levels of development, industrialization, and land usage so warrant.

TO THAT END IT WILL BE NECESSARY TO:

• Develop basic policies and legislation for the control of air, water, and soil pollution and formulate regional and national pollution control plans, coordinated with national development programs, to ensure proper management of funds and attainment of proposed goals.

• Improve existing institutions or, where necessary, establish new ones for the administration of air, soil, and water pollution control programs, and develop the human resources necessary to carry out the programs and achieve the goals through regular, intensive educational programs, adapted to and developing and incorporating in them modern technological methods.

• Establish information systems by which air pollution data may be compiled as well as improve and expand the Pan American Air Pollution Sampling Network and the local and national surveillance systems.

• Investigate the sources of pollutants and study their long-term effects on the environment and on human health, directly and indirectly. Encourage feasibility studies of low-cost waste treatment methods, such as oxidation ponds for the treatment of municipal and industrial wastes.

• Determine the social and economic impact of water pollution and provide the necessary financial and technical assistance for its control.

• Prepare recommendations and guidelines for the initiation of water, air, and soil pollution control until such time as national and international standards of quality are formulated and implemented.

• Prepare compilations of selected existing and prototype pollution control legislation and regulations.

Noise Control

1. Develop criteria for the practical regulation of noise, and implement control measures.

2. Recognize noise as a stress on public health in programs of area planning, industrial hygiene, and traffic regulation.

TO ACCOMPLISH THE ABOVE, THE FOLLOWING WILL BE REQUIRED:

• Evaluate the harmful effects of noise on human health and well-being with respect to the hazard posed to both the individual and the community.

• Evaluate the sources of noise in important urban areas and in industrial complexes and formulate recommendations and guidelines or revise existing ones and apply them in programs for reducing noise and its effect on human health.

• Initiate action in the control of excessive noise by determining its sources, thereby developing a practical procedure for operations in this field. (Restriction of horns and open mufflers in automobiles, removal or muffling of noisy machines, acoustic insulation of walls and floors, use of silencing devices, etc.)

Control of Other Stresses

Establish criteria for the practical regulation of stresses such as excessive vibration, accelerated pace of work and life, congestion, and other modern hazards and inconveniences, and include means for their control in public health programs.

TO THAT END IT WILL BE NECESSARY TO:

• Conduct studies on congestion, pace, routine, and other factors of life in an urban environment; prepare reports as to their effects on physical and mental health; and devise preventive and corrective action.

• Identify and examine sources and prev-

alent forms of vibrations affecting workers and the general public and establish standards on limits of tolerance to them.

• Remain up to date on technological developments posing new threats to human life, such as lasers, ultraviolet frequency waves, and ionizing radiation in order to adopt appropriate means of protection.

• The frequent occurrence of natural disasters and other catastrophes in the Region has imposed on Governments, and especially on the health sector, serious responsibilities in coping with them. The task can be broken down into phases:

a) prevention and action, including the improvement of alerting systems, observation, and communications on a worldwide, regional, and national scale, planning and creation or improvement of national and international structures and lines of operation for the solution of urgent problems at the critical stage;
b) reconstruction, covering the study of special procedures by which the United Nations, international financing agencies, and countries can provide appropriate technical and financial aid through a system which can be put into operation in a short space of time;
c) analysis of weak points in the infrastructure, which are very common in the developing countries and tend to collapse in emergencies. In this connection United Nations bodies and financing and technical assistance agencies in the various countries might urge Governments to make diagnoses, establish priorities, and finance specific projects.

OCCUPATIONAL HEALTH AND INDUSTRIAL HYGIENE

Present Situation

The incidence of occupational injuries and disease in Latin America and the Caribbean is six to 10 times higher than that reported in highly industrialized countries. With a labor force of approximately 94 million in 1970, occupational illnesses reached significantly high levels. Partial studies of various industries disclose that in the case of lead, more than 60 per cent of the workers exposed suffered from lead poisoning. In the arsenic industries more than 80 per cent of the workers showed symptoms of poisoning and in chromium metallurgy 50 per cent had dermatitis, while 10 per cent showed nasal septum ulceration or perforation. In some countries an increase in deaths was reported due to misuse of pesticides. In spite of the rapid increase of occupational risks associated with the use of these and other toxic chemicals and with industrialization, such risks have not been adequately analyzed as regards their significance to public health and the economy.

In addition to the risks from chemical products, workers are exposed to excessive heat, cold, pressure, noise, inadequate lighting, and other factors adversely affecting industrial efficiency and productivity and the well-being of the employees.

At the beginning of the 1970 decade there were 14 national programs in industrial hygiene in different stages of development and effectiveness in the Latin American and Caribbean countries. Only four were considered reasonably adequate; three were regarded as fair and four as limited. Programs were in their initial stages in two countries, and in one country a private industrial association was carrying out an occupational health program. Even in the countries with reasonably adequate programs, the needs of industry and employers exceeded the available services.

Recommendations

1. Protect, by 1975, at least 40 per cent of the working population exposed to risks * and 70 per cent by 1980 in the countries with occupational health programs already in operation.

2. Protect, by 1975, at least 25 per cent of the working population exposed to risk * and 50 per cent by 1980 in the countries now ready to start occupational health programs.

TO ACHIEVE THE ABOVE GOALS IT WILL BE NECESSARY TO:

- Define basic occupational health and industrial hygiene policies and legislation for use at all levels of Government, and establish or improve programs for monitoring, evaluating, preventing, and controlling risks to health in the work environment, and for improving work performance utilizing modern techniques such as occupational psychology, work physiology, and ergonomics.
- Emphasize the importance of taking action to control occupational hazards where the measures are evident, such as providing ventilation to prevent inhalation of silica, heavy metals, and organic solvents.
- Assure sufficient and adequate assignment of personnel and other resources to enable achievement of the established goals. Create new agencies, and improve existing ones with the capacity needed to carry out occupational health and industrial hygiene programs, in collaboration with other government agencies, as well as develop sufficiently trained personnel, at professional, intermediate, and other levels, through appropriate educational programs in order to ensure more active participation of the employer and employee sectors.
- Establish information systems to evaluate occupational risks and develop methods to prevent accidents or diseases among workers and other persons exposed to such risks. Determine the economic and social costs and benefits of occupational health and industrial hygiene services.
- Recommend to the Governments that they adopt measures designed to ensure that the establishment of policy in the field of occupational health will be the responsibility of Ministries of Health, in cooperation with other Government agencies responsible for supervising its execution.
- Obtain assistance from financial or social security institutions for studies leading to the determination of these economic and social costs and benefits.

The targets suggested represent desired over-all regional attainments. For some countries with programs in operation the targets may seem too high, especially by 1980; for others it may be possible to provide specialized occupational health services at a higher level than 70 per cent by 1980.

*Working population potentially at risk as determined by surveys or other means.

HEALTH ASPECTS OF REGIONAL DEVELOPMENT

Present Situation

The concept of regional development implies the interaction of conditions predominating in the rural and urban environment as elements of an integral society. The solution of physical, social, and economic problems in the rural areas will contribute not only to improving the condition of the rural population, but will also benefit the urban population as well. Determination of the over-all demand of health services and the possibility of providing them is therefore fundamental to any viable plan for regional development.

Several river basin development programs, designed as multipurpose projects, have evolved in Latin America and the health authorities have been successful in that, in the majority of cases, the health aspects of the various projects were taken into consideration. Presently, a series of plans for river basin development and other regional development projects are under study and it is necessary to define quantitatively the needs of the health sector, evaluate the impact of the projects on health, and determine the costs and benefits of the measures required to prevent damage. At a later stage, it will be necessary to put into effect the measures recommended in these regional development plans.

Recommendation

Establish a policy through which the health authorities will participate on an integral basis in the definition, formulation, execution, and evaluation of each regional development project.

TO CARRY OUT THE ABOVE TARGET IT WILL BE NECESSARY TO:

- Define a policy and strategy so that the health sector may participate directly in all pertinent aspects of regional development projects and prepare the respective feasibility studies for the health sector so as to support development plans in the most effective manner.
- Promote, support, and carry out professional education programs in environmental matters through formal postgraduate courses, short courses, seminars, in-service training, and dissemination of technical information, with special attention to the development and adaptation of new technology.
- Establish close contact with planning officials to provide information on environmental health, which is required in integral planning, and promote and carry out public information programs with a view to obtaining support of the population for inclusion of health program elements in regional development projects.
- Determine the marginal costs of expansion and health services that may be necessary in regional development projects and include such costs in the budgets of the development projects.

ANIMAL HEALTH AND VETERINARY PUBLIC HEALTH

Present Situation

In Latin America in general, and in certain geographic areas in particular, some of the most prevalent human diseases are acquired directly from animals. These zoonoses also cause a serious diminution in the available supplies of protein of animal origin, which are essential to offset the trend in human malnutrition in the Region. It is expected that proper control of foot-and-mouth disease and of the major zoonoses will significantly increase the availability of animal protein to 4.4 grams per person per day in Latin America, which will bring about a 50 per cent increase in the present supply.

Canine rabies is widespread in the Americas. The incidence of rabies in man increased in the past decade, and reached 292 cases in 1970, as opposed to 178 cases in the period 1947-1956. The main carrier of the disease (except in Canada and the United States) is the dog (21,300 cases reported in 1970), which is also the main vector. Dog bites (1,220,000 exposed persons in 1970) are another problem which calls for postexposure anti-rabies treatment of a large number of

persons bitten (360,000 vaccinated in 1970). *Bovine rabies*, transmitted by vampire bats, is endemic from northern Mexico to northern Argentina. It is responsible for the death of 500,000 head of cattle each year, which represents a loss of more than US$50 million.

Brucellosis is perhaps the most important zoonoses from the standpoint of health and the economic losses. It is present in all the countries of the Americas and its morbidity varies greatly. Available information indicates 8,000 new human cases each year in Latin America alone. The infection rate in cattle is highest in the major milk sheds, where it reaches 25 per cent. Brucellosis in goats is the main source of human infection in three countries where the caprine infection rate ranges from 7 to 21 per cent. Porcine brucellosis also constitutes a serious human health problem, and data from 10 countries in the Region show that the morbidity rate ranges from 4.6 to 48.0 per cent.

Bovine tuberculosis is endemic in most Latin American countries, where the infection rate ranges from 0.5 per cent in some to 20.0 per cent or more in others. In some countries in which cultures from human patients are typed, the presence of mycobacteria of bovine origin has been confirmed in from 6 to 26 per cent of the samples.

Hydatidosis causes serious economic and health problems in five countries, which account for more than 56 per cent of the human population and more than 70 per cent of the cattle production of Latin America. In the affected areas, the prevalence of *Equinococcus granulosus* in dogs ranges from 30 to 60 per cent. The same or higher rates for hydatidic cysts are found in cattle, principally sheep, and also in man. Some areas of the highly infected countries have rates as high as 84.3 per 100,000 inhabitants. The losses in three countries, where the disease is very prevalent, are estimated at more than US$500,000 per year, and this is solely for the hospitalization of patients.

Leptospirosis is widespread in the Hemisphere, where human and animal cases occur constantly. The distribution of the disease is not well known because of lack of information. However, there are countries in which the infection rate is 14.2 per 10,000 inhabitants and the fatality rate in hospitalized patients is 40 per cent.

Equine encephalitis in the past decade became a real threat to the health and the economy of Latin American countries. In addition to Eastern and Western encephalitis, which are prevalent in many countries, there has been an alarming advance of the Venezuelan encephalitis virus in the Caribbean area, the Gulf of Mexico, and Central America, extending as far as Ecuador and Peru. This has given rise to disastrous situations in several epizoodemic outbreaks occurring in recent years. In the last three years the recorded number of human cases exceeds 50,000, and it is estimated that more than 150,000 horses have died.

Foot-and-mouth disease is endemic in all the countries of South America except Guyana, French Guiana, and Surinam. In the infected countries, the morbidity rate in cattle varies from 30 to 50 per cent. The multinational foot-and-mouth disease control program, which is at present being undertaken by South American countries, is supported by international loans for its development. The total amount of loan funds, plus the local investments, will amount to just over US$350 million in the next five years.

Except in a few countries, animal health and veterinary public health activities have so far been very limited and somewhat regional in nature. There is very little awareness of the true prevalence of the zoonoses and of their effect on human health and the economy of the countries. National plans for the control of these diseases usually lack an appropriate infrastructure and supporting services. There is a shortage of qualified professional health workers for planning, administration,

epidemiologic evaluation, and statistics. In many countries the situation is even more difficult because of the lack of technical, material, and financial resources.

Recommendations

1. Reduce the prevalence of all zoonoses, expand the areas presently declared free of them, strengthen surveillance systems, improve methods of detection, establish new laboratories and strengthen existing laboratories, increase the production and supply of vaccines, develop new effective immunizing agents, and increase the personnel of veterinary medical services.

2. Promote, reinforce, and strengthen animal health and veterinary public health services so as to ensure proper coordination between the programs of the Ministries of Health and Agriculture in the countries.

FOR THAT PURPOSE IT WILL BE NECESSARY TO:

• Establish or strengthen the relevant units within each Ministry. This will make it possible to establish and consolidate programs for the control of zoonoses and foot-and-mouth disease, to strengthen and coordinate operational epidemiologic research activities and coordinate the reporting of cases of animal diseases, and to conduct integrated control programs and those of hygiene of foods of animal origin. Funds for the development of the veterinary medical service infrastructure and the training of manpower are essential.

3. Provide adequate additional resources for the specific tasks of the Pan American Zoonoses and Foot-and-Mouth Disease Centers, in order to achieve maximum success in their cooperation with the countries of the Region.

• The strengthening of these Centers will enable their activities to be intensified. Their expansion should be directed toward the framing of concrete programs establishing true priorities in the field of zoonoses within each country. Once these programs are established, the Centers should give all the technical advisory assistance possible, covering all the various aspects of each disease.

4. Control and eventually suppress canine rabies in the main cities of Latin America, with a view to eradicating human rabies in those areas.

TO REACH THIS GOAL, IT WILL BE NECESSARY TO:

• Establish programs for the regular vaccination of 80 per cent of the dog population and the control of stray animals, in order to reduce the prevalence of the disease by at least 50 per cent in a period of five years and to eradicate it in 10 years and thus eliminate human rabies.

• Continue to promote research on the part of the Pan American Zoonoses Center, aimed at finding antirabies vaccines for human use which would give an absolute guarantee of the elimination of all risks in preventive antirabies treatment.

5. Control and/or eradicate animal brucellosis and eradicate the infection in man, FOR WHICH PURPOSE IT WILL BE NECESSARY TO:

• Establish and conduct national control and/or eradication programs with appropriate financial support from the country and from international lending agencies. Countries in which the prevalence is 1 per cent or less should have completed eradication of the disease during the decade, and countries in which prevalence is as high as 25 per cent will have reduced it to less than 2 per cent. The disease in man will be prevented by means of activities aimed at the control of sick animals and of their products in order to ensure appropriate handling and processing.

6. Control and possibly eradicate bovine tuberculosis throughout the Americas, FOR WHICH IT WILL BE NECESSARY TO:

• Establish and/or strengthen bovine tuberculosis control and/or eradication programs in areas with the highest prevalence of the disease, with appropriate financial support from the country and from international lending agencies. It is expected that by the end of the decade countries in which the prevalence of the disease is 1 per cent or less will have achieved eradication. Countries in which the prevalence rate is higher (up to 20 per cent) will have succeeded, as a result of national programs, in substantially reducing the disease and will have been able to establish modified, low-prevalence (1 per cent) areas which will pave the way for eradication.

7. Reduce the prevalence of human and animal hydatidosis and establish preventive programs in areas known to be infected in the Hemisphere.

TO THAT END IT WILL BE NECESSARY TO:

• Conduct pilot programs for the purpose of developing appropriate procedures for controlling this disease, in accordance with local needs of each country; establish national control and preventive programs based on financial support from international lending agencies in those countries that have defined their procedures and policy for the control of this disease; undertake measures for the control and improvement of slaughterhouses and public and private places in which animals are slaughtered for consumption in infected areas; and take steps to protect the inhabitants of these areas.

8. Know the magnitude of the problem and reduce the incidence and prevalence of leptospirosis in man and in animals.

FOR THIS PURPOSE IT WILL BE NECESSARY TO:

• Organize epidemiologic studies designed to accurately define the affected areas. Activities must be undertaken to protect occupational groups at high risk to this disease and develop intensive training of personnel for these activities.

9. Reduce the incidence and prevalence of equine encephalitis in the infected countries, particularly in the area of influence of the VEE virus (Caribbean basin, Gulf of Mexico, and adjacent countries).

TO REACH THIS GOAL, IT WILL BE NECESSARY TO:

• Expand the activities of control programs in all the affected countries so as to ensure the regular vaccination of 80 per cent of the susceptible horse, ass, and mule population; encourage ecological and epidemiologic research on a national scale and on a cooperative basis between the countries of the affected area; and train personnel in laboratory diagnosis and epidemiologic studies.

10. Control and eventual eradication of foot-and-mouth disease in South America and prevent the introduction of the disease into the countries of the disease-free area.

IN THE INFECTED AREA IT WILL BE NECESSARY TO:

• Conduct and strengthen national programs and coordinate their activities so as to ensure a smoothly run campaign at the continental level. Research must be continued with a view to improving the effectiveness of vaccines. In the disease-free area prevention of the disease will have to be strengthened through national programs established within a unified regional framework, capable of ensuring effective surveillance and with sufficient resources at their disposal to be able to eradicate any outbreak of the disease. Part of this policy will consist in the implementation of a surveillance and control program in the Panama and Colombia border area, with a view to its expansion in the parts of those two

countries where the new stretch of the Pan American Highway is to be built.

• Give a multinational approach to the control of zoonoses and foot-and-mouth disease in order to ensure possible future eradication of those diseases from the Hemisphere and to facilitate freer trade in food and livestock products within the Region and with countries outside it.

11. Control the zoonoses which calls for, apart from technical elements, direct participation by the community.

• The education of the community represents one of the most decisive factors in the success of any attack on the zoonoses. Public information campaigns aimed at securing the active participation of the community constitute indispensable factors in all human and animal health programs. Such combined measures are particularly valid in the rural areas, where determined action must be taken to control the zoonoses.

12. Epidemiologic surveillance of rabies, encephalitis, foot-and-mouth disease, and vesicular diseases has made it possible to judge how extremely important it is that countries be informed of the course and development of diseases that are transmitted from animals to man in the various countries of the Hemisphere. Such notification and diagnostic procedures should be extended to other zoonoses such as brucellosis, tuberculosis, leptospirosis, etc.

• Note is taken of the urgent need to have full information and technological resources capable of ensuring early diagnosis of exotic diseases which may cause enormous economic losses.

• Epidemiologic surveillance is not limited to the health aspect alone, but is also concerned with economic factors of the highest importance. Livestock losses represent an effective reduction in animal protein production.

CONTROL OF THE USE OF PESTICIDES

Present Situation

Available information shows that vast quantities of pesticides of all kinds are used in all countries of the Hemisphere and that the indiscriminate use of these substances is a major concern to Ministries of Health. The countries of the Americas have also reported intoxication and deaths caused by pesticides, which are classed as occupational, accidental, and suicidal.

Although laboratory confirmation of the hazardous effects on the general population of ingestion of food heavily contaminated by the use of pesticides is essentially non-existent, there is no question that intoxications and deaths in both human and animal populations are on the increase and are taking serious toll of human and animal life. The accidental deaths of children and other individuals ingesting pesticides that are sold and distributed without proper identification or warning is absolutely unjustifiable. This form of death is very common and appears to be becoming an accepted hazard.

The indiscriminate use of pesticides may be expected to continue throughout the decade. In addition to the substances already in use, new products are being developed at a very fast rate. Minor formulation alterations, usually of a commercial nature, which include combinations of all types of pesticides claiming to offer a wider spectrum of activity, will also add to the problem, unless the scientific application of such agents is enforced.

Most of the countries in the Americas have adopted legislative measures of some kind to

control the indiscriminate use of pesticides. However, because of difficulties in securing financial and other necessary support to enact and enforce the legislation, the proposals remain largely inactive.

A number of countries in the Region are performing residue analyses on a limited scale and several have laboratory facilities to conduct limited pesticide assays to support legislation. However, the best possible use of these laboratories is not being made because of the lack of qualified personnel and adequate equipment.

The setting of international tolerance standards for pesticide residues in tissues and plants is becoming an increasingly important effort in this field. As these international tolerance standards are developed, adherence to such norms will have to be enforced, not only to protect the health of humans and animals but also, as an indispensable factor, to enable international trade in food to continue.

Recommendation

Endeavor, during the decade, in each of the Latin American and Caribbean countries to reduce intoxications and human deaths caused by the indiscriminate use of pesticides.

TO CARRY OUT THE ABOVE IT WILL BE NECESSARY TO:

- See that all countries formulate a national policy and enact and strictly enforce legislation to control the use and distribution of pesticides.
- Create national committees, composed of representatives of the Ministries of Health, Agriculture, Commerce, and other relevant ministries and institutions, to establish standards for the control of pesticides and programs of activities to be developed by the bodies responsible for ensuring the implementation of these standards.
- Participate in international cooperative efforts to assure the safe and scientific application of pesticides. The development and use of pesticides of low toxicity, easily degradable in the environment, should be encouraged.
- Establish clear standards for the wording of labels and the types of containers destined for pesticide distribution.
- Establish and strengthen national centers with fully equipped laboratories in strategic positions in each country to support the enforcement of legislation on pesticide analysis.
- Establish as soon as possible, until such recommended legislation can be enforced, centers to train technical personnel in modern procedures for analyzing pesticide residues.
- Encourage research on the early diagnosis and appropriate treatment of intoxications from pesticides and recommend the inclusion of such knowledge in the curricula of medical schools or faculties.
- Provide government services and educational institutions with technical assistance through multidisciplinary teams experienced in analytical, operational, agricultural, health, and environmental aspects of pesticide management.

FOOD QUALITY CONTROL

Present Situation

During the past decade, food production levels in the Latin American countries, already low, remained virtually stationary while imports steadily increased. In actual fact, these countries are producing only a small fraction of the potential capacity of their natural resources. Furthermore, a great amount of food destined for consumer use is being destroyed and wasted through decomposition and contamination due to inadequate or improper transportation, processing, refrigeration, stor-

age, or commercial distribution. Control measures and legislation relating to food quality control and food hygiene have failed to keep pace with the rapid technological development of the food industry and have thus compounded the hazards of contamination and the possible harmful effects of food additives and toxic residues. Even in the United States of America, with its high standards of food hygiene and purity, several million persons suffer from food poisoning every year.

The ways through which foodstuffs are contaminated by microbial, chemical, and physical agents are complex. The ability of the health services to protect the public against food hazards has been restricted because they do not have sufficient resources to undertake the inspection and control measures that even the existing regulations require. The major limitations are the lack of uniform health standards for food control, appropriate analysis laboratories to confirm the microbial or chemical quality of foods, institutional and organizational support for food hygiene programs, and qualified professional and technical personnel for supervising and conducting inspection and control activities.

During the 1970 decade, the growth of the population in Latin America and the Caribbean countries will substantially increase the demand for food. The present rate of increase of agricultural production (2 per cent) and its trend are much slower than the rate of population increase in those countries. Although apparently sufficient, the supply of meat is sharply reduced by losses caused by animal diseases and by the large export quotas of some countries. It is expected that the decade will bring important technological developments in the food industry, especially in the production and increased consumption of prepared, semiprocessed, and synthetic foods. Technological innovations in food processing will have various effects: some, designed to improve the production and sale of foods, may increase public health hazards; others may help to ensure that foods on the market satisfy hygienic or nutritional requirements or may help to reduce the economic losses caused by spoilage, infestation, or contamination. Health services will have to maintain a careful watch on the new procedures used in the food industry in order to ensure the high nutritive value of its products and to prevent the use of food additives harmful to man.

Because of the interrelationship between food production and public health, cooperation between the Ministries of Health, Agriculture, Education, and Commerce is necessary, as is the participation of the food industry. Plans agreed upon by these sectors can ensure the eventual success of national food hygiene programs with consequent benefits for the health and economic development of each country.

Recommendation

Reduce human illness and economic losses caused by the microbial, chemical, and physical contamination of food products, by incorporating food quality control and hygienic activities into general health programs and establishing health standards that will ensure health protection and promote trade between the countries.

TO REACH THIS GOAL IT IS NECESSARY TO:

- Define clearly the responsibilities of the health sector with respect to food quality control and hygiene in the production, preparation, processing, industrialization, labeling, distribution, sale, and export of food. The definition of these responsibilities will enable each Ministry of Health to clearly and accurately define the needs and scope of its programs on all levels.
- Establish and/or strengthen services for food registration and quality control in each Ministry of Health. This service should coordinate its food control activities with those of other official agencies at all government levels and should establish or update health

standards for food quality control and food hygiene regulations and ensure that they are enforced.

• Train the necessary manpower to undertake in each country, in accordance with its special characteristics, a food quality control and hygiene program. Special attention should be given to the training of food inspectors and of food analysts.

• Promote, plan, and conduct epidemiologic studies of biological, microbial, and chemical contaminants in food to determine their health significance as related to food production, storage, processing, and distribution. Special attention should be paid to rodent control and its effects on food conservation in both urban and rural areas. The findings of these studies should be translated into practical, preventive, and monitoring measures.

• Establish health policies and regulations to ensure the enforcement of minimum standards for food quality and nutritive value. These standards should also cover all aspects of the technology used in the preparation of each product.

• Endeavor to have each country adopt health standards for food quality control compatible with those established by other Governments and to promote research and other activities for validating the standards.

• Incorporate in health education programs activities designed to teach the fundamental aspects of food preservation and hygiene as well as food storage and nutritive value and to conduct concurrently educational programs directed at food industry workers that emphasize the need for cleanliness and strict hygienic practices in food factories, warehouses, markets, and shops.

• Provide sufficient financing, in those countries that require it, to enable food control and registration agencies to maintain efficient programs, the funds for that purpose being obtained in part, at least, from fees charged for health licenses for establishments selling and processing foods, for the registration of prepared foods, and for laboratory analyses.

DRUG QUALITY CONTROL

Present Situation

Much of the recent success of medical science is based on administration of newly developed drugs, and this has resulted in large-scale use of pharmaceuticals in present-day therapy. The magnitude of such use was made evident by the survey conducted by PAHO in 1970 which showed that the people of the Latin American and Caribbean countries were spending US$2 billion per year (at retail price levels) for medicaments. It is estimated that by 1980 this annual expenditure will rise to US$5 billion.

Although the new drugs have provided great benefits, they have also created a number of complex problems that have overwhelmed the drug control agencies of the Region.

In general, throughout Latin America and the Caribbean area programming and funding are insufficient. Consequently most of the national drug control agencies lack the necessary personnel to carry out their inspection responsibilities or to test the volume of drugs that should be examined, and frequently their inspectors and analysts have not had appropriate advanced training. Moreover, much of their laboratory equipment is old, and there is a serious shortage of modern testing devices. In many cases the national laboratories are limited to the use of chemical test procedures because they do not have the personnel or facilities required for microbiological and pharmacological testing of drugs.

Recommendation

Plan, develop, and execute in all the Latin American and Caribbean countries, long-range programs for drug quality control, with the necessary legal, technical, and financial support.

TO REACH THIS GOAL IT IS NECESSARY TO:

• Establish, in each country, a unified drug control agency or an effective coordinating system with the following functions:

a) Expeditious drug evaluation and registration, and control of labeling and advertising of domestic and imported products.
b) Collection of drug samples at appropriate stages of manufacture and distribution, and analysis of such samples.
c) Inspection of the production and distribution of drugs and the importation of medicaments or of the basic chemicals for their production.
d) Enforcement of the legal requirements pertaining to drug control, including manufacturing practices and quality control.
e) Periodic evaluation of registered products and their use, to eliminate drugs which have been superseded in therapeutic value.
f) Encouragement of research related to the functions of a drug control program, and publication of the results.

• Attempt to staff national drug control agencies with specially qualified experts in the health sciences who are knowledgeable in drug manufacturing procedures and pharmaceutical quality control, and provide for the advanced training of technical personnel, who should furnish full and constant advice to manufacturers of medicaments on production techniques and quality control.

• Develop and establish uniform quality control standards to encourage the use of comparable products in the countries of the Hemisphere. This should lead to a permanent exchange of information on all matters concerning production, distribution, sale, and use of medicaments. In particular, information should be collected and distributed on costs and registered prices of imported products. Drugs or medicaments sold in international commerce should be accompanied by a quantitative list of medicinal ingredients, indications for use, and recommended dosage. Information should also be available on contraindications for use, known adverse reactions, and data on biological and clinical testing.

• Adopt measures so that the national drug control agencies are provided with necessary financing and adequate laboratory facilities, particularly for the quality control of pharmaceuticals and biologicals, and also for pharmacological and toxicological studies.

• Urge that funds be made available in a proportion of not less than 1 per cent of drugs consumed in each country so as to enable the national drug control agencies to acquire an adequate staff for performing activities suitably geared to the volume of drugs consumed in the country, where this may be necessary, and consider means whereby the countries could self-finance their drug control activities.

• Set definitive procedures for assuring that special training is provided for drug control law administrators, drug establishment inspectors, and the various kinds of laboratory specialists needed for testing drugs.

• Establish a Pan American Drug Quality Institute to facilitate the dissemination of new technology; carry on research activities; distribute technical and scientific information; provide advanced training for senior drug analysts from the national drug control agencies in modern instrumental test procedures, microbiological procedures for testing antibiotics, and pharmacological testing, including bioassay procedures; and give technical training to senior inspectors and principal

administrators. The senior-level personnel trained at the Institute would conduct similar courses at the national level. The Institute could assume the responsibility also for preparing a technical report or making an analytical study of quality control, which could serve as the basis for the decision of national agencies, one way or another.

TRAFFIC ACCIDENTS

Present Situation

The traffic accident constitutes a problem of increasing interest in the field of public health.

In the Americas, deaths due to accidents are on the increase. In some countries they may account for as much as 40 per cent of all accidental deaths and rank among the first 10 causes of death. For certain age groups, they constitute the first cause of death. In some countries with high vehicular densities the rate for accidental deaths is surpassed only by mortality due to heart disease, malignant tumors, vascular lesions, and pneumonia and influenza.

For every traffic accident death there are from 10 to 35 persons, depending on the rates in the various countries, whose health is temporarily or permanently impaired. Adolescents and young adults are the groups affected most seriously. Traffic accidents are often the result of the defective social behavior of one or more individuals.

They may also occur as a result of physical or mental changes that persons undergo because of an acute or chronic disease or a state of intoxication, emotional tension, neurosis, or psychoses.

The prevention of deaths and disability calls for community support in the form of emergency medical services and medical rehabilitation services.

In analyzing traffic accidents from an ecological standpoint, it is necessary to keep in mind the three components that combine to produce the accident: the highway, the vehicle, and the users of the highway.

Recommendation

Reduce the proportion of traffic accidents and consequently the deaths and disabilities they cause.

TO CARRY OUT THE ABOVE, IT WILL BE NECESSARY TO:

- Establish in the countries national bodies to coordinate the work of the institutions in the various public and private sectors dealing with the prevention of traffic accidents; promote a multidisciplinary approach to control and research programs, and assume guiding functions in the execution of programs in this field.
- Conduct studies and research, including epidemiologic and sociocultural research, to determine the nature and scope of the consequences of traffic accidents; their distribution by sex, age, occupation, and marital status of the persons involved; their geographic occurrence; and all other related variables so as to be able to identify the most vulnerable population groups, the places of greatest danger, the kinds of vehicles that have the best safety features, the days and hours associated with the highest incidence of accidents, etc.
- Promote the approval of laws and regulations based on the particular nature of traffic accidents in each country, as determined by investigations made toward that end, taking into account the three elements mentioned.
- Promote educational efforts at all levels, ranging from courses in the schools to mass media.

• Take measures to apply in the Region, to the fullest extent possible, the new techniques in highway construction being developed throughout the world to meet specific needs under various conditions.

• Improve medical and governmental health services for providing immediate medical aid to accident victims, as one of the decisive ways of reducing traffic accident deaths by at least 50 per cent; minimize the disability resulting from such accidents; and develop programs for the medical rehabilitation of traffic accident victims.

• Establish standards for granting driving licenses in accordance with the prevailing conditions in the country, such as psychotechnic tests.

• Consider the development in the countries of the programs for prevention of traffic accidents as an aspect of the total problem of all accidents and prepare and carry out programs in this field.

NURSING

Present Situation

In the countries of Latin America and the Caribbean area, there are insufficient nursing personnel to provide a satisfactory level of nursing care; in 1969 the nursing personnel/population ratio was 11.1 per 10,000 inhabitants.

The acute shortage of nurses (2.3 per 10,000 population) and their deficient distribution and use results in most nursing care being provided by nursing auxiliaries with insufficient training and supervision to ensure the provision of safe nursing care.

Most of the countries do not have a clearly defined policy with respect to nursing care and the training of nursing personnel.

The organizational structure of nursing services and education in this field is usually inadequate and poorly administered. There is a shortage of equipment and supplies required for nursing care and nursing education. As a result the quality of care is affected and the type of experiences students require for learning are not provided.

There are no units responsible for planning, coordinating, and evaluating educational programs. The result is an imbalance between the factors of need, demand, production, and absorption. The lack of studies designed to evaluate the adequacy of educational programs in terms of the service requirements and social and economic conditions in the countries creates confusion and leads to duplication of efforts and a consequent waste of already limited resources.

Statistical information is lacking, and research on new ways of organizing and administering nursing services and nursing training are urgently needed.

Recommendations

1. Establish in 60 per cent of the countries in the Region a nursing system clearly defining the role of nursing, the number and type of nursing personnel required for achieving the goals of national health plans, and the programs needed for preparation of personnel. Determine the type of nurses required by each country in accordance with the national reality and develop the educational programs required.

TO REACH THIS GOAL IT IS NECESSARY TO:

• Frame a national policy and prepare key nurses in methods of planning and programming, as a step toward the establishment of a nursing system.

• Establish a mechanism for policy formulation, coordinated planning, and decision-making by nurses, physicians, and health authorities.

• Develop a system for providing the necessary information for planning, conducting, and evaluating nursing services and nursing training programs.

• Promote descriptive and experimental research on the various components of nursing service and education systems for the purpose of developing new methods of providing nursing care, organizing and administering services, and training nursing personnel, particularly intermediate level and auxiliary personnel.

• Include nurses especially prepared in administration in the decision-making groups at national, provincial, and municipal levels and in hospitals and other health services.

• Define the functions of all members of the health team.

2. Provide the population with safe nursing care in 60 per cent of the hospitals with 100 beds or more and 60 per cent of community health services.

THIS IMPLIES:

• The integral implementation of the nursing care role of nursing personnel in the care of patients in hospitals, outpatient services, and health centers.

• Reduction by 50 per cent of infections acquired by hospital patients.

• Reduction by 50 per cent of hospital-induced accidents and disabling conditions caused by poor nursing care.

• Extension of nursing care in the field of maternal and child health in order to extend coverage to a greater proportion of the vulnerable groups.

3. Achieve an active work force in Latin America and the Caribbean by 1980 of 19 nursing personnel per 10,000 inhabitants. Of this group 4.5 per 10,000 should be nurses. This signifies approximately 700,000 nursing personnel, which represents an increase of 134 per cent in the number of these personnel and an increase of 184 per cent in the number of graduate nurses in Latin America.

TO DO THIS, IT IS NECESSARY TO:

• Expand the employment for nursing personnel by gradually increasing the number of nursing posts.

• Accelerate the training of nursing personnel so as to produce 124,917 nurses during the decade (one-third would be trained at the university level and two-thirds at the intermediate level) and of 360,000 nursing auxiliaries.

• Develop in those countries which deem it convenient short careers with the possibility of entering, leaving or re-entering at all levels.

• Establish a regional center and/or national courses for training instructors, administrators, and above all specialists, in various clinical areas of nursing, to ensure that the nurse returns to direct patient care.

• Establish centers for the development of research in nursing.

• Adopt the necessary measures for moderating the emigration of nurses through the improvement of working conditions and financial remuneration.

HEALTH LABORATORIES

Present Situation

There is now a consensus on the important function of the health laboratory in curative and preventive medicine programs.

Only 10 per cent of the health establishments without beds have laboratory service. while 70 to 95 per cent of the hospitals have some type of laboratory available.

In most countries of Latin America and the Caribbean area, there is an obvious need to modernize these services, expand their coverage, and improve their efficiency and productivity without appreciably increasing their costs.

In general, insufficient availability of resources to meet the demand, administrative and technical problems, and shortage of trained personnel are noticeable. Moreover, there is frequently an absence of a policy for organizing the laboratories on a national scale and standardization of their techniques according to the different operational levels.

In view of the high prevalence of infectious diseases, it is becoming necessary to improve facilities for bacteriological, virological, parasitological, and mycological testing. Also, it is necessary to increase the laboratory facilities for diagnosing chronic diseases.

Laboratories for the control of water, foods, biological products, and drugs require a strong boost to increase their development. Greater laboratory support is also needed for ascertaining environmental pollution resulting from industrialization and the use of insecticides. Hospital laboratories need to modernize their administrative and technical structure in order to meet the growing demand.

Request for vaccines, therapeutical sera, and biological reagents intended for the diagnosis and control of communicable diseases, and particularly those needed to attain the targets established for the decade, will make it necessary not only to increase the production of biologicals but also to develop systems which will enable the best use to be made of resources at both national and multinational levels.

Recommendations

1. Establish programs for the development of a system of health laboratories in 24 countries incorporated into the health programs in accordance with the structure and extent of their respective services, in order to provide at least minimum laboratory service for every health unit and medical care or preventive care establishment having a physician in regular attendance.

2. Expand and improve laboratories that manufacture biological products for human and veterinary use designed for diagnosis, prevention, and treatment of infectious diseases, in order to satisfy, in particular, the present and future national and multinational demand of programs for control of measles, whooping cough, tetanus, diphtheria, poliomyelitis, and smallpox.

3. Regionalize organization within the countries of blood banks, including the creation of a central reference laboratory for typing blood groups, and for processing the blood and preparation of its derivatives.

4. Develop training and retraining centers for laboratory personnel at all levels.

TO CARRY OUT THE FOREGOING GOALS, IT IS NECESSARY TO:

- Consolidate the programs for the development of health laboratory systems and blood banks in those countries that have begun them, and establish and operate similar programs in the other countries in need of them.
- Improve laboratory facilities for diagnosis of acute and chronic diseases and for performing the tests required under hygiene and food and drug control programs. Establish national and regional bromatological laboratories.
- Consolidate and expand facilities for the preparation and control of biological products for human and veterinary use, intended for the diagnosis, prevention, and treatment of infectious diseases.
- Establish an adequate system for complementing and distributing biological products on a regional scale, based on a preliminary

study of demand and costs, which would permit the creation of banks of biological products.

• Adopt new standards, techniques, models, and equipment to ensure the effective operation of diagnostic services, control tests, production of biologicals, and the processing of blood and drugs for medical use.

• Standardize techniques and create the mechanisms necessary for controlling the quality of laboratory results.

• Develop regional reference laboratories which can also be used for the training of professional personnel, through postgraduate courses, to serve as laboratory administrators, instructors, and specialists in laboratory techniques. Make full use in the training program of the resources available in national universities.

• Expand the facilities in the countries for the training and specialization of professional and nonprofessional laboratory personnel, providing adequate means for the preparation of directors, section chiefs, and supervisors, as well as instructors and research workers; establish basic courses for auxiliary personnel, especially heads of local laboratories; and offer special short-term courses for general auxiliaries.

• Develop a regular system of reporting on laboratory activities so as to permit evaluation of the productivity of the programs and the utilization of resources.

• Grant the necessary priority, in formulating and developing national health plans, to the improvement of health laboratory services. In order to achieve this, it will be necessary to establish services for the maintenance and repair of laboratory equipment; stimulate the manufacture of basic equipment in Latin American and Caribbean countries; and grant the financial resources which will make it possible to fulfill the objectives of the laboratory programs.

MEDICAL REHABILITATION

Present Situation

It is estimated that in Latin America and the Caribbean area there are no fewer than 10 million persons (3.5 per cent of the population) suffering from some form of disability who will not be able to realize their physical potential unless rehabilitation services are made available to them. These persons are beginning to become aware of the opportunities offered by rehabilitation and are making their needs known.

Generally speaking, the disabilities are of a locomotor, sensory, cardiac, or respiratory nature, and include problems such as paralysis, amputations, speech, hearing, or visual defects, or activity restricted by cardiac or pulmonary disorders.

Modern technology offers a number of services which, if adequately utilized, can make for marked improvement in the physical, psychological, social, and vocational well-being of the disabled person. To apply this technology, it is necessary to call upon people trained in physical medicine, physiotherapy, occupational therapy, speech therapy, and prosthetics.

Some or most of the services cited above exist in the large urban centers of Latin America, but generally they are in a position to provide only a small part of the coverage needed. Outside these urban centers, it is very difficult to find rehabilitation services, with the possible exception of physiotherapy.

In most of the countries of the Region the programs are hampered by insufficient financial resources, lack of clearly defined policies assigning priority to the establishment of rehabilitation services, and a scarcity of properly trained manpower.

What will most probably take place during the decade is an aggravation of the problem because of the greater demand on the one hand (owing to the increase in average age of the population, greater frequency of accidents, etc.) and on the other to the fact that no positive change is foreseen in the attitude toward expanding the number of facilities where rehabilitation services can be offered.

Recommendation

Include, in all medical care programs, basic rehabilitation services to ensure that the disabled persons being served by them can return to as normal a life as possible.

TO ACHIEVE THIS GOAL, IT IS NECESSARY TO:

- Establish national rehabilitation committees to assure coordination among the medical, psychological, social, educational, and vocational rehabilitation units.
- Include the provision of rehabilitation services in all public health programs.
- Establish departments of physical medicine and rehabilitation in all regional and university hospitals.
- Establish physical and occupational therapy, audiology, social therapy, and prosthetic and orthotic services in each health region.
- Establish services for special education, psychosocial rehabilitation, and vocational rehabilitation in all rehabilitation centers.
- Grant special attention to the problems of administration, legislation, financial resources, coordination, and obtainment of equipment and other materials.
- Give priority in the allocation of resources in this area to the training of all the professions that make up the rehabilitation team, by means of agreements, fellowships, and residential schemes, with the advice of PAHO or through intergovernmental arrangements.

HEALTH EDUCATION

Present Situation

All but two of the countries of the Region have health education services within the institutional structure of the health sector. Nevertheless, at the operational level the coverage of health education programs is very limited and there are shortcomings in the continuity and effectiveness of community educational activities. There are also weaknesses in the planning of educational programs caused by a shortage of the human, material, and financial resources assigned to health education services. Another important factor is the ineffectiveness of the mechanisms for coordinating health education programs with the general educational systems and with community, labor, and social institutions active in the communities.

As a result, the public is not always duly informed or prepared for the action it should undertake to raise its health levels or to mobilize its resources in support of activities by health establishments.

Recommendation

Consolidate, reorganize, and reorient health education units to enable them to channel the educational process and thus contribute to obtaining the conscious participation of the community in the activities and programs of the services, establishing health education services in countries where they do not exist.

TO THIS END THE FOLLOWING ACTIVITIES ARE SUGGESTED:

- Perfect or define, in each country, the health education policy in line with the health policy of the sector and ensure its inclusion in the legislation.

• Perfect the training of specialized health education personnel, orienting the curricula in line with the sociocultural realities of the countries and the development of the health services.

• Develop and perfect the infrastructure of the health education services, giving them the means to develop adequately the educational component of the health programs.

• Continue studies in depth to enable health education to be included in the health planning process.

• Support the educational process that is being conducted with health workers and with the community, through the mass communication media, bringing in other sectors such as education and agriculture, ensuring effective coordinated action by the entire health team and also the active participation of the population.

• Stimulate and advise Ministries of Education with a view to strengthening primary and secondary school curricula and encourage greater participation by the teaching profession in health education.

• Develop appropriate machinery for intersectoral coordination, so that health education activities have a multiplier effect in other related fields.

• Develop and strengthen regional teaching centers in Latin America and the Caribbean area with a view to increasing the number of health educators.

• Establish and strengthen the teaching of health education in postgraduate training at schools of public health.

• Establish and progressively strengthen the teaching of health education in the basic training centers for professional health personnel. Develop and strengthen the teaching of health education in inservice training programs.

• Promote studies and research on the behavior of individual communities in regard to health and on new educational techniques and materials in this sphere.

HEALTH AND RADIATION

Present Situation

Although radiation has been used for the diagnosis and treatment of disease since soon after the discovery of X rays nearly 80 years ago, many persons in Latin America and the Caribbean do not have access to quality radiation medicine services, while many others are not covered by programs to protect health against excessive exposure to this potentially hazardous physical agent.

The dual problem facing the health authorities of every country of the Region is to obtain the benefits for health that are possible through the efficient use of radiation while controlling radiation exposure of both the radiation workers and the general public.

Diagnostic radiology services are available throughout the entire Region with an estimated 30,000 diagnostic X-ray units in existence; yet data concerning the number of persons with access to service or concerning efficacy of service, which may include components of underutilization as well as overutilization, are not readily available.

Radiation therapy services are provided in nearly every country of the Region, and some of the most modern and costly equipment available may be found in Latin America; yet the optimum utilization of existing facilities as well as provision for the increasing needs of the future is questionable because of the lack of sufficient qualified personnel.

Although nuclear medicine has in general been developed by adequately trained specialists, there is inadequate communication between research workers; there are methodo-

logical shortcomings in the introduction and standardization of new techniques, and operational difficulties in obtaining radioisotopes and equipment.

Common to all of the activities mentioned above, as well as to a number of other beneficial activities utilizing radiation in teaching, research, and industry, is the need for protection against risks inherent in its use; yet in only 11 Latin American and Caribbean countries have radiation protection programs been initiated by the health authorities.

Recommendation

Procure the maximum benefits from the use of radiation while controlling its inherent hazards.

FOR THIS PURPOSE THE FOLLOWING ACTION IS SUGGESTED:

- Define and solve the problems involved in the optimum use of diagnostic radiology. For this purpose diagnostic radiology studies should be carried out in the Region in order to obtain information concerning their utilization, productivity, and efficacy. Training programs for intermediate-level technicians should be initiated in various countries of the Region, and access to centers of excellence abroad should be facilitated for advanced training.
- Provide the basic professional and technical staff necessary to give radiotherapeutic services to those patients requiring them. One qualified radiotherapist for every 400 new cancer patients who require radiation therapy, one medical radiation physicist for every 800 new patients, and one qualified radiotherapy technician for every 400 new patients should be provided. This would be according to the possible means of each country.
- Maintain the quality of existing services in nuclear medicine, for which purpose the importation and distribution of radioisotopes should be centralized and customs procedures should be facilitated.
- Offer annual courses or seminars in countries where nuclear medicine services are advanced, and provide training fellowships for countries which do not yet have activities in this area.
- Provide a basic radiation protection program in each country of the Region, for which purpose it is necessary to:
  a) Identify and evaluate the existing sources of radiation and institute any necessary legislative or regulatory measures.
  b) Train personnel necessary for evaluation or radiation hazards and enforce control measures.
  c) Establish a national health radiophysics laboratory in each country to provide personal radiation dosimetry services for occupationally exposed individuals.
- Establish at the country level an institution or agency for the surveillance of every installation which utilizes ionizing radiation.
- Establish in the countries programs to measure radioactivity of the environment, including the parameters which are considered more significant in each country.
- Train the professional and technical personnel needed in various situations where radiation affects health, through the establishment of educational centers in Latin America and the Caribbean for training and research in each of the following disciplines: radiotherapy, nuclear medicine, radiobiology, and radiation protection.
- Strengthen coordination among the national and international agencies concerned with health and radiation through the establishment of high-level joint commissions.

HEALTH SERVICE SYSTEMS AND THEIR COVERAGE

Present Situation

The policy on development adopted by the countries and territories of the Region at Punta del Este in 1961 was expounded in the health sector in the Ten-Year Program formulated at that time. The improved health situation made possible by that Program serves as a point of departure for the definition of new horizons, ways, and means of orienting the development of the sector and its most relevant components during this second decade.

Thus, the degree of expansion achieved by the health service systems of the countries of the Region, in terms of the coverage potential of their installed capacity, is estimated to cover 63 per cent of the total population of Latin America and the Caribbean with at least "minimal" health services. These include care for emergency cases, maternal and child care (including nutritional, family, and community education), immunization, basic environmental sanitation, the recording of basic statistical data, and patient referral to more complex services available in the system.

It has been noted that the coverage potential is less, the smaller the size of the locality where the population lives.

The data analyzed showed that practically 100 per cent of the population living in localities of 20,000 or more persons, 90 per cent of those living in localities of 2,000-20,000, and 20 per cent of those in localities of under 2,000 have minimal health services available to them. The last named category is the population that has rural characteristics (45 per cent of the total population). Available data on the principal programs whose activities depend on the capacity of the systems—which in turn are heavily conditioned by the extent of their resources, of which human resources are the most critical—have revealed the low coverage attained by the programs.

These defects frequently owe their origin to the lack of an explicit national and sectoral policy that fixes limits for the fields of action of the sector, defines the institutions comprising it (as well as their relationships and coverages), and gives direction to the development of the health service systems.

In performing this normative and directing function of the sectoral policy, the Ministries and Secretariats of Health have had the authority that they can exercise in this field limited in practice by the authority conferred upon other institutions in the system and by the frequent decisions affecting the sector that are made outside it without consulting it. This limitation has continued despite the progress achieved in establishing means of intrasectoral and intersectoral coordination.

The lack of explicit policies for developing the systems has weakened planning as an instrument that gives order to the administration of the services. The result has been that the plans have for the most part been restricted to the agencies under the Ministries and Secretariats of Health. The emphasis has been placed on programming final services, with less attention being given to complimentary services, to programs for setting up supportive administrative systems, and to programs of investment in the broadest sense, which include those of research—especially on administration—and of effective health technologies that are consistent on the one hand with the planned content and coverage of each program and on the other with the actual possibilities determined for each country by its particular socioeconomic reality.

These factors have affected and still affect the development of all levels of the regional system of operation which was begun several decades ago by the Ministries and Secretariats

of Health as a device for decentralizing their activities, and have been slowly draining their capacity for expansion. Likewise, these factors, along with the complexities of the nature of demand and factors in force outside the system, account for and condition the insufficient geographic coverage of the population —particularly rural—and of specific programs.

Recommendation

Begin installing machinery during the decade to make it feasible to attain total coverage of the population by the health service systems in all the countries of the Region.

Specifically:

• Extend, in localities of over 100,000 inhabitants, basic services coverage to their entire population and expand the number of specialized activities needed as a result of new problems created by urbanization.

• Extend, in localities of 20,000-100,000 inhabitants, basic services coverage to all inhabitants still not covered.

• Extend, in localities of 2,000-20,000 inhabitants, minimal comprehensive health services coverage to all inhabitants still not covered, complementing it gradually with the provision of basic services.

• Extend, in localities of under 2,000 inhabitants, minimal comprehensive health services coverage to all inhabitants to be operated by suitably trained auxiliary personnel.

This basic care, of different qualitative levels, will of course have to be supplemented by a system of coordination and referral that will give the whole population access to the most highly specialized care.

TO ACHIEVE THESE GOALS, IT WILL BE NECESSARY TO:

• Define in each country a policy for developing the health service systems, in terms of a national or sectoral policy that will set the bases for redefining the health sector, by delimiting its fields of action, and for defining its institutional components and the geographic coverage of the population and of planned programs.

• Increase the productivity of the systems by implementing technical-administrative and legal reforms that will strengthen the organizational and functional structure and the normative and directing authority of the health policy of the Ministries and Secretariats of Health; develop the institutions; improve or establish a flexible administrative regionalization; and supplement the existing installed capacity with the personnel, equipment, and intermediate and general complementary services they are now lacking.

• Conduct research on and test health technologies and production functions in an effort to find those that will be effective and consistent with each country's present socioeconomic and cultural reality and future expectations for development.

• Incorporate planning and its methodological techniques into the administration of the health service system at all its levels, complementing final service programs with complementary programs, those of supportive administrative services, and those of investment in its broadest sense, in those countries that might not have contemplated doing so.

• Increase existing resources where that is consistent with the possibilities for their absorption and full use by the system.

• Explore sources and methods of internal and external financing that will provide support for improving and expanding the health service systems that prove to be necessary for the implementation of the policies formulated. The communities should participate in the direct or indirect financing of the various health services.

• Regulate the sector and its administration to serve as a frame of reference, with such regulation presupposing the organization of a viable national health service system

adapted to the needs of each country, and the implementation of the recommendations made in the above points. The participation of the social security medical services is an important element of this system and should be in line with the policy and patterns set by each Government.

• Regionalize the services from a functional standpoint as a means of decentralization, including sufficient delegation of authority so as to facilitate the administrative process, especially with respect to the handling of the budget and personnel (which will also permit coordination of the welfare education function in the health sector with the education sector), and, lastly, coordination with other sectors in regional planning and in planning the main poles of development.

It is equally important to ensure the active participation of the community—the most productive health resource—throughout the process of organizing the system, using various techniques such as health committees combining the agricultural, education, and housing sectors, according to conditions of each country.

The implementation of the regional mechanism implies the organization of a network of health services. The network should have, by the close of the decade, approximately 25,000 new minimal health stations and 1,000 additional basic units. Stress is laid on the need for the physician's training to include community practice. What is needed is less information and more training in the preparation of health professionals.

MEDICAL CARE AND HEALTH SYSTEMS

Present Situation

The main characteristics of the medical care systems in the Region are the multiplicity of public and private institutions involved in providing care and the absence of inter-institutional coordination within the sector, resulting in duplication of service, unequal coverage for different segments of the population, waste of resources, and unnecessary increase in the costs for services.

The shortcoming of the institutional administrative process of the health sector is manifested in its relationship with social security, which does not take part in the health planning process and which organizes medical services independently, sometimes in open competition with the similar services of the Ministries of Health.

Added to this lack of coordination of the institutional mechanism is another complex factor: private medical practice.

However, one cannot disregard the fact that the countries have made considerable efforts to correct these defects in organization.

Planning for the health sector, integrating the preventive and curative actions of medicine, and extending the system's coverage and administration by means of a pre-established process are measures that have a very important political impact on the economic and social structure.

Despite the rational nature of these changes, aimed at establishing a health system, they are evoking resistance among certain groups. Experience shows that the groups which finance, implement, and receive services, as well as those that provide the infrastructure, are those which lack confidence in the viability of the system.

Against them policy decisions have rarely been able to obtain adequate support to carry out the necessary harmonization of the health sector as a basis for increasing the coverage, proper utilization, and productivity of the resources and for evaluating and controlling the results.

The social security institutions accept health planning, administrative reform of the sector, and universalization of coverage so long as the system as a whole is developed within the framework of social security. For their part, the private social welfare agencies, despite the large subsidies they receive, try to defend their continued separate existence and autonomy in every way.

The financing of an integral health system is one of the problems that more acutely affects practically all the countries. Even in those with a high level of industrial development, it is seemingly difficult to find sufficient resources to finance integral medical care of high scientific quality for the entire population. The problem is much more serious in those countries with a predominantly rural economy, which have large population segments that cannot contribute to the financing of their health care.

The above refers to the financing of the operating expenditures of the health services. It is also necesary to develop sufficient capital to improve, maintain, and complete the installed capacity, in buildings as well as in installations and equipment.

To reduce high costs as much as possible, it is first necessary to carry out the administrative reforms required to obtain better use and productivity of the existing resources. Once that is done, coordination of the financial resources under a single health service system will make it possible to formulate programs to cope with existing health problems. The administrative reforms should include measures for the regionalization of care and teaching services and for giving preference to ambulatory treatment services.

In the countries of the Region (except four) there are fewer than 10 hospital discharges per 100 inhabitants per year, and only five have more than one consultation per inhabitant per year. This indicates that large segments of the population do not have the right and/or access to medical care and hospital services.

Of all the discharges, 68.5 per cent involve: (a) communicable, parasitic, and infectious diseases; (b) pregnancy, childbirth, and prenatal and perinatal complications; and (c) physical or mental impairments caused by accidents. This indicates that an important part of hospital resources is being used in solving problems that could be solved by preventive medical action and improvement of the environment.

Hospital resources are scarce and their distribution inadequate, with the latter condition seriously affecting the rural communities of Latin America. A total of 85.6 per cent of the hospitals have less than 100 beds. This constitutes a serious obstacle to improving the quality of the care provided and the efficiency of the service, due to the large number of small hospitals scattered over extensive geographic regions. The productivity of such hospitals is low and their cost proportionally higher.

The average investment per bed in the 13,855 hospitals with 867,243 beds in Latin America is US$12,000, with the over-all investment coming to over US$10 billion. The ratio, per hospital, of engineers or technicians specialized in hospital maintenance is less than 1 per cent. Only five countries of the Region have a policy and standards for hospital maintenance, and even in these countries compliance with them is inadequate. The result is that, despite the large investment of capital in installations and equipment, the lack of maintenance causes a rapid deterioration, with subsequent financial loss to the detriment of the patients.

Recommendations

1. Expand the capacity to provide the care being sought through better utilization of available resources and adding new resources, so as to attain a minimum of one hospital

discharge per 10 inhabitants per year and two medical consultations per inhabitant per year.

TO DO SO IT IS NECESSARY TO:

• Apply the concept of progressive care of the patient, based on the allocation of resources to groups of patients according to their need for care (intensive care, intermediate care, minimal care, ambulatory and domiciliary care, which will facilitate the best use of the resources and at the same time permit substantial improvement in the quality of services.

• Intensify the programs designed to improve preventive care activities and environmental conditions, in order to reduce the use of beds for preventable diseases and thus permit the bed resources to be used for cases of morbidity due to irreducible affections.

• Improve the supply of medical care through a system of regionalization enabling distribution of resources according to levels of care. This will make it feasible to apply the principle of providing high quality care on an egalitarian basis to the entire population.

• Plan comprehensively the human, physical, material, and financial resources required for the provision of medical care services.

• Promote the training of administrators for health service systems through postgraduate courses and introduce principles of administration into the undergraduate curriculum so as to ensure up-to-date, scientific administration of the services.

• Increase the hospital resources through a program giving priority to the modernization and expansion of existing establishments and providing for the construction of new buildings only where strictly necessary. The objective will be to enable each country to meet the proposed target of at least one discharge per 10 inhabitants per year and two consultations per inhabitant per year.

• Establish and apply policies for maintenance of buildings, installations, and equipment in all the countries of the Region, so as to enable effective solutions to be found to the problems of maintenance at the national, provincial, and local levels.

• Organize training of specialized maintenance personnel. For this the Hospital Maintenance and Engineering Center in Caracas, Venezuela could be used.

2. Provide adequate medical care for all inhabitants.

FOR THIS PURPOSE, IT IS NECESSARY TO:

• Revise the administrative structure of the national health services, through the following:

a) Changes in the structure of the Ministries.

b) Adoption as a goal for the decade of the creation of national health services to plan and coordinate the available resources within a health system adapted to the characteristics of each country.

c) Regionalization of hospitals and other health services.

d) Special emphasis on expanding ambulatory medical care by means of health centers or clinics coordinated with the hospital centers.

e) Creation of regional international mechanisms to ensure the timely production and distribution of supplies (drugs, medical, and surgical equipment, etc.) in adequate quantity and quality, so as to eliminate the present dependence on outside sources for their procurement.

3. Financing, FOR WHICH PURPOSE IT IS NECESSARY TO:

• Promote full mobilization of the national resources, including, where considered desirable, the establishment of a national health insurance scheme.

HEALTH ADMINISTRATION, PLANNING, AND INFORMATION PROCESSES, AND INTERSECTORAL COORDINATION

Present Situation

During the past decade, the countries of the Region made progress in improving public administration and in developing the planning process. Nevertheless, the results appear to have been below expectations.

Because of various political, technical, and administrative factors, the health sector in almost the entire Region has not become a system. Management problems due to shortcomings in the definition and interpretation of policy and failures of the administrative process, especially direction, coordination, evaluation, and control, have become apparent. The role of planning has been critical in the orientation of decisions, and these have not been supported by timely and relevant information.

For health to be a major element in the general development program in the present decade it will be essential to make the health sector policy explicit, to define the functions and responsibilities of public institutions, and to establish a mechanism for their periodic review and adjustment.

Because of the tendency of Governments to channel the sectoral allotment of resources through a single agency, it will be essential for the social sectors to prepare themselves as well as possible to support their proposals by using planning as a policy instrument and as a mechanism for ensuring the effectiveness and efficiency of programs.

The accelerated movement of the population to urban areas, the proliferation of national centers of development, and the intention to increase health services coverage will undoubtedly increase the complexity of the sector. The health sector must therefore redefine the interrelations of its components, make the most effective use of its available resources by coordinating its institutions, and activate its supporting programs, so as to ensure the timely provision of resources for the execution of plans.

Manpower development calls for a major effort in training and updating the administrative and policy-making officials as well as the staff at the executive levels in administration, planning, and information in order to bring about the necessary structural change. The programming of this fundamental effort should be consistent with the over-all policy for the development of national manpower. In addition, use must be made of the advances achieved by research for the updating of the teaching programs and the adaptation of their content to the level of development of the administrative and planning processes.

Research activities will have to make a substantial contribution to the development of health systems. The policy-making levels must be provided with the most accurate information about the probable consequences of alternative decisions, and that will require the development of open numerical models. It will be necessary for the institutions to study the most efficient methods of services delivery and the most useful technologies for significantly increasing coverage, even in the less accessible areas. Consequently, great importance and resources will have to be given to operations research in administrative and technological fields. Operations research must be supplemented by studies on alternative schemes of sectoral financing.

Recommendation

Initiate and improve processes for defining and executing health policies and strategies incorporated into economic and social development policies which support and make it possible to:

a) Bring about structural changes enabling the sector to become a system consistent with the political, economic, cultural,

social, and technological conditions in each country in order to

b) Obtain maximum efficiency in the health level and structure, with the greatest possible increase in productivity in the services; and

c) Facilitate the timely and rational adjustment of decisions by establishing information-evaluation-control and decision-making systems.

The difference between the countries and between regions in the same country with respect to the characteristics of decision-making processes, capacity to absorb techniques, and operational capacity make it necessary to define a health policy, develop sectoral and institutional systems, and improve planning processes in progressive stages according to the particular conditions of each area.

To summarize, the proposed targets for the decade are to:

• Initiate and/or improve processes in all countries for defining policies, determining strategy, and planning, executing, and evaluating activities by means of a health system that ensures the rational use of available resources.

• Begin in the health sector, and promote in the other social and economic sectors in all countries, changes that will lead to effective intersectoral communication, with the aim of integrating the health plan within the over-all framework of a national development plan.

IN ORDER TO ACHIEVE THESE GOALS, IT WILL BE NECESSARY TO:

• Have all the countries in the Region define, make explicit, and execute an integral health policy and the corresponding strategies and establish a mechanism for ensuring their timely review and adjustment.

• Create in each country conditions for the operation of a health system adapted to its particular characteristics and consistent with the sectoral policy.

To create a health system, IT WILL BE NECESSARY TO:

a) Initiate and strengthen processes of administrative reform in the sector and in all its institutions.

b) Develop the operational capacity of the institutions.

c) Establish and develop information-evaluation-control and decision-making systems with the depth and detail required by their administration and planning processes in order to guide decisions and base them on relevant, realistic, and timely data prepared in accordance with the needs of the users at the different policy-making, technical, and administrative levels.

• Establish, expand, and improve, in each of the countries of the Region, health planning processes by "levels," which will be incorporated into the economic and social development processes, as instruments of the sectoral policy for providing the health system with guidelines and operational mechanisms.

TO DO THIS, IT WILL BE NECESSARY TO:

a) Obtain the full and active participation of all levels of administration of the sector at all stages of the planning process and especially the participation of the community as a whole.

b) Promote at the highest structural levels in the social sectors the identification of areas suitable for joint planning, permitting communication between sectors and hence over-all intersectoral programming. Indicate the following as joint planning areas to be promoted: (i) organization and administration; (ii) human resources; (iii) physical resources; (iv) financial resources; (v) technological resources and production of supplies and equipment; (vi) legislation.

c) Establish in those countries that have not yet done so a simplified planning

model, using techniques that are sufficiently flexible and easy to apply to ensure complete national, state, and regional coverage and thereby make it possible to:

i) Obtain a tentative overview of the situation.

ii) Detect bottlenecks that restrict the functioning of the sector so as to orient the subsequent use of more specific techniques to overcome them.

iii) Make explicit the Governments' suggested changes in each aspect to the health situation and of the program or budget concerned and its limiting factors.

iv) Define priorities for action, the corresponding programs, and their intersectoral relationship.

v) Establish evaluation and adjustment procedures and apply them.

vi) Apply simultaneously or successively more specific complementary techniques or models that will permit the extension of, or greater detail and precision in, programming in accordance with individual potentialities.

vii) Incorporate the health planning processes into the economic and social development process, particularly by identifying "key projects" of considerable economic and social impact that will receive wide and rapid acceptance because of their feasibility and the fact that they complement projects undertaken by other sectors; and prepare for each project identified a study that will determine on a preliminary basis its characteristics as regards objectives, duration, resources, costs, relationship with other sectors, and its contribution to the country's economy.

viii) Use and improve the technique of four-year projections as an instrument for programming external assistance to the sector.

• Formulate health plans as instruments of sectoral policy in order to activate the planning processes and to serve as mechanisms for guiding the establishment and operation of health systems, including programs for services, investment, the development of administration, management control, research, and personnel training. Special attention should be given to short- and medium-term programming. Resources should be concentrated selectively on sections of the population most exposed to avoidable risks of illness and death.

• Train the necessary manpower for establishing and operating health systems in each country, in accordance with its characteristics, and for expanding and improving administrative, planning, and information processes.

• Encourage, finance, and conduct research designed to determine the effects of various sectoral policy alternatives, and define methods or techniques that will increase the productivity and effectiveness of the services.

• Support the continuation and expansion of the activities of the Pan American Center for Health Planning, which is regarded as a fundamental resource for training, research, and information programs.

SYSTEMS OF STATISTICS

Present Situation

In recent years the emphasis on health planning has aroused a widespread interest and concern for improving vital and health statistics, which are so essential to planning and decision-making. In most countries of the Region, the health statistics system needs

improvement, and the upgrading of quality and coverage of the data is imperative. Included are the present systems covering statistics on births and deaths, on morbidity, on health resources, both institutional and manpower, and on services provided by health institutions. Information on investments in health and cost-benefit analyses are for the most part unobtainable and must be developed.

Trained personnel in biostatistics, medical records, and computer science are lacking, particularly at the professional level, which is essential to give leadership and strength to the health statistics program. Training requirements are great. The principal problem of the decade will be to obtain sufficient resources, financial and human, to staff, supervise, and evaluate the statistical system and to train statistical personnel. The status and remuneration of statistical personnel at all levels needs considerable improvement to assure the retention of their services.

The improvement of statistical data and of the health statistics system is dependent on persons from many health specialties and from many institutions, both within and outside the health sector, which produce, transmit, and use the information. It is generally acknowledged that improvement of the system is a long-term endeavor. Meanwhile, it will be advantageous to employ special techniques and research to supplement and evaluate the data obtained.

Recommendation

Have available essential data of good quality and quantity for planning, administering, and evaluating local, national, and international health programs.

GOALS FOR THE DECADE SHOULD CENTER ON THE FOLLOWING:

- Establish or strengthen a health statistics unit in the Ministry of Health, which will be responsible for statistical services for all needs of the Ministry. A qualified director with training in health and health statistics and an adequate number of trained staff are indispensable. They must collaborate closely with technical staff of other units of the Ministry, in order that the statistics produced respond to the needs and are properly interpreted.
- Evaluate and improve the existing health statistics system in each country and establish the flow of information from local sources to regional and national units for processing, analysis, and distribution to users; prepare standard forms and manuals to guide and direct activities at all levels—national, regional, and local; supervise effectively the activities of collection and transmission of data at the local and regional levels; and coordinate action with other agencies with related responsibilities in order to avoid duplication and to integrate data from all sources into a single system.
- Direct the principal efforts in most countries toward improving the quality, coverage, and completeness of vital and health statistics.
- Provide adequate facilities for processing data, in balance with their quality and availability and with the resources of the country.
- Improve civil registration systems through collaboration of the Ministry of Health with civil registry and national statistical offices.
- Promote the analysis, dissemination, and prompt use of vital and health statistics at all levels of the health services in order to facilitate planning, administration, and evaluation.
- Develop periodic sample household surveys, when required by conditions of the country, to obtain reliable baseline data on deaths (by age), fetal deaths, pregnancies and births, illnesses, and utilization of medical care services.
- Study and use in selected areas special methodology which may provide the missing statistical data more rapidly than the con-

ventional means. For example, this might include continuing surveillance of households in a sample or a defined geographic area, establishment of registration areas where information meets quality standards to measure and evaluate changes in health status in relation to health and socioeconomic measures, or other research on problems of local, national, or international interest.

• Establish international multidisciplinary teams to work intensively with personnel in selected countries to improve and integrate the various areas of the health statistics system.

• Establish additional regional training centers including three in biostatistics, three in medical records, and two in computer science (all at the professional level), and six in medical records, at the intermediate level.

• Provide the necessary facilities for the training of the following personnel as a minimum:

a) Professional level: 300 biostatisticians, 100 medical record librarians, 50 computer scientists.
b) Intermediate level: 250 health statisticians, 4,000 medical record librarians, 250 computer programmers. In accordance with the needs of a country, it may be useful to train a single type of personnel for both hospitals and health services.
c) Auxiliary level: 40,000 in health statistics or medical records.

• Promote the inclusion of courses on biostatistics in the curriculum of medical and public health schools.

• Orient personnel from other health disciplines on the value of maintaining records and statistics and on their utilization.

• Collaborate with civil registry and national statistical offices in the training of civil registrars.

RESEARCH ON HEALTH

Present Situation

Poor health constitutes a major barrier to economic development. Research is an indispensable means of uncovering causes of and preventing disease, finding remedies, and guiding the use of scarce resources. Research investments are rising rapidly in some countries, but in the Hemisphere as a whole the rate of increase is inadequate.

As far as the substance of health research is concerned, what most needs emphasis, encouragement, status, and prestige in Latin America is research arising from and directed toward the solution of important national health problems. The significance of basic research is fully acknowledged, and the proper balance between applied and basic research is recognized as necessary. However, greater emphasis is needed on applied research to solve the real problems that face a nation.

The Pan American Health Organization has been engaged in a regional health research development program which emphasizes: (1) support of individual investigations and research schemes in fields directly relevant to health problems in the Americas; (2) development of multinational programs to make the best use of existing resources and to encourage cooperative efforts in research and research training; (3) application of operations research methodologies to the planning and administration of health programs so as to assure maximum returns from investments in this sector; and (4) strengthening of communications among health scientists in the Hemisphere. Despite the results

achieved by the program, it is recognized that there are deficiencies in national efforts and gaps in the multinational programs. Furthermore, special efforts should be made to put the results of research into practice.

Recommendation

Each country to develop its own research infrastructure and collaborate fully in regional programs so as to be able to choose, use, and control scientific and technologic developments, as well as to use the power of those disciplines to create an ever healthier population and work force.

The following developments in research in the hemisphere are possible over the next decade:

• Carry out wider and more productive efforts to link research programs in various countries, for example, in communicable diseases (particularly virology and parasitology), nutrition, and human reproduction.

• Encourage training for health researchers. Such training should be based mainly on research lines taking into account the major health problems prevalent in each country.

• Develop the capacity of institutions to provide training for basic and intermediate level health manpower, with a view of increasing the numbers of such personnel.

• Establish a strong structure for advanced training to the doctoral level in the larger countries, which would reduce the need for training outside Latin America and more forcibly direct attention to indigenous programs.

• Develop more effective ways to assess the results of alternative priorities in public health programs, and obtain wider acceptance of administrative research and research in the social sciences.

• Every country should measure its research investment, a task few countries have adequately accomplished. Then it should try to invest between 0.5 and 1.0 per cent of its gross national product in research. A substantial proportion of this total research investment should be in the health field, within the national development goals for science and technology. Ministries of Health must play an important role in health research specifically by:

a) Formulating a national research policy in health, giving priority to problems of national importance and interest.

b) Urging that universities, institutes, and other research organizations concentrate both their basic and applied research in areas relevant to important national health problems.

c) Stating the case for health-sector research forcefully in the councils of state.

d) Providing the facilities to stimulate, encourage, and coordinate total national health research efforts in order to make the most effective use possible of necessarily limited resources.

e) Requiring that all major public health agencies under their jurisdiction quantitatively measure the results of their activities.

f) Providing advanced training and attractive career opportunities for exceptional people interested in research.

g) Fostering close contact among all health research centers and public health administrators.

h) Encouraging and rewarding the efforts of individuals and groups participating in public health programs, in order to study such problems as morbidity and mortality trends, nutritional status, and the epidemiology of specific diseases.

• Promote the creation of multidisciplinary groups for specific items, in accordance with the needs of the countries.

HEALTH MANPOWER

Present Situation

In the past decade there have been major changes in the health sector. The human resources participating in the process of producing health goods and services ceased to consist exclusively of individual professional health workers (physicians, dentists, pharmacists) distributed in simple production units (consulting rooms, offices, etc.), and oriented toward individual care, and became a team for public service with diversified personnel grouped in complex units (hospitals, polyclinics, health centers, group practice, etc.) increasingly oriented toward the community under government leadership.

However, this transition is taking place without the corresponding human resources having undergone significant changes in quantity, structure, or quality. This inadequacy does not relate only to a particular profession but to all the human resources, unadapted to its new functions.

There is a general lack of health personnel in the whole Region, and few countries have achieved an adequate level. In 1968 the data available on health personnel in Latin America and the Caribbean area showed that there were a total of 540,297 health workers (physicians, dentists, nurses, pharmacists, sanitary engineers, veterinarians, health inspectors, medical technologists, and auxiliaries).

The availability of health personnel varies considerably from country to country with a maximum of 40 and a minimum of three health workers per 10,000 population.

As for the occupational structure of the sector, the total human resources of Latin America and the Caribbean per 10,000 population in 1970 was as follows: physicians 6.9, nurses 2.3, auxiliaries 8.8, medical technologists 0.9, and public health administrators 1.6, distributed as follows:

University level	253,812 persons	(45 per cent)
Technicians	62,029 persons	(12 per cent)
Auxiliaries	224,456 persons	(42 per cent)

There is a general shortage of human resources; only a few countries have adequate levels. In addition, there is a marked imbalance in the occupational structure toward the higher levels. The insufficiency of the intermediate levels is the central problem of health manpower.

The training of higher level manpower in most of the countries is separate from the health sector and subject to decisions of the educational sector. The training of intermediate level manpower is inadequately structured, organized, and recognized and in most cases is circumstantial, to which must be added the fact that there is a lack of information about functions and quantification of the various aspects of the problem.

Recommendations

1. Develop procedures in each country for the planning of health manpower resources as an integral part of health planning.

FOR THAT PURPOSE, IT WILL BE NECESSARY TO:

- Promote health manpower planning as an integral part of the global processes of planning for economic and social development and as an integral function of the planning bodies of the health sector and the universities.
- Define the functions and personnel modules, both for health care and for administrative and supporting duties, that will help to increase the productivity of health teams. Strengthen information systems, and promote studies to adapt human resources to the characteristics of each country.
- Create, in accordance with the conditions of each country, new types of health personnel that will make it possible to increase service coverage primarily in rural areas.
- Encourage training for health researchers. Such training should be based in the main on

research lines taking into account the major health problems facing each country.

• Establish conditions for developing a process of intra- and intersectoral planning and coordination.

• Stimulate and coordinate research efforts in each country for improving manpower planning methods.

2. Develop the capability in each country of training personnel at the three levels, efforts being concentrated on the level that each national situation demands.

FOR THAT PURPOSE, IT IS NECESSARY TO:

• Strengthen health manpower training institutions and programs by increasing technical and financial assistance to universities and other institutions responsible for health manpower training. Improve the teaching-learning processes by means of the use of the most appropriate modern resources for this purpose.

• Develop the capacity of institutions to provide training for basic and intermediate-level health manpower, with a view to increasing the numbers of such personnel.

• Increase the use of health services for the training of personnel by integrating the student at an early stage into the production of services as an educational tool, in accordance with the concept of linking work with training.

• Redefine professional roles, within the framework of the health policy, in order to provide the bases for a revision of curricula.

• Increase the level of utilization of the installed teaching capacity by means of evening classes whenever necessary to achieve the quantitative targets proposed.

• Facilitate the access of workers to higher technical and professional training in health.

3. Develop, at the level of each community and with the active participation of institutions, mechanisms for raising its own level of health.

4. Development of organizations of human resources, FOR WHICH PURPOSE IT IS NECESSARY TO:

• Increase the output of health teams.

• Plan, simultaneously with its numerical expansion, equitable criteria for distribution of personnel.

• Establish, whenever possible, machinery for compulsory rotational assignment of recently qualified staff in those areas where no health care facilities are available, guaranteeing them adequate conditions of work and remuneration.

• Organize continuing education for graduate health professionals.

Physicians

Present Situation:

Generally speaking, data on the existence and availability of physicians are insufficient for planning purposes.

It is estimated that in 1970 in Latin America and the Caribbean area, there were 200,000 physicians (7.0 per 10,000 population, the range being 0.8 to 22.3), out of which 45 per cent were specialists with variations from one country to another ranging from 16.1 to 90.3 per cent.

Geographic distribution is inadequate and detrimental to the rural areas. It is estimated that only 5.5 per cent of all physicians work in communities with less than 20,000 population (59 per cent of the total population of the communities).

The productivity of the medical resources is low because of the shortage of nursing and auxiliary personnel, inefficiency of supporting services, underemployment or the practice of simultaneously holding a number of jobs, abandonment of the profession, migration, and a lack of career opportunities in the public subsector.

With respect to medical education, there are 159 schools with 25,000 students; more than 1,000 students graduate from two of them

each year, but for the remainder the average is 45. The dropout rate in the first to the final year of studies is 31 per cent.

Recommendations

1. Improve information on production, availability, and utilization of physicians as a basis for planning human resources development.

FOR THIS PURPOSE, IT WILL BE NECESSARY TO:

- Stimulate, improve, and strengthen information systems on medical resources, together with other health manpower.
- Define in each country and within its socioeconomic context, the responsibilities to be assumed by physicians who must be considered an integral part of the health team.
- Improve the use of physicians by updating their knowledge; ensuring effective support by paramedical personnel, including nursing and other diagnostic and treatment personnel; and overcoming causes of abandonment of the profession and migration.

2. Increase the physician/population ratio to 8.0 per 10,000, and improve the geographic distribution of physicians.

FOR THAT PURPOSE, IT WILL BE NECESSARY TO:

- Graduate 165,000 new physicians during the decade to offset abandonment of the profession; and improve their geographic distribution through the organization of training programs geared to the practice of medicine in rural and semiurban areas, the increase of salaries, and the improvement of certain working conditions in order to attract physicians to those areas.
- Train in the countries that deem it convenient medical asistants to help the existing medical resources.

3. Produce in each country the type of physician that local socioeconomic conditions demand.

FOR THAT PURPOSE, IT WILL BE NECESSARY TO:

- Design and develop programs to train physicians as required by the health policies.
- Integrate health and teaching systems, and provide flexibility in curricula and joint training of health teams.

Dentistry

Present Situation:

In most countries of the Region there is a shortage of dental health personnel. According to statistics published by WHO at the beginning of the past decade there was an average of 5 to 7 dentists per 10,000 population in developed countries. Statistics for Latin America and the Caribbean area show that in 1971 only three countries (Argentina, Chile, and Uruguay) had more than 3.5 dentists per 10,000 population. In more than 12 countries there is not yet one dentist per 10,000 population. The average for the area is approximately 1.9 dentists per 10,000 population.

If such a trend continues, the scarcity of students graduating from dental schools in the present decade will be maintained without preventing the increases required by the growth of population and dental health needs. Only a few countries have achieved an acceptable increase in the number of students they enroll and graduate in their dental schools. It is foreseen that there will be no substantial increase in the ratio of dentists per 10,000 population. This ratio will gradually improve in only six to eight countries.

Dentists are concentrated in urban areas. For example, in Colombia 91.7 per cent of the dentists are in communities with more than 25,000 inhabitants. The concentration of dentists in urban areas prevents dental care from being provided to smaller urban communities and rural areas where approximately 50 per cent of the Latin American and Caribbean population live.

No substantial efforts are being made to train dental auxiliary personnel, and there is no support or experience for their adequate utilization. The United States of America, which has five dentists per 10,000 population and a dentist/auxiliary ratio of 1:1.5, must, if its population is to be provided with adequate dental coverage in the coming years, maintain its present ratio of dental graduates per 10,000 population and achieve a dentist/auxiliary ratio of approximately 1:3. In Latin America and the Caribbean area, the ratio is the inverse, the dentist/auxiliary ratio being approximately 3:1. Present dental personnel training programs tend to maintain this ratio. There are approximately 100 dental schools and less than 30 regular courses for the training of auxiliary personnel.

Recommendations

For the area as a whole the following goals are proposed:

1. Increase by 20 per cent the present ratio of dentists per 10,000 population whenever that ratio in any country is lower than the present average for the area of 1.9 or lower than the average of the classification group.

2. Increase the training of auxiliaries so as to achieve by 1980 a dentist/auxiliary ratio of 1:1.

Nursing

Present Situation:

The current situation of available nursing personnel can best be described as one of acute shortage, which is hindering program development in its quantity and quality aspects. There are only 11.1 nursing personnel per 10,000 inhabitants, 2.3 being nurses, which in round figures is about 61,200 nurses and 238,870 nursing auxiliaries. There are 3.9 nursing auxiliaries per nurse, and the ratio of nurses to physicians is 0.3 to one.

Basic education programs. There are 257 schools of nursing. The average annual production for 103 schools is 17.2 nurses.

The number of known schools for midwives is 15, but no data are available on production. There is a tendency to consider midwifery postbasic to nursing, thereby incorporating these courses into nursing schools.

As for auxiliaries, the duration of the programs range from three months to two years. In 14 countries for which figures were available, the average annual production between 1968 and 1970 was 3,440 auxiliaries. The ratio between auxiliaries being graduated and nurses being graduated is 3.8 to 1, with the range being from 15.8 to 0.8.

Postbasic and complementary programs. There are approximately 62 postbasic and complementary programs in the Region, but the majority are in the field of nursing midwifery. There are insufficient courses for the training of personnel in the other clinical specialties and in the functional areas of teaching and administration.

Recommendations

1. Graduate in Latin America around 125,000 nurses and 360,000 nursing auxiliaries from educational programs which are coordinated and capable of producing the quality of personnel required by the health programs. For the countries of the English-speaking Caribbean the production should be such as to result in a work force of around 13,400 nursing personnel.

TO ACHIEVE THIS GOAL THE FOLLOWING ARE NEEDED:

• Increase in the Region the posts for nursing personnel by 134 per cent, and in Latin America increase the nurse positions by 184 per cent, in order to absorb the personnel it is proposed to produce. To obtain

the above number, the following alternatives are proposed:

Nurses:

a) Increase the production of the schools of nursing in Latin America to obtain an average of 97 graduates a year.
b) Create or strengthen programs at the intermediate level of education in order to graduate 70,205 nurses at this level.

Nursing Auxiliaries:

a) Increase the production of existing courses and/or increase new courses in order to obtain an average number of graduates per year of 36,000 auxiliaries.
b) Establish courses organized in a progression of steps in order to prepare other personnel in health institutions, health promotors, attendants, or other types of auxiliaries.

2. Create the conditions necessary to increase the number of graduates and to improve their preparation.

TO ACHIEVE THIS GOAL IT IS NECESSARY TO:

• Establish regional centers for the preparation of professors required for the different educational programs in the different clinical and functional specialties.

• Expand the physical and teaching facilities and include in the budgets the teaching positions required by the different educational programs.

• Establish programs making available fellowships or financial loans to students of basic and advanced programs.

• Establish the programs within a career ladder or within a system of credits that would make it easier for nursing personnel to pass from one level to the other.

3. Establish a center for the development of educational technology and research in the different nursing areas.

4. Integrate teaching with nursing services.

Supporting Personnel for Diagnosis and Treatment

Present Situation:

In Latin America and the Caribbean area there is a great shortage of supporting diagnostic and treatment personnel. It is estimated that in the Region there are about 26,000 technicians and auxiliaries (i.e., 0.9 per 10,000 population) in the following fields:

Laboratory and related services.
Radiology, radiation, and related services.
Mental health and related activities.
Electromedicine.
Rehabilitation and physical therapy.
Pharmacy and related areas.
Nutrition, dietetics, and related areas.
Medical librarianship and medical records.

In all these areas, there is a shortage of qualified personnel. The importance of this personnel is fundamental, and owing to the specialized training they receive, it is difficult and expensive to replace them. The possibility of replacing them is very limited, and sometimes they can only be replaced by personnel with broader training. In many cases, the shortage of supporting personnel has been made up by nursing personnel, which tends to worsen the shortage in that profession.

Generally speaking, supporting diagnostic and treatment personnel are relatively well used. The social prestige of these specialties, the relatively independent nature of their duties, and the sense of professional recognition provide a certain satisfaction and help to keep attrition down.

Most of these workers serve in medium-sized and large hospitals so that major problems of geographic distribution do not arise. In the case of laboratory, nutrition, and pharmacy personnel, however, a shortage is believed to exist in the small hospitals serving rural areas.

Recommendations

1. Define as part of the manpower planning of each country, the duties, prerogatives, and responsibilities of supporting diagnostic and treatment personnel at the university, technical, and auxiliary level.

TO REACH THAT GOAL IT WILL BE NECESSARY TO:

- Obtain reliable information on the existence and use of the existing resources.
- Define the functions of this personnel, undertaking studies, where necessary, and promoting the establishment and recognition of different professions.

2. Increase the ratio of such personnel to 3 per 10,000 population.

FOR THIS PURPOSE IT IS NECESSARY TO:

- Develop teaching institutions at the university, technical, and auxiliary levels, incorporating schools for medical technicians into health science faculties, or through other coordinating mechanisms, using the possibilities of the medical care network of Ministries of Health for the three levels of personnel.

Personnel Specialized in Public Health

Present Situation:

Statistical personnel are in very short supply. Only 25 per cent of the countries have systematic information available on institutional resources and in only 10 per cent of the cases are they considered acceptable.

The number of epidemiologists needs to be increased in order to have a ratio of 1 per 250,000 population for surveillance activities alone. A rise in the demand is expected.

The number of health education personnel varies considerably from one country to another. Only 30 per cent of the persons working in this field have been formally trained in schools of public health.

There is also a shortage in most countries of personnel trained in nutrition and food technology. Centers for specialized training in nutrition lack both faculty and resources, and the teaching of this subject in institutions where other health personnel are trained is inadequate.

No data are available on the utilization of personnel with specialized public health training. Partial studies have given results that vary from country to country. The factors of remuneration and professional status appear to have considerable bearing on the utilization of this personnel.

The small size of public health budgets is undoubtedly a major limiting factor in efforts to produce satisfactory levels of manpower of the requisite quality.

Recommendations

1. Train sufficient personnel at all levels in the various health fields to cope with a situation which is characterized by increasing specialization and complexity.

FOR THAT PURPOSE IT WILL BE NECESSARY TO:

- Develop and strengthen institutions for the training of public health manpower at the advanced-professional, professional, technical, and auxiliary levels.
- Develop inservice training for individuals already working in the public health field who have not received training in an institution, and continuing education programs designed to provide orientation, reconversion (owing to changes in a technical field in response to needs), or further training in a specialized field.

2. Ensure full utilization of all trained personnel.

FOR THAT PURPOSE IT WILL BE NECESSARY TO:

- Improve programming mechanisms, overcome the causes of professional attrition,

establish professional and technical services, raise salaries, and improve incentives.

Personnel Specialized in Environmental Health

Present Situation:

On the basis of general surveys and detailed studies in a few countries, it is estimated that there are more than 1,000 engineers currently working in public health institutions. Most of them have had some formal training in sanitary engineering. In addition, it has been estimated that several hundred qualified sanitary engineers are working as private consultants or in organizations outside the health field.

About 4,000 engineers, mostly civil engineers, work in water supply, sewerage, and other services. About 3,000 sanitary inspectors are working in environmental sanitation programs in Latin America and in the Caribbean area.

A survey of 54 universities in Latin America and the Caribbean area showed that 17 universities offered civil engineers the option of taking more than one course in sanitary engineering and that three universities offered complete undergraduate specialization in sanitary engineering.

In 1971 there were more than 200 students in graduate programs in sanitary engineering in nine universities. During the past decade there was an increase in the number of full-time sanitary engineering faculty members at schools of engineering to the present total of about 50.

Concurrently with these developments, a coordinated system has been developed for continuing professional education and for the technical training of allied personnel, and this now constitutes a continental network of cooperating universities. In 1970 there were 38 universities in 23 countries in this network offering 60 to 70 courses; these were attended by some 2,000 professional and allied personnel annually. In many instances full-time faculty posts in the universities, as well as student fellowships, were being provided by the Ministries of Health and Public Works in the various countries.

The proposed goals for water supply, sewerage, environmental pollution control, occupational health, food hygiene, and other present and emerging responsibilities of environmental health officials, coupled with the increased use of new technologies, point to the need for sharply increasing the present production, not only of sanitary engineers, but also of biologists, chemists, toxicologists, plant operators, administrators, and related staff. Similarly, short-term and inservice refresher training will have to be intensified. Further, and most important, present education and training programs will need to be studied critically and, if necessary, reshaped to bring them in line with emerging requirements, taking into account also the need for new professions. Joint and coordinated training of specialists in various fields to obtain multidisciplinary approaches, where required, will be another subject for consideration.

It will also be necessary during the next decade to develop programs directed at encouraging the rational transfer of technology, based on the evaluation and study of the adaptability of new techniques to the particular circumstances of the country concerned.

With respect to research needs, there are still gaps in our knowledge of the technical, social, and economic factors involved in mass water supply and sewerage programs and other environmental measures which need to be filled in as soon as possible.

Recommendation

Train a sufficient number of professional, technical, administrative, and managerial personnel with sufficient experience, education, and research capacity to provide the necessary environmental health services for

the coming generation and for monitoring environmental changes and trends. For this purpose, it will be necessary to train 320 students annually in graduate sanitary engineering programs; organize short courses for 3,000 professional and technical personnel every year; and increase to 2,000 the number of sanitary engineers in public health programs, to 5,000 the number of engineers in water supply, sewerage, and other environmental services, and to 4,000 the number of sanitary engineers in public health services.

FOR THAT PURPOSE IT WILL BE NECESSARY TO:

- Review and update teaching programs and curricula and improve laboratories and other facilities for the teaching of environmental engineering and for the organization and development of research projects.
- Organize new graduate courses and increase the registration in existing environmental engineering graduate courses.
- Promote and encourage more communication between the universities of the Pan American educational network and the exchange of information and research findings through publications, correspondence, and teaching staff visits.
- Expand training activities in general and organize intensive courses in particular, enlisting the cooperation and participation of national and international agencies.
- Incorporate research as a normal component of the teaching process.
- Support and expand continuing education programs, as well as information centers in universities.
- Enlarge the Pan American educational network of cooperating universities and extend the scope of its activities.
- Systematize the exchange of qualified personnel between the university faculties and operating agencies and between desk jobs and field jobs in environmental health services in order to blend theoretical concepts with working realities.
- Expand and diversify fellowship programs in environmental engineering.
- Establish regional centers for the training of experts in the management and administration of programs and services.

Veterinary Medical Manpower

Present Situation:

The success of the programs for the control of zoonoses and foot-and-mouth disease, with the resultant reduction in losses to human health, and the increase in the availability of proteins of animal origin will depend primarily on the availability of a broad infrastructure of veterinary manpower.

In most of the countries of Latin America programs in veterinary medical education are very limited and lack the capability, under the current system, to meet the targets or achieve the objectives as they are now set forth. Shortages are most acute of personnel trained in the planning of animal health programs, diagnosis, and the reporting of disease prevalence.

While the demand for veterinarians is constantly increasing as a result of the development of national programs for controlling foot-and-mouth disease and the zoonoses, the schools of veterinary medicine are now working at the maximum limits of their capacity.

Recommendation

Increase trained personnel for veterinary services, both in quality and quantity.

FOR THAT PURPOSE IT WILL BE NECESSARY TO:

- Expand the capacity of schools of veterinary medicine, provide them with increased full-time faculty, improve their laboratories, and update their curricula.
- Establish postgraduate and continuing education programs.
- Promote, develop, and organize programs for the training of a corps of animal health

assistants in each country prepared to undertake a major campaign for controlling zoonoses and foot-and-mouth disease.

• Promote a greater degree of coordination of the efforts of Ministries of Agriculture, Health, and Education to solve the veterinary manpower problem in the various countries.

Personnel Specialized in Medical and Hospital Care Administration

Present Situation:

In Latin America and the Caribbean area, more than 70 per cent of the hospitals with over 100 beds are managed by staff who have had no training whatsoever in administration.

In 18 countries no clearly defined policy exists for training professional personnel engaged in medical and hospital care administration. Of 28 countries in the Region, only 10 have regular educational and training programs in the areas of medical and hospital care. Programs vary widely in duration and degree of training (from two to 18 months), numbers of students graduated, curriculum offered, quality of the instruction, and institutional affiliation.

With the exception of four countries, hospital administration in the Region fails to offer an official career with security of tenure. In all but three of the countries, the salaries are not high enough to attract and hold full-time staff in these services. Other than in two countries, there are no opportunities for continuing education in hospital administration for professional personnel.

Progressive increases in the demand for medical and hospital care, together with the mounting complexity of medical care procedures and the growing unit cost of services in relation to limited resources, bear out the urgent need for improved administrative systems.

Recommendations

1. Formulate in each country a training policy for professional personnel engaged in medical and hospital care administration.

2. Increase production levels of personnel trained in medical and hospital care administration so that:

• At least 60 per cent of all hospitals with more than 100 beds will have, as a minimum, a medical director and a chief of nursing services specifically trained in medical and hospital care administration.

3. Increase the utilization of professional personnel trained in medical and hospital care administration so as to ensure that more than 75 per cent of these personnel are assigned to posts at directing levels.

TO REACH THIS GOAL IT IS NECESSARY TO:

• Define and implement a policy for the training of professional personnel working in medical and hospital care administration. Increase the number of regular training programs in hospital administration so as to obtain good quality and quantity of professional staff to meet the needs.

• Establish a public service career for staff members in administrative posts and provide incentives and salaries, based on full-time service, that are adequate to attract and hold them.

TECHNOLOGY AND TEACHING RESOURCES

Regional Libraries

Present Situation:

A survey carried out in 1970 and 1971 of 231 biomedical libraries in 15 Latin American countries confirmed the well-known shortages of information in the health sciences and of librarians to provide that information. Those shortages prevent biomedical libraries from providing efficient service and lead to conse-

quent deficiencies in teaching programs, research, and the practice of the health professions in Latin America.

The PAHO Regional Library of Medicine was established in São Paulo, Brazil, in mid-1967 to help remedy these deficiencies. The experience gained by the Library in its first three years of operation in Brazil has been used to develop the best ways to extend its services to other countries in South America and to formulate a plan for establishing a Pan American health communications network.

Recommendations

1. Establish national documentation systems for the health sciences in the countries of Latin America, to be linked among themselves and with the Regional Library of Medicine and with the National Library of Medicine of the United States of America, in a Pan American scientific documentation and information network.

2. Train the necessary personnel for the normal operation of these services.

TO REACH THESE GOALS IT WILL BE NECESSARY TO:

- Establish a register of the units in the Region that generate, use, store, process, and disseminate scientific information on health matters.
- Improve the planning, organization, and administration of the libraries, and redefine their role in relation to the general activities of the health services, institutions of higher education, and health research centers.
- Establish medical libraries in the countries to serve as the basis for eventual national health-science documentation and information systems.
- Consolidate and expand the capability of the Regional Library of Medicine in São Paulo to provide information and training services to libraries in the countries.
- Establish a Pan American network for the dissemination of scientific information, developing an interlibrary loan system and applying the most up-to-date procedures available in communications technology and data analysis, storage, and retrieval in the service of the health sciences.
- Create centralized services for the purchase and processing of books and journals so as to avoid unnecessary duplication and facilitate importation and customs clearance.
- Carry out general evaluative studies of the programs under way at the Regional Library of Medicine, including a review of costs, yield, demand, needs, and other factors that enter into perfecting the scientific information systems and the quality of operations.
- Train larger numbers of librarians, expand facilities at the national and international level for their advanced instruction and specialization in biomedical documentation services, and provide them with access to master's and doctoral degree programs.
- Expand facilities at the national level for the training of auxiliary library personnel.
- Compile national and international catalogs of scientific and technical publications available in Latin America's biomedical libraries.
- Promote better representation of Latin American literature in the *Index Medicus*.

Textbooks and Teaching Materials

Present Situation:

The shortage throughout the universities of Latin America of textbooks, journals, reference books, programmed texts, and audiovisual aids, among other resources, is preventing their academic staff from implementing the pedagogical modernization being called for in each and every teaching activity in order to keep pace with the process of social change and the new aims of education that such a change creates.

It is foreseeable that the economic problems involved in the purchasing of teaching materials and equipment will worsen during the decade, both for students and for the institutions themselves.

It is expected that other kinds of teaching tools, such as basic diagnostic equipment, will become part of the curricula during the decade and will require the development of financing arrangements similar to those needed for textbooks if the students are to have access to them.

Recommendation

Develop programs designed to provide textbooks and teaching materials and equipment of high scientific and pedagogical quality, at low cost, to the students in the Region's schools of health sciences.

FOR THAT PURPOSE THE FOLLOWING ACTIONS WILL BE NEEDED:

- Establish a permanent liaison in the academic community in order to maintain information on textbooks and teaching materials up to date.
- Establish mechanisms to permit the low-cost production of selected teaching materials and equipment and the distribution thereof to specially organized local units within each institution. Specifically, it is proposed with this end in view:

a) To produce approximately 10,000 books a year in each subject during the first five years and an average of 15,000 from the date when it is presumed that all the institutions in the system will be participating.

b) To sell approximately 7,000 copies during the first five years and 10,000 during the following years once the program has reached the scope evisaged. By this stage, some 75 per cent of the total student body would already be buying books, there being by that time an estimated 12,000 students enrolled annually in each subject.

c) To organize local administrative units in each institution, with personnel especially trained for the distribution of the materials, who would be provided with the procedure manuals and office supplies necessary to carry out the program effectively.

- Establish mechanisms to permit the continuing financing of such a high-cost program.

PAN AMERICAN HEALTH UNIVERSITY

It is proposed to set up an integrating mechanism that will permit unification of the best educational and research centers in Latin America and the Caribbean area, linking them whenever necesary with educational institutions in the United States of America and Canada, and developing, on the basis of such a system, a methodology for training health manpower, highly qualified and of the highest level attainable. With the health problems of the Region and of each of the countries as the central motivation, the idea would be to have the training rooted in research and the solution of concrete problems, and to have as a basic goal the elimination of the division that sometimes arises between teaching and the rendering of services.

The integration of the network activities and coordination of all programs would have to be entrusted to a central coordinating group comprising a small nucleus of scientific and technical personnel properly qualified in health and education, for whom the Pan American Health Organization, responsible

for selecting the group's members, would ensure the secretarial and administrative support required for the performance of its functions.

Such a mechanism would be called "Pan American Health University," although it is understood that it would not be a "university" in the traditional sense of the word.

The objectives of the Pan American Health University would be:

1. To contribute, through the coordination of existing capabilities and promotion of new ones, to the identification of the health problems of the Hemisphere, and to the development of new methods and approaches in dealing with them, stimulating original thinking and scientific and technological creativity.

2. To promote advanced training at the postgraduate level for health professionals of the Hemisphere, in areas of knowledge and methods of action linked to problems having priority for their respective countries.

3. To identify existing high-level education and research centers in the health field in the various countries of the Hemisphere, help in the development of new centers, expand existing capabilities for education, research, and training, and facilitate maximum utilization of the latter.

4. To arrange with the technical departments and other organs of PAHO or with others in which it participates to a significant degree, for the purpose of effecting better coordination of efforts made in postgraduate education, strengthening programs and activities in the health field, and developing an overall policy for the Organization, at that level.

The University would operate within the frame of reference established by PAHO's general policy for the training of health manpower.

On the basis of these basic points, it was decided to present this item at the III Special Meeting of the Ministers of Health of the Americas, in the firm belief that the Governments would adopt a resolution giving shape to the Pan American Health University in accordance with the concepts specified in the relevant document.

With regard to the operative part, some delegations included it in their overall approval of the scheme, while others expressed doubts and reservations on the subject. The latter had to do mainly with the desirability of the proposed system, the complexity of the tasks involved and the extent of the functions of the so-called "central coordinating body," the difficulty of articulation of institutions in different countries, and the absence of explicit information concerning the selection of candidates, the determination of priorities, etc. Some delegations feared that the establishment of the University would be just one more bureaucratic body or would upset the programs of health personnel training being carried out with such notable success by PAHO, and in particular its Department of Human Resources Development. Other delegations, on the other hand, considered that the establishment of the University would tend to strengthen, expand, and make more systematic what PAHO was doing for the training of health professionals. Some felt that, in a sense, the University already existed, for practical purposes, and that all that was needed was to formalize its operation. The discussion also covered the financial implications of the scheme, which, in the view of some delegations, could hamper the distribution of resources to the various countries; this was denied by others. Stress was laid on the desirability of analyzing the programs already being carried out by PAHO in the field of human resources development, and some delegations considered that the strengthening of those programs might be a more satisfactory way of achieving the purposes intended.

Finally, it was proposed that PAHO should endeavor to pinpoint those teaching and research centers which could be used at the national level, to provide specialist facilities for graduates in the health sciences.

The Director of the Pan American Sanitary Bureau gave an account of the basic educational policy which had led PAHO to propose the establishment of the University and clarified some of the doubts expressed by certain delegations.

Recommendations

In view of the lack of consensus among the delegations, a proposal was approved to take a separate vote on the objectives of the project and on the ways and means of attaining them.

The following proposed objectives were approved by 21 votes to none, with one abstention:

1. To contribute, through the coordination of existing capabilities and promotion of new ones, to the identification of the health problems of the Hemisphere, and to the development of new methods and approaches in dealing with them, stimulating original thinking and scientific and technological creativity.

2. To promote advanced training at the postgraduate level for health professionals of the Hemisphere, in areas of knowledge and methods of action linked to problems having priority for their respective countries.

3. To identify existing high-level education and research centers in the health field in the various countries of the Hemisphere, help in the development of new centers, expand existing capabilities for education, research and training, and facilitate maximum utilization of the latter.

With regard to the mechanism for implementing the above proposals, the following recommendation was approved:

"That this should be implemented by strengthening and perfecting the machinery already available to the Pan American Sanitary Bureau."

THE SYSTEM OF LEGAL INSTITUTIONS AS IT RELATES TO HEALTH

Present Situation

The actions of individuals, groups, or the public services regarding the health of persons and of the population at large are very much influenced by the prevailing system of legal institutions. Traditionally, the relationship of the health sector to the legal system has been a superficial one, limited to references to "legislation in force" or "the lack of legislation," and considering the law to be an instrument for change or for restricting action—an attribute that in and of itself it does not possess. As a result, the failure of services to operate as planned or the ineffectiveness of programs may be explained away as due to deficiencies in existing legislation or to oversights in specific regulations.

A review of the situation reveals that there is a large body of legislation and regulations that is not being effectively applied; that there are certain established principles and powers that have not been applied in the form of instruments or used in the way they should be; that some areas have been overregulated while others, which have not been considered critical or have not been the focus of special interest groups, have been left virtually untouched.

Public health administrators need to have a better understanding of the different com-

ponents and levels that make up the legal framework, of the function of each, and of the nature, weight, and extent of their influence on action in the health sector.

The demands that the technical groups in the health sector make on the prevailing legal institutional system, particularly regarding the concrete form that the public health service is to assume, tend to lack clarity, definition, and consistency.

On the whole, there is a scarcity or total lack of information in the sector regarding certain orders of problems that are inextricably connected: (a) those deriving from the nature of the bodies that frame or amend legislation, of the formal machinery they employ, and of the methods they adopt; (b) those concerned with the substantive and formal content of existing legislation that bears on health; (c) those related to the consistency of this legislation, whose precepts, although they may be set forth in various forms (as special substantive rules, laws establishing the power and prerogatives of the public agencies, or sanctions), are all directed toward the common goal of individual and collective health; and (d) those bearing on the real effect of this legislation, based as it is on the ways and means at the disposal of the legal system to ensure its compliance.

The thinking of the health sector does not always coincide with that of the agencies responsible for framing, amending, and applying the pertinent legislation. The expression "thinking" is understood here to include all that relates to the set of knowledge, beliefs, and attitudes held by the agencies concerned.

Recommendations

1. Reformulate the problem within the wider framework of the legal institutional system, and study the situation in each country, systematically summing up the demands that the technical groups in the various fields of the health sector wish to make in the legal system and identifying the components or levels of this system to which the demands should be directed.

2. Define the health problems that call for the establishment of specific rules and regulations or the framing of laws.

3. Systematize current legislation and issue corresponding regulations to permit its enforcement.

4. Recognize and standardize the relationships with the social control agencies responsible for strengthening the action of the health authority and with those bodies charged with applying the law and the related sanctions.

FOR ACHIEVING THESE GOALS IT WOULD BE NECESSARY TO:

- Carry out research that will provide a full understanding of the legal system and make it possible to assess the effectiveness with which it serves the purposes of the health sector in the different countries.
- Promote the development of complete codes and regulations for the full implementation of existing legislation in the different countries of the Region.
- Promote the systematization of existing legislation through the publication of updated compendia in the different countries.
- Organize interdisciplinary seminars with a view to clarifying attitudes regarding the functions of the legal system and the expectations that the technical personnel of the health sector may entertain in this regard; foster an exchange of views between the health and legal professions on approaches to health problems, and determine jointly which are the critical areas of regional health problems that appear to require at least coordinated and harmonized legislation.
- Improve the teaching of the basic ideas and principles of administrative law and

health legislation in the schools of public health and in university courses on preventive medicine.

• Train practicing lawyers and others interested in the subject in comparative health legislation, in order that the Ministries of Health may have complete full-time legal units that will be active in proposing and drafting new laws and regulations and in systematizing and modifying existing ones.

ANALYSIS OF THE FINANCING OF THE PROPOSALS IN THE TEN-YEAR PLAN

An estimate of the cost of achieving the goals set forth by this Meeting must be stated in the most general of terms, given the lack of sound data available. Accordingly, the estimates suggested here are intended to convey only orders of magnitude.

In 1970 the public health sector in this Region expended approximately 1.6 per cent of the regional gross internal product (GIP). The most optimistic rate of real increase in GIP is estimated at approximately 6.6 per cent per year. The growth rate of GIP in the last decade was 4.9 per cent per year. The estimated rate of population growth in the Region for the decade is estimated at 33 per cent.

By increasing the health investment of the public sector by 7 per cent per year the percentage of GIP stemming from the public health sector would rise only to 1.65 per cent of GIP if it grows at the rate of 6.6 per cent. This increase would provide approximately 94 per cent more funds for the decade and on a per capita basis would provide 45 per cent more funds for increased services and coverages. The goals would be met within these funds.

Since, however, an increase in expenditure in the magnitude of 7 per cent is not considered to be within the financial capabilities of the Region's economies, other means must be found to provide the requisite funds for financing the goals. Chief among these are the following:

1. Eliminate duplication of services.

2. Increase the productivity of the system as a whole.

3. Adopt low-cost technology in preference to high-cost technology.

4. Optimize the use of technology.

5. Increase the depreciable life of equipment by pervasive maintenance programs.

6. Establish self-help programs at the community level to stimulate interest and conserve funds.

7. Establish multinational planning processes to ensure against unnecessary duplication of major activities.

8. Recommend that PAHO organize meetings of officials responsible for planning and information in the countries of the Americas in order to work out measures for implementing the proposed strategy. The meetings would be convened as considered necessary by PAHO and in accordance with the funds available.

In summary, then, to achieve the goals it is essential that the annual level of expenditure in the public sector be increased commensurate with the annual increase in the gross internal product and the strategy advocated above be followed.

In view of the inadequacy of the information available on financial matters, and bearing in mind the importance of this factor, the

III Special Meeting of Ministers of Health recommends that PAHO organize and collaborate with the countries in a program of research on sectoral investment in health. This research should provide a continuous flow of information for use in decision-making. Aspects to be studied should include the economic, functional, and social purpose of investments; the source of the funds; the forms and system of financing; costs; and functions of production.

National priorities for the attainment of goals of the Ten-Year Health Plan will be fixed in the light of these studies and the economic, social, and political situation of each country.

Part III

GOALS OF THE TEN-YEAR HEALTH PLAN FOR THE AMERICAS, 1971-1980

GOALS OF THE TEN-YEAR HEALTH PLAN FOR THE AMERICAS

THE III SPECIAL MEETING OF MINISTERS OF HEALTH OF THE AMERICAS,

Bearing in mind:

That the General Assembly proclaimed the 1970's as the Second United Nations Development Decade, beginning on 1 January 1971, and simultaneously adopted an International Development Strategy for the Decade;

That the objectives of the Ten-Year Public Health Program contained in the Charter of Punta del Este have been achieved to a considerable extent, and that, with reference to the problems of the Region, the 1960's yielded valuable experience on the ways of solving them, as well as a better knowledge of the dynamics of health and disease in the Americas;

That the mutual relationship between health, economic development, living standards, and well-being has been more clearly recognized;

That the ecological concept of health has been generally accepted as a continuing process of adaptation of human beings to their environment, which they can either damage or enhance;

The expected trends in socioeconomic development and in the planning processes in the Hemisphere;

Considering:

That the general view of the problems in the light of the experience gained indicates that major health efforts must be devoted to the consolidation of the existing services and to their extension so as to ensure the provision of comprehensive health care to communities not yet covered, in both rural and urban areas;

That programming for the decade should bear in mind that the increase in the population by 1980 is estimated at 24 per cent in the Hemisphere and 33 per cent in Latin America and the Caribbean area;

That some of the health problems contributing most to mortality and morbidity can be prevented or controlled by simple and economical techniques applied through the organization and operation of effective health systems endowed with adequate funds;

That there is an awareness of the need for plans and programs to be formulated not for isolated problems but on the basis of a careful selection of priorities, a clear definition of objectives, the application of efficient standards and techniques, and the development of evaluation and information schemes within a single system of program articulation and institutional coordination;

That human resources are the basic element for the structure and function of a health system, and that their education and training must be planned according to the more important health needs and problems in each country and to the feasible methods for their progressive solution;

That there should be close association between Ministries of Health and universities for the reform of teaching in the health sciences, designed to bring it more into line with the situation of the countries of the Hemisphere;

That the imbalance between needs and human, physical, and financial resources makes it imperative to obtain the highest possible yield from existing resources, and at the same time to seek new patterns for the delivery of

health services and sectoral financing;

That in order to provide comprehensive medical care, investment of national funds and external capital must inevitably be increased;

That health planning must be integrated into economic and social development planning from the preinvestment stage, particular attention being paid to regional development, whether national or international;

That as in the past decade the attainment of the objectives established will depend in each country on its particular characteristics, possibilities and experience, and that health progress in the Hemisphere will therefore appear as a great mosaic of national achievements in accordance with each country's economic and social development policies;

RESOLVES:

To recommend to the Governments the following goals for the Ten-Year Health Plan covering the period 1971-1980:

To consider, as a basic requirement for achieving the goals under the plan, the definition in each individual country of the health policy, in the light of its economic and social development, specifying clearly the objectives and structural changes necessary to achieve them.

I. PROGRAM OF SERVICES

1. Services to Individuals

Extension of coverage, including minimum comprehensive services, to all the population living in accessible communities of less than 2,000 inhabitants, and provision of basic and specialized services to the rest of the population, by means of a regionalized health system, priority being given to the following:

1.1 *Communicable Diseases*

Maintain smallpox eradicated.

Reduce mortality from measles, whooping cough, and tetanus to 1.0, 1.0, and 0.5 respectively per 100,000 inhabitants;

Reduce morbidity from diphtheria and poliomyelitis to rates of 1.0 and 0.1, respectively, per 100,000 inhabitants.

Reduce mortality from tuberculosis by not less than 50 per cent.

Reduce the rates of mortality from enteric diseases by 50 per cent.

Reduce the incidence of venereal diseases, especially gonorrhea and syphilis, and eradicate yaws and pinta.

Cut down the incidence of leprosy, typhus, schistosomiasis, oncocerciasis, Chagas' disease, and jungle yellow fever, and keep plague under control.

Eradicate malaria in areas where there are good prospects of reaching this goal, involving a population of approximately 75 million inhabitants. Maintain eradication where it has already been achieved. Apply in the "problem areas" the new techniques derived from research, and give intensive stimulus to research activities.

Eradicate *Aedes aegypti* in the countries and territories still infested, and prevent the penetration of the vector into areas from which it has been eliminated.

1.2 *Maternal and Child Health and Family Welfare*

Develop sectoral and promote intersectoral programs in order to:

a) Reduce mortality in children under one year of age by 40 per cent with a range of 30 to 50 per cent.

b) Reduce mortality in children from one to four years of age by 60 per cent, with a range of 50 to 70 per cent.

c) Reduce maternal mortality by 40 per cent, with a range of 30 to 50 per cent.

d) Offer families the opportunity—provided this is not at variance with national policy—to obtain adequate information and services on problems related to fertility and sterility.

1.3 *Nutrition*

Reduce grade III protein-calorie malnutrition in children under five years of age, on a regional average, by 85 per cent and grade II by 30 per cent. In countries where it is feasible, these goals will be separated for children under one year and from one to four years.

Reduce by 30 per cent the prevalence of nutritional anemias in pregnant women, and that of endemic goiter to less than 10 per cent, eliminating cretinism, and reduce hypovitaminosis A in vulnerable groups at an average regional rate of 30 per cent.

1.4 *Other areas*

As far as the availability of resources permits and in accordance with national policies, each country should establish priorities and targets corresponding to chronic diseases, cancer, mental health, dental health, and rehabilitation.

Pay special attention to the medico-social effects of the growing dissemination in some countries of the use of alcohol and dependency-inducing drugs, and the increase in mental health problems caused *inter alia* by urbanization and industrialization.

2. Environmental Sanitation Programs

2.1 *Water Supply and Excreta Disposal Services*

Provide water services with house connections for 80 per cent of the urban population, or as a minimum, supply half the population at present without services.

Provide water for 50 per cent of the rural population, or as a minimum, supply 30 per cent of the population at present without services.

Install sewerage to serve 70 per cent of the urban population, or as a minimum, reduce by 30 per cent the proportion of the population at present lacking such services.

Install sewerage systems and other sanitary facilities for the disposal of excreta for 50 per cent of the rural population, or as a minimum, reduce by 30 per cent the number of inhabitants not possessing any adequate facilities.

2.2 *Solid Wastes*

Establish adequate systems for the collection, transport, treatment, and disposal of solid wastes in at least 70 per cent of cities with 20,000 population or more.

2.3 *Environmental Pollution*

Establish policies and carry out programs for the control of water, air, and soil pollution, noise abatement, etc., in line with basic environmental sanitation and industrial development and urbanization.

2.4 *Regional Development*

Ensure the active and systematic participation of the health sector in the formulation and execution of regional, national, and multinational development plans.

2.5 *Occupational Health*

Ensure protection for 70 per cent of workers exposed to presumed or recognized occupational hazards in countries already having programs fully operating, and 50 per cent in countries which still have not developed programs adequately.

2.6 *Animal Health and Veterinary Public Health*

Help to control and eventually eradicate foot-and-mouth disease in South America and prevent the introduction of the disease into the countries free of it.

Help to reduce the incidence of the most common zoonoses, with special emphasis on rabies, brucellosis, bovine tuberculosis, hydatidosis, and equine encephalitis.

2.7 *Food and Nutrition Policy*

Attain in each country the formulation and execution of a food and nutrition policy, biologically based, that will make it possible to reach the nutrition goals, ensuring the availability and consumption of food to satisfy the nutritional needs of all population groups.

2.8 *Quality Control of Foodstuffs*

Reduce human diseases and the economic losses caused by biological, physical, and chemical pollution of food and by-products, at the same time maintaining their quality.

2.9 *Quality Control of Drugs*

Carry out programs in all the countries for the quality control of both nationally produced and imported drugs.

2.10 *Control of the Use of Pesticides*

Reduce morbidity and mortality caused by the improper use of pesticides.

2.11 *Prevention of Accidents*

Reduce the proportion of traffic and industrial accidents and of those occurring in the home and in places of recreation and tourist resorts, and thereby reduce the number of deaths and disability cases.

3. Supporting Services

3.1 *Nursing*

Organize nursing in at least 60 per cent of countries, as a system in which the level of nursing care and the staffing required to meet the health goals of each country are defined.

3.2 *Laboratories*

Extend coverage and organize as "systems" the laboratories responsible for diagnosis, production of biologicals for human and animal use, and maintenance of blood banks needed to support health programs.

3.3 *Epidemiologic Surveillance Systems*

Create and maintain epidemiologic surveillance units in accordance with the national organization and regionalization structure of each country; so as to ensure a continuous supply of information on the epidemiologic characteristics of health problems and the factors governing them, and thus enable timely action to be taken.

3.4 *Health Education*

Organize health education as part of the process of active and informed participation of communities in all action for the prevention and cure of disease.

II. DEVELOPMENT OF THE INFRASTRUCTURE

To ensure the achievement of the proposals under the plan, it is essential to:

1. Health Systems

Install and develop in each country a health system adapted to its national characteristics and determined in the light of the sectoral policy.

2. Planning

Establish and expand in each country the health planning process as an integral part of socioeconomic development. Organize sys-

tems of information, evaluation and control. Improve health statistics.

3. Research

Undertake research with a view to determining the effects of various alternatives within the sectoral policy and defining methods or techniques calculated to increase the productivity and effectiveness of services. Develop systematic studies on costs and financing.

4. Operational Capacity

Increase operational capacity at the institutional and sectoral level through:

a) Coordination or integration of the State, para-State, and private institutions which together make up the health sector.

b) Initiation or strengthening of the processes of administrative, sectoral, and institutional reform.

c) Formulation and execution of programs for services, infrastructure, external assistance, and preinvestment studies.

d) Promotion of the proper communication among the infrastructures of the various sectors in order to achieve, through coordinated programs, the concentration of intersectoral resources to the high risk population, with the aim of preventing illnesses and deaths.

5. Development of Human Resources

Achieve a regional average of 8 doctors, 2 dentists and 2.2 dental auxiliaries, 4.5 nurses and 14.5 nursing auxiliaries per 10,000 inhabitants, and improve their geographic and institutional distribution.

Train in the course of the decade a minimum of 18,000 veterinarians and 30,000 animal health auxiliaries.

Train in the course of the decade a minimum of 360,000 nursing auxiliaries and produce 125,000 nurse graduates, especially at the intermediate level.

Train 3,200 professionals in the course of the decade in postgraduate programs and 30,000 professionals and technicians in short courses in sanitary engineering and other environmental sciences.

Train during the decade 300 professional level statisticians; 100 professional medical records officers; 4,000 intermediate-level medical records officers; 250 intermediate-level statisticians, and 40,000 statistical auxiliaries.

Train during the decade 3,000 planners and 3,000 administrators at the professional level, and 1,000 professionals in health information systems.

Promote development of general medical practice to the extent required by the organization of the services and the goals proposed in the present Plan. Promote the necessary changes in order to provide better training on this matter, in accordance with each country's priorities.

Set up in at least 11 countries national systems of scientific documentation in the health sciences, interconnected and also with the Regional Library of Medicine.

Provide textbooks of high scientific and instructional quality for students of medicine, nursing, and other disciplines, in a program to cover 75 per cent of students by 1980.

6. Physical Resources

Create within the regionalization systems a series of minimum comprehensive health service units, until a coverage is achieved of one unit per 5,000 inhabitants in localities with less than 2,000 inhabitants; health centers with comprehensive basic minimum services for localities with between 2,000 and 20,000 inhabitants; and institutions with comprehensive basic and specialized services to communities with more than 20,000 inhabitants.

Increase the installed capacity by 106,000 beds in general hospitals by reorganizing and converting long-stay beds when this is feasible.

Gradually incorporate specialized medical care services into general hospitals in accordance with levels of care within a regionalization scheme.

Establish systems for maintenance of installations and equipment.

7. Financial Resources

Develop financing systems for providing the sector with new sources of funds and ensuring wider collaboration by the community and participation by the health sector in key national development projects.

8. Technological Resources

Develop and utilize health technologies in keeping with the conditions of each country with a view to increasing the coverage and productivity of the services.

Organize multinational programs of scientific and technological research.

9. Legal Aspects

Submit for consideration to the competent bodies of each country the systematization, regulation, and adaptation of the legal provisions in force in line with the processes of administrative improvement.

III. LIFE EXPECTANCY AT BIRTH

Establish as a general goal for the decade an increase in life expectancy at birth. Develop the sectoral and promote the intersectoral programs in order to:

1. Increase life expectancy at birth by five years in those countries where the present figure is under 65 years.

2. Increase life expectancy at birth by two years in those countries where the present figure is between 65 and 69 years.

In order to obtain a reliable estimation of life expectancy and the progress to be achieved:

1. Improve registration of births and deaths, adopting measures to ensure completeness and more realistic estimates.

2. Develop alternative methods of estimating life expectancy in countries where registration of births and deaths is inadequate.

IV. GENERAL

1. The goals and strategies appearing among the recommendations adopted by the III Special Meeting of Ministers of Health will be regarded as an integral part of the present Ten-Year Health Plan for the Americas, even though they are not specifically included in it.

2. In the light of the studies to be carried out and of the socioeconomic and political situation in the countries, each Government will evaluate its possibilities and determine the priorities to be set for attaining the goals of the present Ten-Year Health Plan.

3. To request the Member Governments to quantify the targets included in this document which have not been identified numerically and ask them to transmit information to PAHO in order to establish averages for the Americas.

Part IV

RESOLUTIONS

RESOLUTIONS

Resolution Submitted by the Delegation of Peru

THE III SPECIAL MEETING OF MINISTERS OF
HEALTH OF THE AMERICAS

Considers it necessary to pay a tribute to the Government and the people of Chile for the facilities, collaboration, and generous help provided.

It also wishes to stress the importance of the conceptual and human framework in which the President of the Republic of Chile, Dr. Salvador Allende Gossens, an untiring worker in the service of social medicine in the Hemisphere, inaugurated the Special Meeting. The basic concepts he expressed, for instance on maternal and child nutrition, community participation in health matters, and the "brain drain" of technical and professional workers, played an important part in the working sessions held. The conclusions approved by the Meeting confirmed the rightness of those concepts.

Resolution Submitted by the Delegation of Argentina

THE III SPECIAL MEETING OF MINISTERS OF
HEALTH OF THE AMERICAS,

Considering:

That stress has been laid on the need to formulate and implement multisectoral national food and nutrition policies in order to coordinate the efforts made by the countries to achieve optimal nutritional status for the population as a whole;

That it is necessary to assist Governments of Latin America and the Caribbean in the structuring and operation of information systems on food and nutrition which provide an adequate orientation for national food and nutrition policies and permit a subsequent evaluation of the effects which the national socioeconomic development plans may have on the nutritional status of the population;

That the structuring of a system as proposed requires specialized physical and human resources which are scarce in many countries of the Region;

That the Directing Council of the Pan American Health Organization, in its XVII Meeting (Port-of-Spain, Trinidad and Tobago, 1967), as well as the II Special

Meeting of Ministers of Health (Buenos Aires, Argentina, 1968) recommended the creation of a center which would facilitate the collection and analysis of data on food and nutrition;

That the Government of Argentina presented to the United Nations Development Program a proposal for creating in Buenos Aires the Food and Nutrition Data Retrieval and Analysis Center, and offered to furnish all the necessary counterpart funds and the facilities for its installation.

RESOLVES:

1. To reiterate the recommendations and resolutions of previous meetings of Ministers of Health of the Americas and of the Governing Bodies of the Pan American Health Organization, relating to the creation and operation of a Regional Food and Nutrition Data Retrieval and Analysis Center.

2. To recommend to the Governments that have not yet done so, to officially present to the United Nations Development Program the expression of their support to the request presented by the Government of Argentina on the Food and Nutrition Data Retrieval and Analysis Center, in order that this important Center may function, as soon as possible, for the benefit of the countries of the Americas.

Resolution Submitted by the Delegations of Argentina and Uruguay

THE III SPECIAL MEETING OF MINISTERS OF HEALTH OF THE AMERICAS,

Considering:

That during the Meeting stress has been laid on the importance of formulating national food and nutrition policies in order to ensure adequate food availability and food intake in each country, with due regard to the nutritional needs of the population as a whole and the high-risk groups (mother and children) in particular;

That production of dairy foods in Latin America and the Caribbean area should be increased and up-to-date methods for their marketing introduced so as to reduce their cost and make them more accessible to the entire population with a view to improving their health and nutritional status,

RECOMMENDS:

That the Pan American Health Organization, in collaboration with FAO and the dairy-food-producing countries of the Region, study the feasibility of organizing and establishing a stable marketing system for such products which would make it possible to offer a guaranteed supply to all the countries of Latin America in sufficient quantity and at a low price. The study should take into account customs duties in

order to ensure that they do not constitute an economic obstacle to the feeding of our peoples. It is proposed that a meeting be arranged in the city of Montevideo, Uruguay, during 1973 for that purpose.

Resolution Submitted by the Delegation of Canada

THE III SPECIAL MEETING OF MINISTERS OF HEALTH OF THE AMERICAS,

During the discussion of the subject of environmental health, decided to raise for consideration by the Directing Council of PAHO the following resolution:

IT IS RESOLVED:

1. That PAHO take the appropriate steps to strengthen its capacity to coordinate the provision of technical and financial assistance directed toward the solution of environmental problems in the Americas.
2. That PAHO review the recommendations of the United Nations Conference on the Human Environment, held in Stockholm, in order to assess the implications of these recommendations to the solution of environmental problems in the Region, including consideration of environmental problems associated with catastrophes and natural disasters.
3. That PAHO convene, as appropriate, a meeting or meetings of representatives of Member Governments and/or groups of experts working in the environmental field to consider priorities and the action to be taken with regard to environmental problems in the Americas in the light of the review and assessment of the Stockholm recommendations.

Resolution Submitted by the Delegation of Chile

THE III SPECIAL MEETING OF MINISTERS OF HEALTH OF THE AMERICAS,

Considering:

The Declaration of Bogotá and the Declaration of the Presidents of the Americas at Punta del Este which proclaims "that the betterment of health conditions is fundamental to the human and social development of Latin America," together with the statements along similar lines of the Ministers of Health of the Americas meeting in

Washington, D.C., in 1963 and Buenos Aires in 1968 which stated that "health in all major investments for development. . .;"

The Hipólito Unánue Agreement in which it was decided "to study the needs of the countries of the Andean area in respect of drugs and biological substances for human and veterinary use and their quality control, and endeavor to find ways and means of placing them within the reach of all sectors of the population;"

The previous resolutions of WHO and PAHO concerning the functions to be performed by those agencies with regard to procurement of supplies by the countries;

The need for drugs and biological substances and raw materials for their preparation, for medical appliances and spare parts, and for dairy products in order for the countries to be able to implement their health programs;

The difficulties in producing many of them in Latin America and the obstacles to acquiring them, due in certain cases to credit restrictions, speculative attitudes or arbitrary fixing of prices on the international market, all of which seriously affect the health status of the peoples;

The need to secure firm guarantees of timely, regular, and low-cost supply of the raw materials required for the preparation of pharmaceutical and biological substances, availability of medical appliances and spare parts, and provision of dairy products for child nutrition;

RECOMMENDS:

1. To request PAHO to make representations to the national loan agencies through resolutions of its Governing Bodies in order to prevent any discrimination in the prompt granting of loans, so as also to ensure timely financing of the credits approved; and to take appropriate steps to obviate any restriction on the prompt supply from the international market of the products needed for health programs.

2. To request that PAHO give assistance in obtaining loans, without discrimination, from national and international banking institutions, when they are required for the acquisition (including administrative expenses) of supplies and equipment, raw materials and dairy products for child feeding and other requirements for health programs.

3. To encourage among the countries of Latin America and the Caribbean or countries grouped together by subregional pacts the joint procurement of supplies by means of agreements to promote common purchasing arrangements.

4. To encourage the implementation of previous resolutions of the Governing Bodies of PAHO to consolidate complementary arrangements in the production of biologicals and their supply at cost price, through the establishment of other diversified centers for regional production of biologicals.

Resolution Submitted by the Delegation of Honduras

THE III SPECIAL MEETING OF MINISTERS OF
HEALTH OF THE AMERICAS,

After considering the subject of health planning,

1. Supports the resolution of the 68th Meeting of the Executive Committee of PAHO (Washington, D.C., 5-17 July 1972) relative to the Pan American Center for Health Planning (Resolution XII).

2. Indicates its interest and support of the negotiations of PAHO with the United Nations Development Program in order to provide for the continuation of the activities of this Center, in a second phase of the joint project (Project RLA/68/83).

3. Recommends to the Governments, especially to the national agencies for development planning and those coordinating external cooperation, that they grant high priority to this project and to the request presented to the United Nations Development Program for a "second phase."

Resolution Submitted by the Delegation of Brazil

THE III SPECIAL MEETING OF MINISTERS OF
HEALTH OF THE AMERICAS,

Wishes to place on record its heartfelt thanks:

To the Government of Chile for the facilities provided, for the warm reception conveyed by its most distinguished members, and for the kind hospitality extended to participants.

To the Pan American Health Organization and particularly its Director, Dr. Abraham Horwitz, for the invaluable collaboration in helping to raise the level of health of the Americas, and for the perspectives opened up by the Ten-Year Health Plan just approved by the Meeting.

To the members of the Secretariat, who have spared no sacrifice or effort in helping to bring the Meeting to a successful conclusion with a guiding document that will serve the progress of health in the Hemisphere both in the immediate future and on the long-term.

XIII Inter-American Congress on Sanitary Engineering

The XIII Inter-American Congress on Sanitary Engineering convened in Asunción, Paraguay, in August 1972, gave support to the improvement of environmental health

services by recommending the establishment of a Latin American Basic Sanitation Plan. This Plan contains specific proposals for action by each country, by the Pan American Health Organization, and by the Inter-American Development Bank, and the World Bank. The proposals in the formal resolution of the Congress were considered and supported by the III Special Meeting of Ministers of Health. The resolution in question follows:

"XIII INTER-AMERICAN CONGRESS ON SANITARY ENGINEERING,

CONSIDERING:

1. That the urban and rural sanitation program at the continental level emanating from the Charter of Punta del Este has had positive benefits in improving the sanitary condition of the peoples;

2. That this program should be continued not only to maintain the advances achieved in line with population growth, but also to expand the goals laid down in it; and

3. That for this purpose it is urgently necessary to organize a Latin American Basic Sanitation Plan,

RECOMMENDS:

1. To the Governments of each country that they:

a) Establish an overall dynamic and realistic program, with a view to the constant up-dating of the solutions to problems of basic sanitation in their respective countries.

b) Establish a system grouping together all bodies concerned with problems of basic sanitation, coordinate their efforts and resources under the direction of a central agency at the national level, responsible for the establishment of standards, planning and evaluation, set up specialized groups, and decentralize executive activities through regional agencies, wherever there are several bodies in the country involved in the problem.

c) Mobilize manpower and financial resources to meet the demand and the time schedule envisaged in the program, in order to maintain a constant balance between supply and demand in regard to services.

d) Establish a just and realistic rate policy, adequate for families of low income but producing sufficient revenue to cover financial, operational, and maintenance costs, as well as the cost of modernizing and expanding the plans.

e) Facilitate the installation of services for any urban group in the country, irrespective of income or economic level, by means of: a single compensatory fund, national or regional, the rational distribution of grants and loans, and the differentiation of interest rates in inverse proportion to the purchasing power of the area.

f) Promote a permanent inflow of financial resources adequate for programming in each country through the establishment of revolving funds for regional or national investment, designed to increase with the demand, and maintaining their real value through the adjustment of both the level of rates and of outstanding loan balances, in countries subject to currency devaluation.

g) Ensure the high quality of human resources to meet demand as projected in the overall programming by means of personnel instruction and training, and technical assistance to the bodies responsible for executing the program.

h) Seek continually to reduce costs and hence the real value of rates through economies of scale, increased productivity, technological advances, and greater rationalization of technical projects and operation of the systems.

i) Keep the operation of the systems in the hands of the smallest possible number of concessionaires of the highest repute calculated to make the best use of human and financial resources, by applying economies of scale and linking together communities that offset one another economically, thus coming close to providing optimum services with reduced costs and making it possible to serve the poorer urban groups of the country.

2. To the Pan American Health Organization that it:

a) Stimulate in each country the application of the principles listed in item 1, with a view to organizing and developing a Latin American Basic Sanitation Plan that will ensure the continuity and expansion of the program which emanated from the Meeting of Punta del Este.

b) Present at the III Special Meeting of Ministers of Health in Santiago, Chile, this recommendation and supporting studies aimed at solving the basic sanitation problems in Latin America.

3. To the World Bank and the Inter-American Development Bank, that they:

a) Ensure in each country the complementary resources required for the execution of national plans for the permanent solution of the problem of water supply and water pollution control, through the installation and operation of water supply and sewerage systems and the adequate disposal of waste waters.

b) Finance on a preferential basis national programs taking into account the basic characteristics of these recommendations.

c) Promote the establishment and development of revolving funds for investment to give permanent support to national programs.

d) Offer long-term, low-interest loans for the implementation of basic sanitation programs.

e) Give preferential consideration to the countries with lowest income levels and greatest deficit of basic sanitation services."

Part V

FINAL DECLARATION

FINAL DECLARATION

In bringing our III Meeting to a close, we are encouraged by the progress achieved in the vast hemispheric undertaking directed toward the transcendental task of obtaining the best physical, social, and mental health for our peoples.

Our discussions have centered mainly around the task of analyzing the experience acquired and the work accomplished during a truly historic era that set the stage for a new decade of health activities.

The influence of the Charter of Punta del Este on our first meeting, that of the Meeting of American Chiefs of State, who signed the Declaration of the Presidents of America, on the second, and the influence of the Second United Nations Development Decade as the frame of reference for the meeting which is today coming to a close, are the best assurances of the validity, steadfastness, progress, and continued improvement of our efforts in behalf of the individual and social progress of our fellow citizens.

Without forgetting any of the initiatives already undertaken and partly brought to fruition, we have reviewed our goals of service to our fellow men in the light of our past accomplishments, with a view to applying the lessons of experience to our determination to attain improvement.

A retrospective examination of our broad spectrum of activities and the paths we have chosen to take shows that we have reaffirmed our adherence to the ecumenical and universal concept of health as a science and a philosophy at the service of man and the humanization of development. And we have not neglected health as a means of reconciling human beings with the environment that serves as the setting for their daily activities.

We recognize the grave problems of our communities without or with a token of medical care services. In the light of this fact, we are committed particularly to the less privileged groups and through them to the whole Hemisphere.

This consideration alone, which is cited only by way of example, provides ample evidence of the close interdependence of health problems with each other and with problems in other sectors in which the need for a common approach and reciprocal support has not always been sufficiently recognized.

For these and other reasons our attention has never deviated from human health as the focal point of all our endeavors. This in no way means that we fail to see the importance of other elements of our field.

This unswerving dedication explains the stress we lay on such matters as the training of health manpower under properly articulated but integrated methods of instruc-

tions; the role of ecology as a complementary science to health; the multifaceted problem of providing nutrition to satisfy imponderable requirements of biological growth and its close relation to maternal and child health and family well-being; community participation and the expansion of coverage of health services particularly to the rural population and the incorporation of this population to social and economic development with the spirit of social peace and security. The increase of investments in health within the socioeconomic structures of each country is the assurance that they pay in terms of well-being expressed in equality of opportunities and human coexistence.

We trust that as a result of the deliberations this week and in the years to come we shall be able to make combined efforts to the benefit of all of us. The health problems of the Hemisphere are enormous. We shall have to band together and devote ourselves to coordinating solutions which will be a realistic reflection of our ability to solve the problems that arise. To that end we pledge our cooperation in a spirit of solidarity to achieve the highest levels of health for every citizen of the Americas.

We are still far from reaching the targets set; but the path marked out offers guidance for whatever action we take to ensure that on the basis of a sober analysis of our internal problems, in the framework of a world without frontiers, our efforts will mount up and the bonds of fellowship will be strengthened until our peoples enjoy the all-round development—physical, mental, social, cultural, and economic—to which every human being is entitled, leading toward an understanding resulting in social justice in the benefit of man and his communities.

The decade that has now begun is faced with a real challenge, which will call for wise and skillful use of the possibilities at hand, and utilization to the full extent of our capacity of the resources available to us.

We know that the results of the constructive dialogue ending today will be felt even beyond a decade of health activities: they will lead to new approaches and aspirations that through continuous renewal and improvement will serve at least until the end of the century. We say this because of our implicit faith in the common destiny of the American peoples.

IN WITNESS THEREOF, the Ministers of Health of the Americas, or their Representatives, and the Director of the Pan American Sanitary Bureau, Secretary of the Meeting, sign the present Final Report in the English and Spanish languages, both texts being equally authentic.

DONE in Santiago, Chile, this ninth day of October, nineteen hundred and seventy two.

Dr. Alberto Gordillo Gómez
Under-Secretary General of the Ministry of Social Welfare in Charge of the Under-Secretariat for Public Health of Argentina

Hon. Captain George Granville Fergusson
Minister of Health and Welfare of Barbados

Dr. Carlos Valverde Barbery
Minister of Social Welfare and Public Health of Bolivia

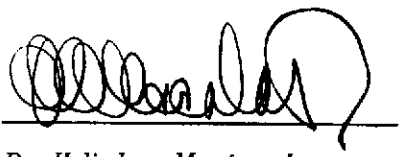
Dr. Mario Machado de Lemos
Minister of Health of Brazil

Dr. Maurice LeClair
Deputy Minister, Department of National Health and Welfare of Canada

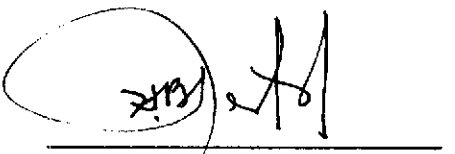
Dr. Juan Carlos Concha Gutiérrez
Minister of Public Health of Chile

Dr. José María Salazar Bucheli
Minister of Public Health of Colombia

Dr. José Luis Orlich
Minister of Public Health of Costa Rica

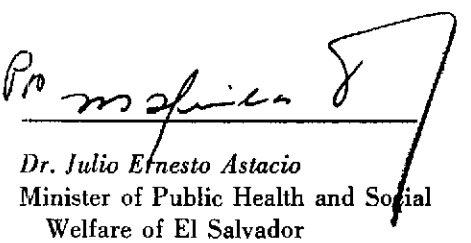


Dr. Heliodoro Martínez Junco
Minister of Public Health of Cuba

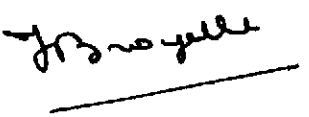


Dr. Héctor Pereyra Ariza
Secretary of State for Public Health and Social Welfare of the Dominican Republic

Dr. Raúl Maldonado-Mejía
Minister of Public Health of Ecuador



Dr. Julio Ernesto Astacio
Minister of Public Health and Social Welfare of El Salvador



Dr. Jeanne Broyelle
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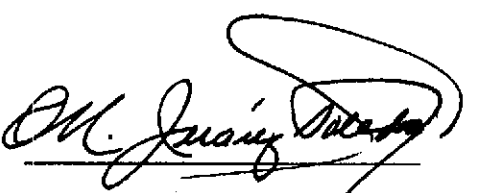
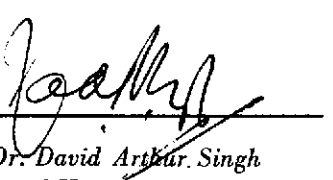
Ministry of Public Health and Social Security of France

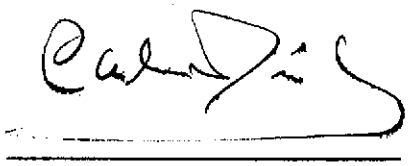


His Excellency Mario Juárez Toledo
Ambassador of Guatamala in Chile



Hon. Dr. David Arthur Singh
Minister of Health of Guyana

Dr. Alix Théard
Secretary of State for Public Health and Population of Haiti



Dr. Carlos Alberto Pineda Muñoz
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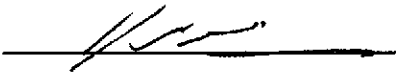

Hon. Dr. Kenneth Augustus McNeill
Minister of Health and Environmental
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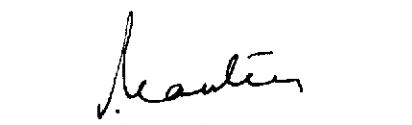

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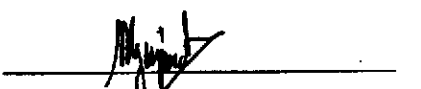

Dr. Renaldo Guzmán Orozco
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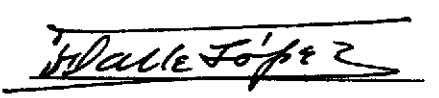

Dr. Fernando Valle López
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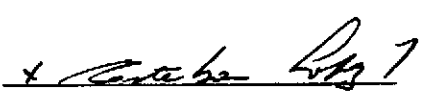

Dr. José Renán Esquivel
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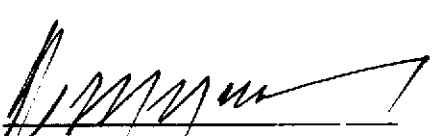

Dr. Adán Godoy Jiménez
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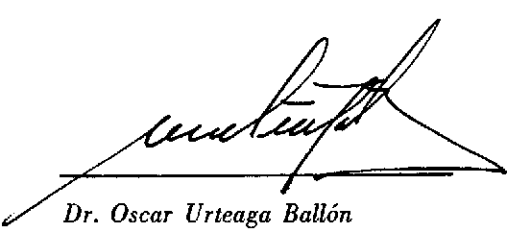

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Chief Medical Officer, Ministry
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of Trinidad and Tobago

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Dr. Pablo Purriel
Minister of Public Health
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Dr. José de Jesús Mayz Lyon
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Dr. Abraham Horwitz
Director, Pan American Sanitary
Bureau, Secretary

ANNEXES

Annex 1

OFFICERS OF THE MEETING AND OF THE COMMITTEES

President of the Meeting	
Dr. Juan Carlos Concha Gutiérrez	Chile
Vice-Presidents of the Meeting	
Dr. Mario Machado de Lemos	Brazil
Dr. Kenneth A. McNeill	Jamaica
General Rapporteur	
Dr. Carlos A. Pineda Muñoz	Honduras
Chairman of Committee I	
Dr. Raúl E. Maldonado-Mejía	Ecuador
Vice-Chairmen of Committee I	
Dr. Julio César Blaksley	Argentina
Dr. Héctor Acuña Monteverde	Mexico
Rapporteurs of Committee I	
Dr. Eliécer Valverde Jiménez	Costa Rica
Dr. Pedro Guédez Lima	Venezuela
Chairman of Committee II	
Dr. José María Salazar Bucheli	Colombia
Vice-Chairmen of Committee II	
Dr. Pablo Purriel	Uruguay
Dr. José Renán Esquivel	Panama
Rapporteurs of Committee II	
Dr. Roberto de Jesús Badía Montalvo	El Salvador
Dr. Claudio R. Sepúlveda Alvarez	Chile
Drafting Committee	
Dr. Carlos A. Pineda Muñoz	Honduras
Dr. Eliécer Valverde Jiménez	Costa Rica
Dr. Pedro Guédez Lima	Venezuela
Dr. Roberto de Jesús Badía Montalvo	El Salvador
Dr. Claudio R. Sepúlveda Alvarez	Chile
Dr. Abraham Drobny	Pan American Sanitary Bureau

Annex 2

LIST OF PARTICIPANTS

Argentina

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Under-Secretary General of the Ministry of Social Welfare, in Charge of the Under-Secretariat of Public Health

Rear Admiral Dr. Raúl C. León
Director, Naval Sanitation, Argentine Navy

Dr. Antonio José González
National Director, Sectorial Development, Under-Secretariat of Public Health

Dr. Julio César Blaksley
National Director, Health Inspection, Under-Secretariat of Public Health

Dr. Sixto Gerardo González
Representative of the Federal Health Committee, Under-Secretary for Public Health, Córdoba Province

Miss Nydia Helena Gordillo Goméz
Cabinet Adviser, Ministry of Social Welfare

Col. Juan Carlos Moreno
Cabinet Adviser, Ministry of Social Welfare

Mr. Félix Córdova Moyano
Secretary, Embassy of Argentina in Chile

Mr. Eduardo A. Pedace
National Director of Sanitation, Under-Secretariat of Public Health

Barbados

Hon. George G. Fergusson
Minister of Health and Welfare

Mr. Alwyn S. Howell
Permanent Secretary, Ministry of Health and Welfare

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Senior Medical Officer of Health, Ministry of Health and Welfare

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Minister of Social Welfare and Public Health

Dr. José Serrate Aguilera
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Dr. Antonio Brown Lema
Director, Technical Division, Ministry of Social Welfare and Public Health

Mr. Manuel Ignacio Castedo
Secretary General, Ministry of Social Welfare and Public Health

Mr. Jaime Roda Daza
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Mr. Freddy Cors López
Chief, Administrative Analysis, Ministry of Social Welfare and Public Health

Mr. Juan Emilio Alvarez Rondón
General Assistant, Ministry of Social Welfare and Public Health

Brazil

Dr. Mario Machado de Lemos
Minister of Health

Dr. José Roberto Rego Monteiro
Director, National Housing Bank, Ministry of the Interior

Dr. Pedro Monteiro Gondim
Engineer, Special Public Health Service Foundation

Dr. Hugo Vitorino Alquéres Baptista
Secretary for Medical Assistance, Ministry of Health

Dr. Oswaldo Lopes da Costa
Director, National Department of Health Organization, Ministry of Health

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Annex 3

AGENDA

1. Plenary Sessions

1.1 Election of the President, Two Vice-Presidents, and the General Rapporteur
1.2 Statement by the Director of the Pan American Sanitary Bureau, Dr. Abraham Horwitz, on the organization and conduct of the Meeting
1.3 Adoption of the Rules of Procedure (Document REMSA3/18)
1.4 Adoption of the agenda (Document REMSA3/1, Rev. 4)
1.5 Adoption of the program of sessions (Document REMSA3/2)
1.6 Statements by the Ministers on health programs in their countries
1.7 Statement by the Economic Commission for Latin America (Document REMSA3/7)
1.8 Statement by the Latin American Institute for Economic and Social Planning (Document REMSA3/8)
1.9 Health outlook for the decade
1.10 Consideration and approval of the recommendations of the Committees
1.11 Approval and signature of the Final Report

2. Committee I

2.1 Election of Officers of the Committee
2.2 Health services (Document REMSA3/3)
2.2.1 Services to individuals (Documents REMSA3/5 and Corrig., 10 and Corrig., 11, and 12)
Control of communicable diseases
Parasitic diseases and enteric infections
Malaria eradication
Non-communicable diseases (chronic diseases and cancer)
Maternal and child health
Population dynamics
Nutrition and food policy
Dental health
Mental health. Drug abuse.
2.2.2 Environmental services (Documents REMSA3/9 and 15)
Environmental health services
Water supply and sewage disposal
Solid waste collection and disposal
Environmental pollution control

Noise control
Occupational health and industrial hygiene
Urban, rural, and regional development
Aedes aegypti eradication
Animal health and veterinary public health
Quality control of drugs
Control of the use of pesticides
Food hygiene
Road traffic accidents

2.2.3 Supporting services (Documents REMSA3/4 and Corrig., and 14)
Epidemiologic surveillance
Nursing
Health laboratories
Medical rehabilitation
Health and radiation
Health education

3. Committee II

3.1 Election of the Officers of the Committee

3.2 Infrastructure (Document REMSA3/3)

3.2.1 Administration (Documents REMSA3/6, 13, and 16)
Coverage of health services
Integration of health programs in organized communities
Health service systems and medical and hospital care. Maintenance of facilities and equipment
Bases for the establishment of comprehensive medical planning
Administration, planning, and information processes
Intersectoral coordination
Statistical systems
Research: Development and coordination
Health legislation

3.2.2 Resources (Document REMSA3/17)
Human
General
Physicians
Dentists
Nurses
Public health specialists
Technological and educational resources
Material and financial resources
Analysis of the destination of health expenditures

3.2.3 Pan American Health University (Document REMSA3/20)