

Advancing the People's Health

Annual Report of the Director-2000



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Mission of the Pan American Health Organization

The Pan American Sanitary Bureau is the Secretariat of the Pan American Health Organization (PAHO), an international agency specializing in health. Its mission is to cooperate technically with the Member Countries and to stimulate cooperation among them in order that, while maintaining a healthy environment and charting a course to sustainable human development, the peoples of the Americas may achieve Health for All and by All.

To the Member Countries

In accordance with the Constitution of the Pan American Health Organization, I have the honor to submit the 1999–2000 annual report on technical cooperation activities of the Pan American Sanitary Bureau, Regional Office of the World Health Organization. Within the context of the strategic and programmatic orientations for the 1999–2002 quadrennium, defined by the Governing Bodies of the Pan American Health Organization, the report analyzes the salient activities of the Organization's technical cooperation program during this period.

The report is complemented by the *Interim Financial Report of the Director for the Year 1999*.



George A. O. Alleyne
Director

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The Director's Message

*Justice is the first virtue of social
institutions as truth is of systems
of thought.*

—John Rawls (1971)

Advancing the people's health

I have fond memories of a lovely inn in Dublin where my wife and I stayed as the guests of the Royal College of Physicians of Ireland. We came down to breakfast one morning and were regaled by a fellow guest with stories of great Irish academics. We were told of a professor of Classics who, when accosted by some lesser mortal and being asked if he taught Greek, replied haughtily, "I do not teach Greek. I profess Greek. I advance Greek and the knowledge of all that it stands for." It is in that vein that I will address the issue of advancing the people's health. There will be the dual approach of "professing" health in the sense of examining what must be done to carry forward or advance the cause of health and the knowledge of all that it stands for. In addition, I will refer to the more traditional aspect of examining the advances or improvements in the people's health, what they signify, and what must be done to see that such improvements are maintained or accelerated.

Any consideration I make about the need for advancing the cause of health must begin with an appreciation or conceptualization of health and what it means to society. I admit that this sort of discussion or debate is likely to have a philosophical or ethical bent, but I have always maintained

that all health workers, particularly those of us who work in or guide international or national institutions, must have some sense of the philosophical underpinnings of our work. I also believe that our ability to advance the cause of health must be grounded in developing sound advocacy skills, so we can ensure that health issues are included when major policy issues are debated.

Without a doubt, “we the people” care about health. The largest public opinion survey in the world, the one undertaken by Gallup International in 1999 for the Millennium Report of the Secretary General of the United Nations, showed that good health and family life ranked first among the things that people valued—far outranking material possessions. It is good for us and our fellow human beings to be healthy, but we are still a long way away from universal acceptance of the notion that health is an essential public good that needs appropriate policy focus. Much of the attention to health still turns around a concern for the nature of the transactions that take place between individuals and the services that provide care.

Kaul and his colleagues¹ have clearly set forth the thesis that the population’s health may be cast as a public good. In reviewing the notion of public goods, they characterize them as having two main features—they are “nonrivalrous in consumption and nonexcludable.” To explain this, they use the analogy of traffic light systems, which can be relied on by all to the benefit of all and to the detriment of no one; they need to be used by everyone, and their use cannot be restricted to a few.

Population health is similar, in that the health of the population benefits all and, under most conditions, no one can really be excluded. In con-



sidering health as a public good, attention has quite rightly been placed on communicable diseases and the need for their surveillance, which has itself been framed as a public good. I would agree with Kaul and his colleagues that the state of health, in itself, should fall into this category, and indeed much more consideration is being given now to the relationship of the health of populations in distant countries to the security and prosperity of others far away. Health was a public good long before we “discovered” globalization, but now it has been raised to the state of a global public good, and the communication that is so much a part of globalization has strengthened that perception.

The notion of a public good, or of any other good, always raises the question of how to quantify the nature of the benefit. The measurement of health status has bedeviled us constantly, which is attested to by the number and variety of approaches that have been tried, from simply counting final common events—deaths to relying on extremely complicated indicators. In discussions about measuring phenomena or states that are as multidimensional as is health, I am always reminded of Bentham’s “felicific calculus,” which he would use in measuring the net happiness that resulted from various actions by the State.

But, regardless of any difficulties with measurement (and I will refer to this again later), the need to advocate for or advance the concern for the public’s health is based on two concepts that are important for our work. First, we hold that assuring the necessary means for persons to enjoy the optimum state of health is a matter of social justice, such as was enshrined in the concept and practice of Health for All. Health institutions such as ours,

which must be qualified as social, have to be concerned with matters of justice. It is for this reason that I have insisted on making equity one of our essential value principles. We have discussed this extensively here at PAHO, and I believe that everyone in the Organization now understands the concept as referring to the distribution or allocation of the means necessary to ensure health in a fair manner. The differences or disparities that may be described as representing inequity must be nonvolitional and avoidable, in addition to there being some identifiable responsible agent. Equity in health is not restricted to care services.

Daniels and his colleagues² have written cogently on the thesis that justice is, indeed, good for health, and base much of their reasoning on Rawls's philosophy.³ My introduction to this field came almost 20 years ago, from reading Campbell's⁴ excellent analysis of Rawls's theory of justice as it applied to health. He added two other principles besides equity that should be considered in the context of justice. First there was liberty, in the sense that the provision of health care should enhance liberty "by ensuring equal access to available health services within a given society, irrespective of income, social status or political allegiance." The second was fraternity, in that all society members "should be regarded as providers of health care and should be given responsibility for assessing the effectiveness of existing provisions and for formulating policies for the improvement of local and national services." I would consider these last two as not being in the same scale as or as important as equity, and I would extend the reasoning beyond health care to include the other fac-

² Daniels N, Kennedy BP, Kawachi I. Why justice is good for our health: The social determinants of health inequalities. *Daedalus. Journal of the American Academy of Arts and Sciences*; Fall 1999.

³ Rawls J. *A theory of justice*. Cambridge, Massachusetts: Harvard University Press; 1971.

⁴ Campbell AV. *Medicine, health and justice. The problem of priorities*. Edinburgh, London and New York: Churchill Livingstone; 1978.

tors that contribute to health and that are even referred to as determinants of the healthy state.

The concept of liberty is very much related to the need for personal autonomy in health, a need that has been expressed by many and perhaps most vocally by Illich⁵ almost 25 years ago. Illich's claims that the medical or health industry was to be reined in, if not abolished, because it reduced personal autonomy or a person's capacity to care for health were exaggerated, but the notion of personal autonomy in health is still very relevant. An important aspect of autonomy deals with the allocation of resources to specific groups that are disadvantaged and for whom improving their health will contribute toward enhancing their autonomy. These groups certainly include the poor, children, the mentally handicapped, and the elderly who live without family support. Much of the call for attention to the improvement of health as a mechanism for relieving poverty turns around the recognition that poverty is not only determined by income, but also is related to a complex web of factors that essentially reduce the capability and autonomy of persons.

The concept of fraternity is becoming ever more relevant as the clamor increases for there to be some societal mechanism that determines the allocation of resources to health, not only in terms of quantity but also in terms of technology and geographical distribution. It was this ideal of fraternity that lay behind the call for community participation that was so much a part of Primary Health Care. We cannot have fraternity of the type envisioned by Rousseau, with every citizen participating in decision-making. But there is a real fear that the current mechanisms through which the peo-

⁵ Illich I. *Medical nemesis*. London: Calder Boyars; 1974.

ple make their wishes known is essentially flawed, and that in fact, the ones actually making the decisions on resource allocation are the powerful and vocal interests. The secret may well lie in an equation that is being accepted more and more in the processes of health sector reform: some powers must remain centralized to facilitate the steering role of the State and ensure equity, while others should be decentralized to ensure fraternity.

There is an obvious tension between the need for justice in providing necessary resources equitably to assure health and an acceptance of distances or gaps between persons or groups in terms of social attributes. This is another reason why we have insisted so firmly that the process of health sector reform in our part of the world should encompass, as a fundamental principle, the notion of a guiding or steering role for the State, as exercised through the ministry of health. Because the State is the only instance that can ensure that the measures necessary for health are equitably provided, our technical cooperation continues to emphasize the need for countries to develop the tools to carry out this steering function.

Although I might wish that the attention to considerations of justice would suffice to guarantee advances in the attention to the public's health, I know that this is not so. It is essential that we show some instrumental value of health in that it contributes to other needs or values that humans hold dear. The area in which there is most current interest is the relation between health and wealth. It has been known for centuries that the poor are less healthy than the rich, although the economic historian Fogel⁶ has drawn our attention to an interesting phenomenon that he calls the "peer-age paradox." Until the beginning of the eighteenth century, English peas-

⁶ Fogel RW. The conquest of high mortality and hunger in Europe and America: Timing and mechanisms. In Hagonnet P, Landers DS, and Rosorsky H, eds. *Favorites of fortune: Technology growth and economic development since the Industrial Revolution*. Cambridge, Massachusetts: Harvard University Press; 1961.

ants and peers had similar life expectancies. This was perhaps due to the remarkable alcohol consumption and poor diet of noble ladies, and the fact that the nobles were not quite able to distance themselves from the unfavorable environmental conditions that were the main determining factors for the health of rich and poor alike.

Recent data are clear, however, in demonstrating that at the individual as well as at the national level, wealthier is healthier. What has not been so clear is that health plays a significant role in the accumulation of national wealth. It must be intuitively obvious that, provided there is opportunity to work, the healthier individual will produce more. Strauss and Thomas⁷ have reviewed good evidence that individuals who are healthier, as shown by anthropometric measures, earn more. In addition, there are several studies showing the positive effect of disease elimination or reduction on a nation's wealth.

More recently, PASB has been supporting macroeconomic studies that show a clear causal relationship between health measures such as life expectancy and the future economic growth of countries. The mechanisms by which health should enhance wealth at the macro level are not clear and therefore need further research. One possibility is that investing in health permits greater returns from such investments as education. Investments in health and longer life expectancy may also increase the tendency to save and, therefore, contribute to increased economic growth. In terms of advocacy for the people's health, there is no doubt that the experts on economic growth who formerly thought of matters relating to health as being exogenous to their models are having to entertain the pos-

⁷ Strauss J, Thomas D. Health, nutrition and economic development. *Journal of Economic Literature* 1998;36(2):766-817.

sibility that health is endogenous. This is one area of inquiry that will require the active collaboration by health professionals with persons from other disciplines.

The possibility that the population's state of health may be instrumental in contributing to social stability and solidarity is attractive, but as yet lacks the necessary empirical data to confirm it. In a similar vein, it is plausible to hypothesize that inequality in health status in addition to absolute status may contribute to the impairment of the social capital necessary for optimal societal functioning.

The data and the descriptions of programs found in the body of this report follow the more traditional approaches of describing the advances made in the people's health. They show changes in traditional health indicators used to measure health status and refer to the way in which various factors, including such ones as natural disasters, influence health. Most measures that are used relate to the health of groups of persons, and considerable attention is given to our technical cooperation in assisting countries to collect their data in such a manner that this information can be disaggregated to show the disparities that exist. More and more emphasis is being placed on measures of distribution in addition to averages. These are the first steps towards identifying the disparities that may be characterized as inequities.

Little attention has been paid to individual health status. This is a reflection of the traditional tenet of public health, which holds that attention should be paid to the health of populations rather than to that of individuals. The health of individuals is held to be the concern of the

personal health care system. I have long held, however, that this is not in keeping with the view that the public, to whose health we are committed, is comprised of individuals, and that those social institutions that concern themselves with improving the public's health must at least also take note of the measures employed to care for the health of individuals. First, there is the obvious ethical reason for being concerned with the health of individuals, for it is individuals who become ill—as C.P. Snow⁸ wrote, “each of us dies alone.” And there are other reasons, too. For example, in spite of claims that medical interventions have played only a small part in the overall improvement of the health of populations, evidence shows that this is not entirely true. Medical interventions at the individual level, as in the case of antibiotic therapy for various illnesses, have had a role in improving the population's health. Moreover, the steady increase in expenditure on health that has repercussions on the availability of resources in the health sector as a whole is related to the individuals' clamor for new technology. It is the aspirational demands of individuals for technology cloaked as needs that usually drive expenditure. These issues have to involve all those interested in advancing the people's health.

While we concern ourselves with the benefits to society from improving the aggregate of health in the country, we pay little attention to devising tools to measure the benefits of curing illness, restoring health, or rehabilitating the ill. As distinguished American physician Walsh McDermott⁹ explained some time ago, we have no measures for assessing the value of individual care medicine such as we have for assessing the value of population health. This is a challenge that must be taken up by those of us who are in-

⁸ Snow CP. Human care. *Journal of the American Medical Association* 1973;225:617–621.

⁹ McDermott W. Medicine: The public's good and one's own. *Perspectives in Biology and Medicine* 1978;21:167–186.

interested in advancing the people's health both from the individual and group level.

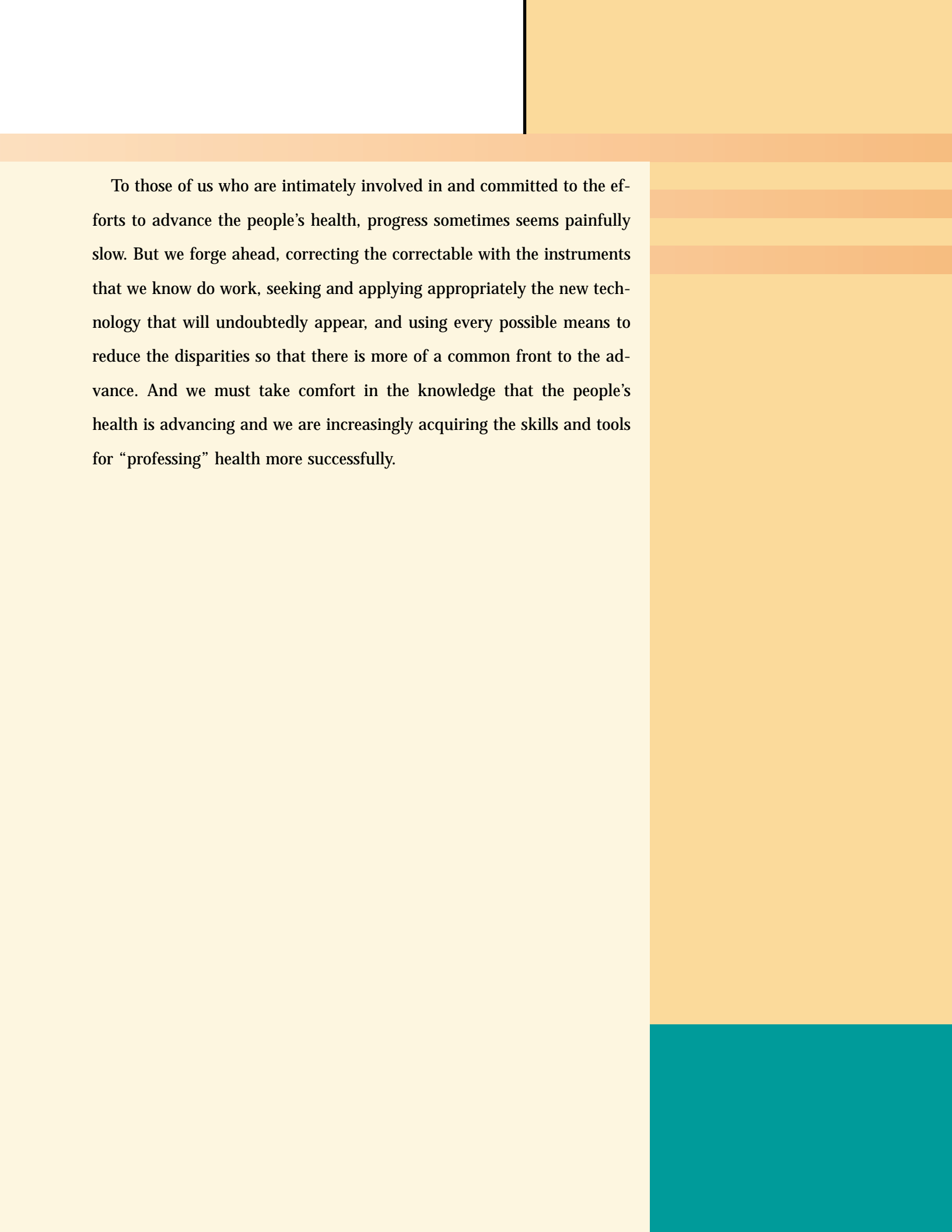
Several approaches have been suggested for measuring individual health, perhaps the most common being the individual's self-assessment of illness, or some proxy measure such as days of absence from work. The latter is clearly of limited value in societies in which a high percentage of work takes place in the informal sector. This is the case in Latin America and the Caribbean, where up to 50% of workers in a country may be in the informal sector or may have irregular work because of the high level of unemployment. Self-assessment has its problems, too, as there may be wide cultural variations in the appreciation of what constitutes ill health. The poor in less developed countries have a much higher threshold for self-reporting of ill health, given the serious economic consequences of lost work as a result of sickness. The frequency of symptomatology will also affect the reporting—if almost every child has a nasal discharge, this symptom may be regarded as the norm, rather than as an indication of illness.

In the final analysis it will be the countries themselves that will be the principal actors in advancing the people's health. The efforts in the countries will be the result of action by all the social partners, but this is not the place to elaborate on the relative roles of these partners. Our only premise is that whatever the mix of partners, it will be the State, as the expression of popular will, that will have the ultimate responsibility for the determinants that fall outside the range of those related to individual behavior or biological determination. Even in the case of individual behavior the State has a role, the classical example being tobacco use, where the

State's role in preventing exposure is clear. Many determinants that were thought previously to be immutable because of biology are now known to be the result of nutritional or other social influence in early life, and as such may well fall under the purview of the State.

But having said that some responsibility lies with the State, I must emphasize that I am uncomfortable with the common assertion that many failures in the application of the technologies that are of proven usefulness are due to lack of political will. I am increasingly convinced that this is a new vein of rhetoric that national and international technical advisors have found and that allows them to evade or renege on their responsibilities. It is true that the political process involved in making decisions in relation to health sometimes seems strange, but I have never found that these decisions are based on some deliberate or devious assault on the people's health. The unfortunate truth is that many of us have not taken the trouble to understand the nature of political decision-making. In addition, once we have laid blame on "the lack of political will," there is little incentive to put forward good solutions with alternatives that can satisfy the acid test of being financially practicable, technically sound, socially acceptable, and politically feasible.

It is not given to many to participate in so noble an effort as advancing the people's health. It is a trust that we at PAHO hold sacred and we have committed ourselves to the proper use of all the resources entrusted to us to that end. It is for this reason that no report is complete without some statement of the manner in which our resources are applied.



To those of us who are intimately involved in and committed to the efforts to advance the people's health, progress sometimes seems painfully slow. But we forge ahead, correcting the correctable with the instruments that we know do work, seeking and applying appropriately the new technology that will undoubtedly appear, and using every possible means to reduce the disparities so that there is more of a common front to the advance. And we must take comfort in the knowledge that the people's health is advancing and we are increasingly acquiring the skills and tools for "professing" health more successfully.

Health Situation Analysis

1

By the end of the twentieth century, the Region of the Americas had achieved considerable improvements in the average population's health and living conditions.



Most countries in the Region have met the main goals proposed in the historic conference on primary health care held in 1978 in Alma Ata, which established the “Health for All by the Year 2000” initiative. Progress is reflected in steady improvements in such national indicators of well-being as life expectancy, easy access to safe water supply, and immunization coverage, and in reductions in health-ill outcomes, particularly the reduction of child mortality due to communicable diseases. These changes are taking place in the context of political and economic reforms, as well as an increasing decentralization of the health services. Nevertheless, the challenge of creating health systems to reduce major inequalities among populations in the Region remains a priority. Notably, health gaps between countries have not diminished, even when the analyses that measure them compare countries with similar socioeconomic conditions. Socioeconomic changes have severely inhibited the ability of the countries’ health institutions to effectively and equitably deliver services to vulnerable segments of the population.

Given this, there is an urgent need to improve the empirical public health information that is used to periodically assess the health situation and analyze trends. A major challenge for the Pan American Health Organization has been to improve the comparability, validity, and reliability of the health information needed to identify and quantify the inequalities that disproportionately affect people in certain geographic areas or certain groups of society. It is equally important to recognize the factors that determine those health inequalities.

One noteworthy accomplishment is that the ministries of health of 18 countries in the Americas (listed in Table 3) have built and enhanced the availability of their core health indicators databases to disaggregate data by subnational levels based on PAHO’s Regional Core Health Data/Country Profile Initiative. The availability of national information is critical for conducting the health situation analyses that will be used to adjust and redirect health policies and programs to close existing equity gaps within and among countries. PASB commends these countries for developing their national health information initiatives and for publishing their core health data.

Most countries in the Americas encompass heterogeneous space/population units and, accordingly, their national summary indicators do not provide the necessary information to document the inequalities that exist within their borders. As a result, PASB will continue to refine the methodological tools

that will permit a more precise subnational and local identification of health inequalities, as well as the selection of appropriate indicators and indices.

This chapter presents the health situation of the Member States, utilizing basic indicators of the populations' health status and its determinants. Some indicators are analyzed at different levels of geographic or population aggregation to facilitate within-country comparisons. In addition, the chapter includes a series of new methodological analyses, using for the first time distributions of available subnational core health indicators. These new methodological analyses complement other analyses presented in previous annual reports.

The health situation in the Region

The country-level analyses use the basic indicators available in PAHO's Technical Information System of Core Health Data. This system contains up-to-date information for 48 Member States and territories of the Americas. To facilitate analysis at the country level, these were divided into eight subregions according to location, population size, and certain socioeconomic criteria (Table 1).

The subnational analyses included data from 363 geographic units (states, provinces, or departments) of 18 countries. In collaboration with the PAHO/

TABLE 1. Subregions of the Region of the Americas.

| Subregion | Countries included |
|--------------------------|--|
| Andean Region | Bolivia, Colombia, Ecuador, Peru, and Venezuela |
| Brazil | |
| Central American Isthmus | Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama |
| Latin Caribbean | Cuba, Dominican Republic, Haiti, and Puerto Rico |
| Mexico | |
| Non-Latin Caribbean | Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Dominica, French Guiana, Grenada, Guadeloupe, Guyana, Jamaica, Martinique, Montserrat, Netherlands Antilles, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and U.S. Virgin Islands |
| North America | Bermuda, Canada, and United States of America |
| Southern Cone | Argentina, Chile, Paraguay, and Uruguay |

WHO Country Offices, several countries initiated evaluation and monitoring processes and published their health situation data and indicators for 1994–1998.

The population's health status

The end of the twentieth century saw major changes in the patterns and causes of mortality. There has been a shift in causes of death from infectious diseases to chronic non-communicable diseases. This has produced variations in the epidemiological profiles that require specific, focused responses and health policy decisions in order to modify the health-risk determinants, including environmental factors and behavioral and lifestyle choices.

The most significant changes in mortality patterns over the last 20 years in the Americas have occurred in children. The Region's mean infant mortality rate of 24.8 deaths per 1,000 live births in the 1995–2000 period is the lowest registered to date. Between 1980–1985 and 1995–2000, infant mortality fell by 12.1 deaths per 1,000 live births, or approximately 30%. In the Andean Region, Brazil, the Central American Isthmus, and the Latin Caribbean the impact of this reduction has been between 30% and 45% (Figure 1), although the mortality ratio in these areas was between five and seven times higher than in North America, and at least 40% higher than the Regional average in both periods.

At the country level, health and living conditions have also improved, although not all subnational geopolitical units benefited to the same degree. Table 2 shows various health indicators for 363 geographic units of the 18 selected countries. Although the mean and median infant mortality rates are 24.4 deaths per 1,000 live births and 19.7 deaths per 1,000 live births, respectively, the frequency distribution of the infant mortality rates (Figure 2) reveals the great variability and numerous inequalities that exist at the subnational level. Inequality also is evident in the comparison of the minimum value (3.71 deaths per 1,000 live births) and the maximum value (133 deaths per 1,000 live births, which is 35 times greater than the minimum value). The large gap among the countries also is reflected in the coefficient of

FIGURE 1. Infant mortality in the Americas, by subregion, for 1980–1985 and 1995–2000.

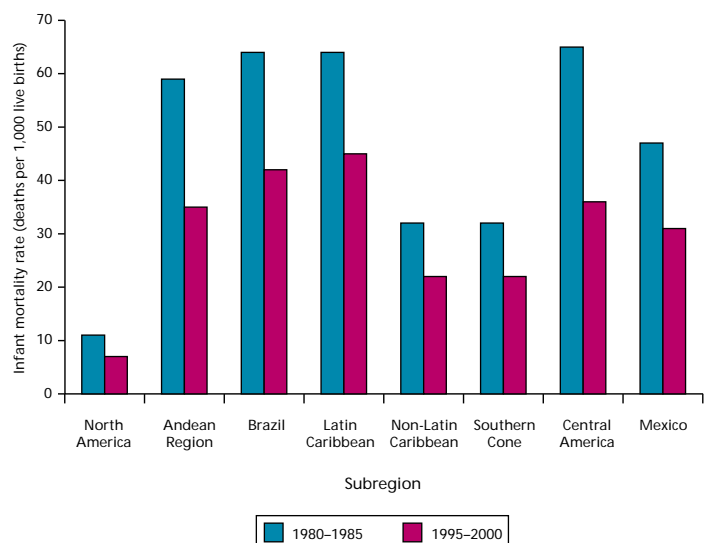


TABLE 2. Measures of the distribution of health indicators of subnational geographic units in selected countries of the Americas, 1995-1998.^{a-o}

| Indicator | n | Minimum | Maximum | Range | Mean | Median | Standard deviation | Coefficient of variation |
|--|-----|---------|---------|-------|------|--------|--------------------|--------------------------|
| Infant mortality rate (deaths per 1,000 live births) | 363 | 3.7 | 133.0 | 129.3 | 24.4 | 19.7 | 18.9 | 0.8 |
| Illiteracy (% population) | 258 | 0.7 | 58.2 | 57.6 | 16.5 | 13.0 | 11.4 | 0.7 |
| Total fertility rate (children per woman) | 241 | 1.3 | 6.0 | 4.7 | 3.3 | 3.2 | 1.1 | 0.3 |
| Urban population (%) | 250 | 11.0 | 100.0 | 89.0 | 60.4 | 64.3 | 22.8 | 0.4 |
| Annual population growth rate (%) | 217 | -3.9 | 8.8 | 12.7 | 2.1 | 2.0 | 1.4 | 0.7 |
| Life expectancy at birth (years) | 192 | 56.8 | 79.0 | 22.2 | 69.8 | 70.0 | 3.9 | 0.1 |
| Access to potable water services (% population) | 261 | 0.0 | 99.5 | 99.5 | 57.1 | 66.7 | 30.4 | 0.5 |
| Access to excreta disposal services (% population) | 244 | 0.0 | 98.3 | 98.3 | 44.9 | 43.5 | 29.8 | 0.7 |
| Doctors per 10,000 population | 222 | 0.8 | 99.1 | 98.4 | 13.7 | 9.6 | 14.3 | 1.0 |
| Children < 1 year vaccinated against measles (%) | 213 | 15.0 | 133.9 | 118.9 | 74.9 | 77.6 | 19.5 | 0.3 |
| Prevalence of low birthweight (%) | 203 | 0.0 | 14.3 | 14.3 | 6.6 | 6.6 | 1.6 | 0.2 |

Sources:

^a Rede Interagencial de Informações para Saúde. Indicadores e dados básicos para a saúde. IDB 98 Brasil. Brasília: Ministério da Saúde; 1998.

^b Ministerio de Salud de Costa Rica, OPS/OMS. Indicadores Básicos 1995. Situación de Salud en Costa Rica. 1995.

^c Ministerio de Salud Pública, OPS/OMS. Indicadores Básicos 1997. Situación de Salud en Cuba. 1997.

^d Secretaría de Salud de México, OPS. Indicadores Básicos 1997. Situación de Salud en México. 1998.

^e Ministerio de Salud de Nicaragua, OPS/OMS. Indicadores Básicos 1997. Situación de Salud en Nicaragua. 1997.

^f Ministerio de Salud Pública de Uruguay. La Salud de Uruguay en Cifras. 1997.

^g Ministerio de Salud Pública de Ecuador, Instituto Nacional de Estadística y Censos, OPS/OMS. Situación de la Salud en el Ecuador. Tendencias de la natalidad y mortalidad 1987-1997. 1998.

^h Ministerio de Salud de Guatemala, OPS/OMS. Indicadores Básicos 1998. Situación de Salud en Guatemala. 1998.

ⁱ Ministerio de Salud de Panamá, OPS/OMS. Indicadores Básicos 1998. Densidad por Región de Salud. 1998.

^j Ministerio de Salud Pública y Bienestar Social de Paraguay, OPS/OMS. Indicadores Básicos de Salud—Paraguay. 1998.

^k OPS/OMS. Situación de Salud de la Argentina. 1999.

^l Secretaría de Salud de Honduras, OPS/OMS. Indicadores Básicos 99. Situación de Salud en Honduras. 1999.

^m Ministerio de Salud de Perú, PAHO. Indicadores Básicos 1999. Situación de Salud en el Perú. 1999.

ⁿ Ministerio de Sanidad y Asistencia Social, Dirección General Sectorial de Epidemiología y Dirección de Análisis de Situación de Salud de Venezuela, OPS/OMS. Indicadores Básicos 1999. Situación de Salud en Venezuela. 1999.

^o Ministerio de Salud de Colombia, OPS/OMS. Indicadores Básicos 2000. Situación de Salud en Colombia. 2000.

variation,¹ which has a value of 0.8. Despite the differences, approximately 5% of the geographic units have values above 60 deaths per 1,000 live births and more than half have values close to the Regional mean of 24 deaths per 1,000 live births.

The median values for the infant mortality rate at the subnational levels show variations among countries, ranging from 5.7 deaths per 1,000 live births in Canada to 83 deaths per 1,000 live births in Bolivia (Table 3). Bolivia's infant mortality rate ratio, 15 times greater than Canada's, indicates the high degree

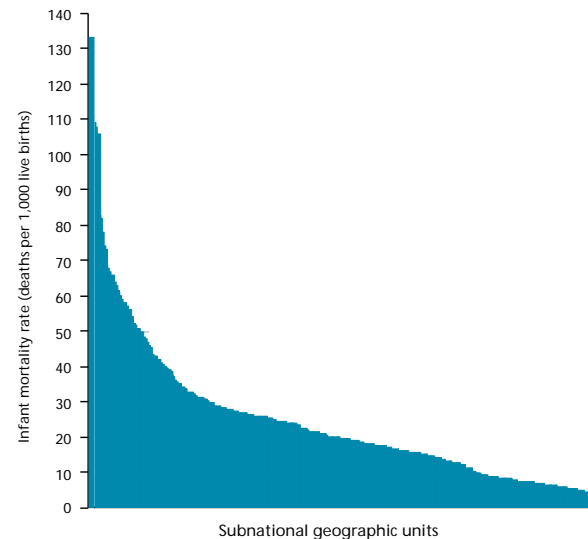
¹ The ratio of the standard deviation to the mean.

of inequality between these countries (Figure 3). The median values within the countries suggests four possible health inequality profiles: very low levels of infant mortality (fewer than 10 deaths per 1,000 live births); low levels (close to the Regional median of 24 deaths per 1,000 live births); high levels (20 to 40 deaths per 1,000 live births); and very high levels (40 or more deaths per 1,000 live births). In practically all the countries, the range between the maximum and minimum values reflects the degree of inequality within them. For example, the infant mortality rate ratio in Peru, which has high levels of infant mortality (nearly double the Regional level), shows great internal inequalities. The rates in areas with the highest number of infant deaths are nearly four times those in the areas with the lowest number of infant deaths. Nevertheless, it is important to note that the greatest internal infant mortality inequalities do not occur necessarily in the countries with the highest national rates. In Colombia, which has low levels of mortality, the mortality rate ratio is 6.2, higher than that of all the countries analyzed. In contrast, in Uruguay and Cuba, which have low or very low levels of mortality, the mortality rate ratio between subnational units is lower.

Taking into account small population sizes, fairly homogeneous socioeconomic conditions, and unstable infant mortality rates, the differences among Non-Latin Caribbean countries were analyzed utilizing life expectancy at birth for subnational units as the health status indicator. The average life expectancy at birth in this subregion in the 1995–2000 period is 72.6 years, with women outliving men by 5.2 years. Greater differences between men and women also were observed at the country level: for example, women outlive men by 6.5 years in Aruba, Saint Lucia, Guyana, Guadeloupe, the Bahamas, and Martinique. In contrast, in the Virgin Islands, Saint Vincent and the Grenadines, and Montserrat, women outlive men by only three or fewer years. Guyana and Saint Kitts and Nevis ranked considerable lower than the subregional average figure for life expectancy at birth for women (Figure 4).

As is the case with life expectancy in the Non-Latin Caribbean, infant mortality rates within a country vary according to location and social group, indicating that inequalities exist regardless of a country's mean rate (Figure 5a). For example, in Washington, D.C. (USA), infant mortality is higher for minor-

FIGURE 2. Infant mortality rates in selected countries of the Americas^a, 1995–1998. Distribution pattern from 363 subnational geographic units.



^a Argentina, Belize, Bolivia, Brazil, Canada, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Nicaragua, Panama, Paraguay, Peru, United States of America, Uruguay, and Venezuela.

TABLE 3. Measures of the distribution of the infant mortality rate for subnational geographic units of countries of the Americas, 1995-1998.^{a-o}

| Indicator | <i>n</i> | Minimum | Maximum | Ratio | Range | Mean | Median | Standard deviation | Coefficient of variation |
|--------------------------|----------|---------|---------|-------|-------|------|--------|--------------------|--------------------------|
| Argentina | 24 | 9.7 | 34.4 | 3.55 | 24.7 | 20.8 | 20.05 | 6.2402 | 0.3 |
| Belize | 6 | 11.4 | 35.2 | 3.09 | 23.8 | 20.4 | 16.55 | 9.3164 | 0.46 |
| Bolivia | 9 | 50 | 133 | 2.66 | 83 | 87.3 | 83 | 27.171 | 0.31 |
| Brazil | 27 | 19.66 | 74.07 | 3.77 | 54.41 | 40 | 35.02 | 15.572 | 0.39 |
| Canada | 11 | 4.6 | 12.2 | 2.65 | 7.6 | 6.43 | 5.7 | 2.2136 | 0.34 |
| Colombia | 27 | 4.5 | 28 | 6.22 | 23.5 | 14.1 | 14.8 | 5.2159 | 0.37 |
| Costa Rica | 7 | 3.71 | 15.68 | 4.23 | 11.97 | 12.3 | 13.69 | 4.0678 | 0.33 |
| Cuba | 15 | 5.4 | 10.3 | 1.91 | 4.9 | 8.09 | 8 | 1.4815 | 0.18 |
| Ecuador | 20 | 10.9 | 32.7 | 3.00 | 21.8 | 19.9 | 18.45 | 6.1882 | 0.31 |
| Guatemala | 22 | 24.02 | 58.03 | 2.42 | 34.01 | 38.1 | 35.52 | 10.457 | 0.27 |
| Mexico | 33 | 14 | 42.8 | 3.06 | 28.8 | 24 | 22.2 | 7.2612 | 0.3 |
| Nicaragua | 17 | 12.63 | 40.12 | 3.18 | 27.49 | 23.8 | 22.4 | 8.3399 | 0.35 |
| Panama | 10 | 11.1 | 29.8 | 2.68 | 18.7 | 19.2 | 18.1 | 6.1744 | 0.32 |
| Paraguay | 18 | 16.45 | 61.54 | 3.74 | 45.09 | 25.3 | 21.26 | 10.818 | 0.43 |
| Peru | 24 | 26 | 109 | 4.19 | 83 | 54.9 | 51.5 | 18.761 | 0.34 |
| Uruguay | 18 | 13.3 | 25.7 | 1.93 | 12.4 | 18.4 | 18.35 | 2.7759 | 0.15 |
| United States of America | 51 | 4.4 | 14.9 | 3.39 | 10.5 | 7.42 | 7.4 | 1.7729 | 0.24 |
| Venezuela | 24 | 8.9 | 42.1 | 4.73 | 33.2 | 24.9 | 24.55 | 7.2736 | 0.29 |

Sources: See references a-o in Table 2.

ity populations, particularly African-Americans, whose risk is at least twice that of the white population (Figure 5b).

Geographic units with infant mortality rates more than two standard deviations above the mean were identified in 11 of 18 countries in the Americas.

Measuring health inequalities and their determinants

In order to determine and understand long-term health trends, the links among health status and individual biological and social characteristics, economic and political organization, social structure, cultural background, and demographic and macroecological processes must be recognized and taken into account.

A population's demographic and socioeconomic characteristics are basic determinants of its living conditions. In the subnational units of Peru and

Brazil, there is an inverse relationship between the infant mortality rate and the proportion of the population with access to potable water, with correlations of -0.65 and -0.66 , respectively. The negative correlation between these two variables suggests that, in these countries, the infant mortality rate decreases as access to potable water increases (Figures 6a and 6b).

The relationship between the infant mortality rate and the proportion of the population with access to excreta disposal services in the subnational units of Panama and Peru also is inverse, with correlations of -0.80 and -0.67 , respectively. In most of Panama's provinces, more than 70% of the population has access to excreta disposal services and infant mortality rates are lower than 20 deaths per 1,000 live births. However, the provinces with the least access also have the highest infant mortality rates. As in the case of access to potable water, this suggests that as access to excreta disposal increases in these countries, the infant mortality rate decreases (Figures 7a and 7b).

It is important to note that a negative correlation was also found in Uruguay, even though the country has a low infant mortality rate and good access to water (corr = -0.49) and excreta disposal (corr = -0.44) in comparison to other countries in the Region. This correlation was not as strong as in the other countries, but the inverse relationship between the infant mortality rate and environmental factors is still evident.

In the analysis of the relationship between the infant mortality rate and the proportion of illiterate population in several countries in the Region, Brazil showed an almost perfect positive correlation (corr = 0.94) (Figure 8a). This suggests a very strong association between this socioeconomic factor and infant mortality in this country, where infant mortality increases as illiteracy increases. A strong positive correlation between these two indicators (corr. = 0.75) also is seen in Peru (Figure 8b).

FIGURE 3. Infant mortality rates in selected countries of the Americas, 1995–1998. Country distribution according to subnational geographic units.

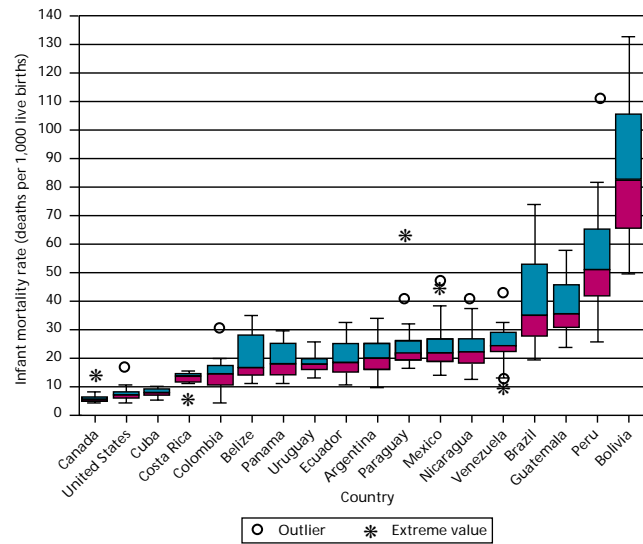


FIGURE 4. Differences in life expectancy at birth among females from Non-Latin Caribbean countries, 1995–2000.

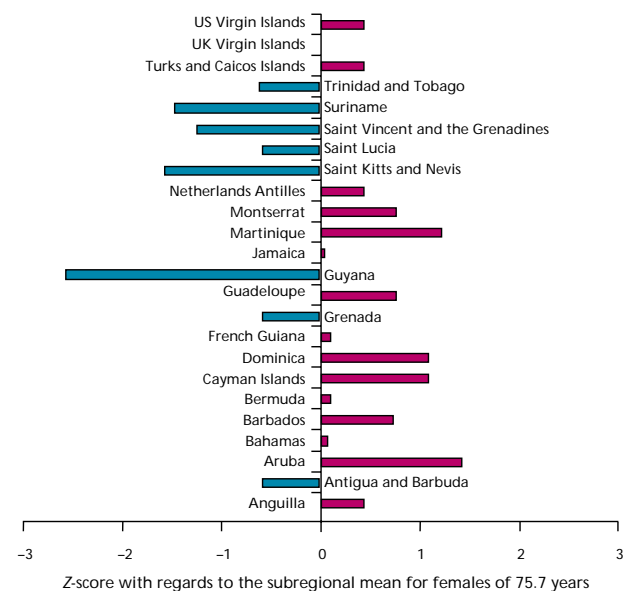
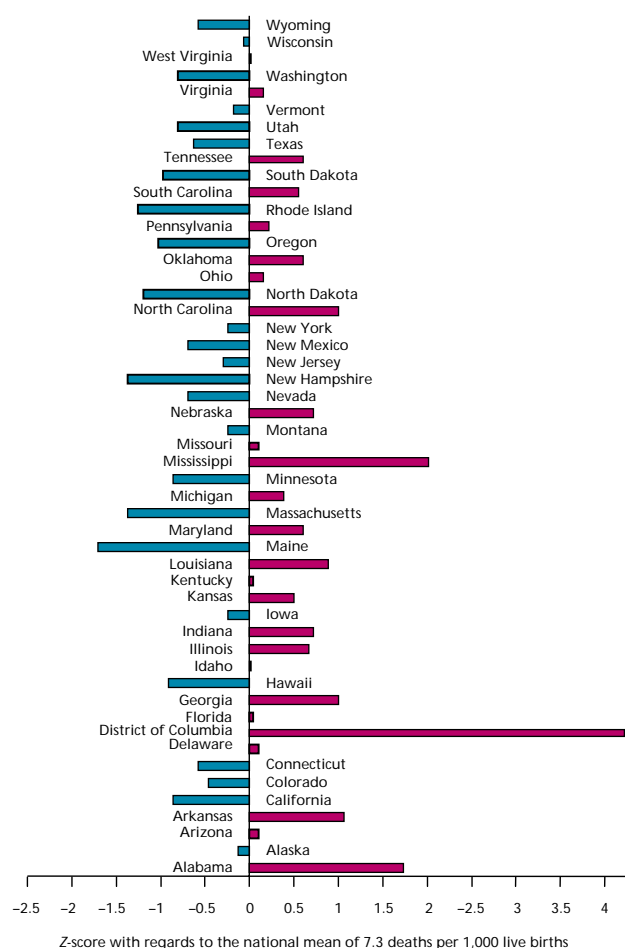


FIGURE 5a. Infant mortality in the United States of America, by state, 1996.



Use of the distributions of subnational-level basic health data

The graphs and maps presented in this chapter identify population groups in geopolitical units that show the greatest inequalities in health and that require the greatest health care interventions.

The availability of core health data disaggregated at subnational levels permits the exploration of the magnitude of within-country distributional inequalities in health. The exploratory analysis of health inequalities was done using the Lorenz curve² and the Gini coefficient.³ Using data from Guatemala's 27 health areas and Uruguay's 18 departments, figures 9a and 9b show the magnitude and distribution of inequalities in infant mortality in these two countries. In a situation of "perfect equality," each population quintile should account for only 20% of the total deaths. However, these Lorenz curves show that almost 35% of Guatemala's and 25% of Uruguay's infant deaths occur in the highest infant mortality rate quintile. Looking at the opposite extreme of the distribution, Guatemala's lowest infant mortality rate quintile accounts for only 10% of infant deaths, and Uruguay's accounts for 15%. These internal disparities are also expressed as a ratio between extreme quintiles (the ratio of the 20% highest/the 20% lowest):

Guatemala's is 3.5 and Uruguay's is 1.6. The Gini coefficient is a summary measure of these inequalities. The Gini values for Guatemala are 0.22 and 0.09 for Uruguay. However, the Gini coefficient does not account for socioeconomic factors in the assessment of health inequalities, and therefore it is not possible to determine if the highest infant mortality rate quintile is indeed the poorest quintile in the population.

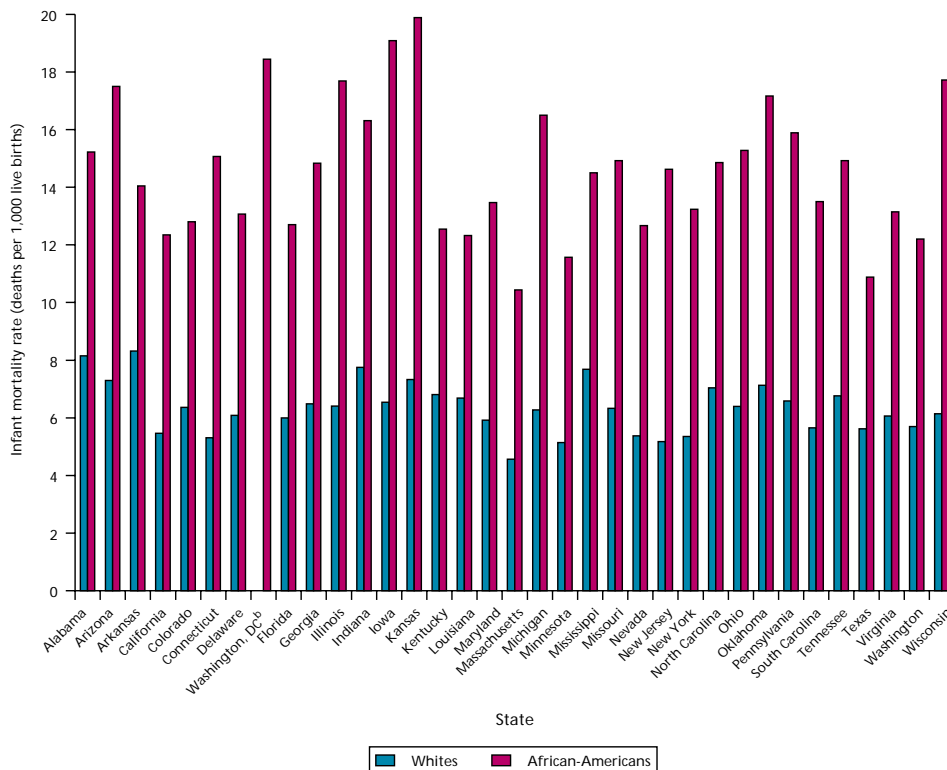
In contrast, core health data, disaggregated at subnational levels, facilitated the exploration of the degree of internal distributional inequalities in health, taking into account important socioeconomic variables. The population was broken down into a socioeconomic hierarchy according to the values

² The Lorenz curve shows the difference between two distributions. When the proportion in each quintile for the y-axis variable is equal to the proportion in each quintile for the x-axis variable, the values plot a 45-degree line. The degree of curvature reflects the degree of difference (inequality) between the two proportions.

³ The Gini coefficient, a summary measure of the deviation in the Lorenz curve, is the ratio of the area between the Lorenz curve and the 45-degree line to the whole area above or below the 45-degree line. If the Lorenz curve lies on the 45-degree line, the value of the Gini coefficient is zero. As the deviation increases, so does the Gini Coefficient; the maximum possible value of the Gini coefficient is 1.

⁴ The concentration curve plots the cumulative proportions of health against the cumulative proportions of the population, ranking the population by socioeconomic status, from the most disadvantaged to the least disadvantaged. If health is equally distributed across socioeconomic groups, then the concentration curve will

FIGURE 5b. Comparison of infant mortality rates between Whites and African-Americans in the United States of America, by state, 1996.^a



^a Only states with rates > 0.0 or with reliable estimates are shown.

^b Infant mortality rate for Whites in Washington, DC is zero.

of one of the three health determinants: poverty, access to potable water, and the social development index. This socioeconomic hierarchy was then related to the observed distribution of the infant mortality rate, a key health outcome variable. This analytical approach is expressed by the concentration curve⁴ and its associated concentration index.⁵ Figures 10a and 10b illustrate this approach using national core health data from Brazil's 27 states and Costa Rica's 81 cantons to explore socioeconomic inequalities in infant mortality within these countries. The negative value of both concentration indexes indicates that the infant mortality is highest among the poorest members of the population. The graphs show that the concentration index is more than twice as great in Brazil as in Costa Rica. In Brazil, the poorest quintile accounts for almost 35% of all infant deaths, whereas the richest quintile accounts for

coincide with the 45-degree diagonal. The farther the concentration curve lies from the diagonal, the greater the degree of inequality in health (Wagstaff A, Paci P, Van Doorslaer E. On the measurement of inequalities in Health. *Soc Sci Med* 1991;33(5):545-57).

⁵ The concentration index is a summary measure of the distance between the concentration curve and the diagonal of perfect equality and, hence, it measures the extent of health inequality that is systematically associated with socioeconomic status. It is defined as twice the area between the concentration curve and the diagonal. Its values range from -1 (health inequality concentrated in the most socioeconomically disadvantaged population group) to +1 (health inequality concentrated in the least socioeconomically disadvantaged population group) (Wagstaff A, Paci P, Van Doorslaer E. On the measurement of inequalities in Health. *Soc Sci Med* 1991;33(5):545-57).

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FIGURE 6a. Correlation between infant mortality rate and level of access to potable water services, Peru, 1996.

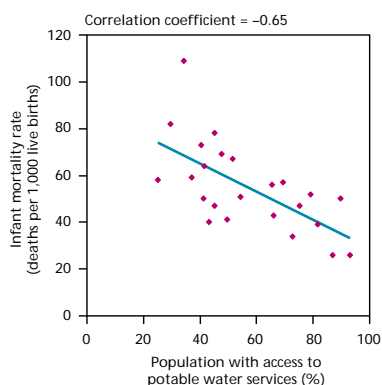


FIGURE 6b. Correlation between infant mortality rate and level of access to potable water services, Brazil, 1997.

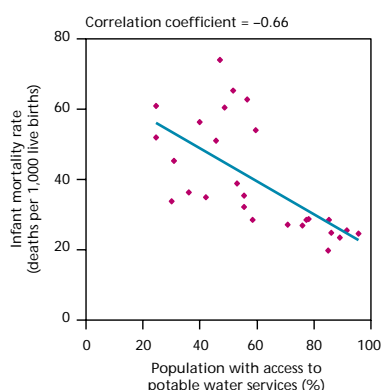
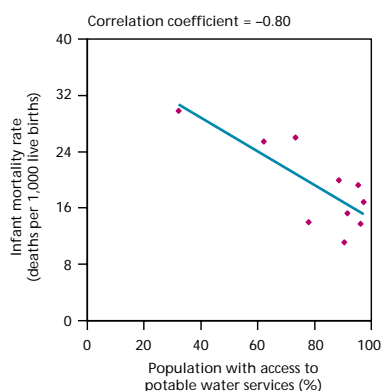


FIGURE 7a. Correlation between infant mortality rate and level of access to excreta disposal services, Panama, 1996.



10%. In contrast, Costa Rica's poorest quintile accounts for almost 25% of all infant deaths, whereas the richest quintile accounts for 15%. Using data from Peru's 24 departments, figure 10c shows the inequalities in infant mortality due to acute diarrheal diseases among the cumulative population of live births, ranked by socio-economic level and level of access to potable water. This particular situation is also corroborated by the strong negative correlation between infant mortality and levels of access to potable water, as shown in Figure 6a. The information derived from these analyses can help decision-makers to identify priority areas for health interventions as well as to direct the allocation of resources to address national equity goals.

In planning intervention strategies it is useful to base health analyses on the patterns and degree of spatial distribution. To determine levels of unmet health needs utilizing various basic indicators, PASB proposes the analysis of multiple variables with linear combinations of Z-scores⁶ to identify health needs in critical areas. By analyzing specific determinants, interventions can be targeted to reduce specific health risks and existing health inequalities. Figures 11a-c, which are thematic mappings that can be used in health analysis and program interventions, show the distribution of health needs at sub-national levels in Brazil, Mexico, and Peru.⁷ These epidemiological maps make it possible to locate the areas and populations with the highest level of unmet health needs in these countries.

The standardization of the indicators makes it possible to establish a hierarchical order of inequality between units, as well as to combine different indicators with different units of measurement in a single index. The health needs index presented here is a standardized linear combination of the values of three basic indicators at the subnational level: infant mortality rate, proportion of the population with access of potable water, and literacy rates. The health needs index provides an operational application of the results of the inequality assessments that identify the areas with higher degrees of

⁶ Scores expressed as standard deviations from the mean value.

⁷ These maps were prepared with ArcView CHALK 3.2 Geographic Information System, using the standard deviation from the means of the selected indicators (expressed as a Z-score) to classify geographic units. These Z-scores represent a given indicator's relative distance from the national mean; as such, it constitutes a minimum attainable goal.

needs and inequalities and facilitates the targeting of health interventions.

Directing health interventions to achieve health equity

In order to guide rational, effective, and equitable decision-making, it is imperative that health situation analyses measure health inequalities with greater specificity and make use of available national and subnational basic information. The health analyses presented in this report reveal the unequal rates in the basic health indicators at subregional, national, and subnational levels and the extent of current health equality gaps between and within countries. To identify areas or population groups with the greatest health care needs, the countries in the Region can use the simple statistical measures and methodological procedures presented here (absolute frequency distribution and the range of selected basic indicators and measures of distribution and dispersion of indicators).

In summary, since a country's health indicators expressed as national means do not reflect that nation's heterogeneity, a new strategy is required to geographically disaggregate information for health analyses. High inequality patterns were observed at both Regional and subregional levels and were replicated with greater intensity at the subnational and local levels. Some countries in the Region of the Americas have major internal health differences and inequalities, as shown by large ranges of distribution and the extent of the dispersion of indicators, as well as high Gini coefficients, concentration indices, and coefficients of variation. Subnational analyses facilitate rational decision-making to determine priorities and health policies, and the planning and eval-

FIGURE 7b. Correlation between infant mortality rate and level of access to excreta disposal services, Peru, 1996.

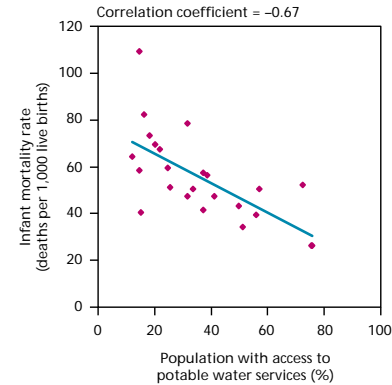


FIGURE 8a. Correlation between infant mortality rate and level of illiteracy in the population, Brazil, 1997.

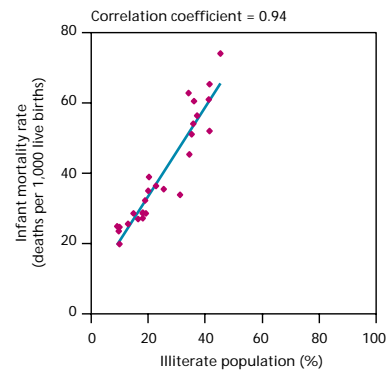
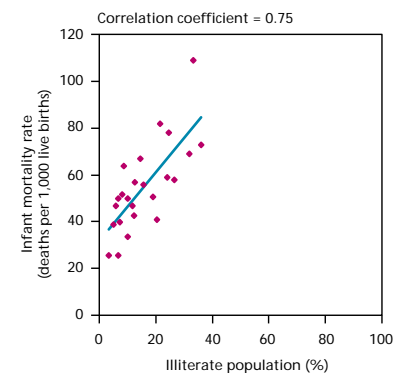


FIGURE 8b. Correlation between infant mortality rate and level of illiteracy in the population, Peru, 1996.



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FIGURE 9a. Inequalities in infant mortality: cumulative distribution of deaths under age 1 among the cumulative population of live births, ranked by magnitude of infant mortality rate, Guatemala, 1997.

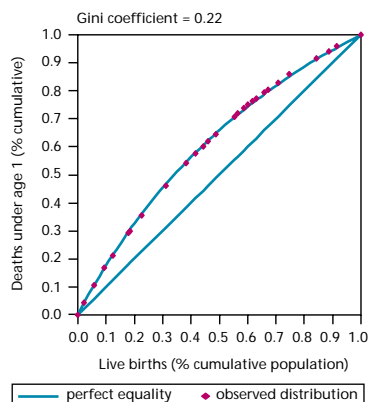


FIGURE 9b. Inequalities in infant mortality: cumulative distribution of deaths under age 1 among the cumulative population of live births, ranked by magnitude of infant mortality rate, Uruguay, 1997.

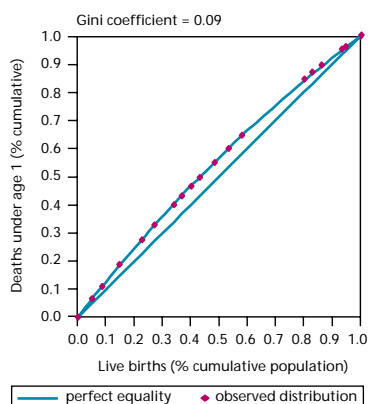
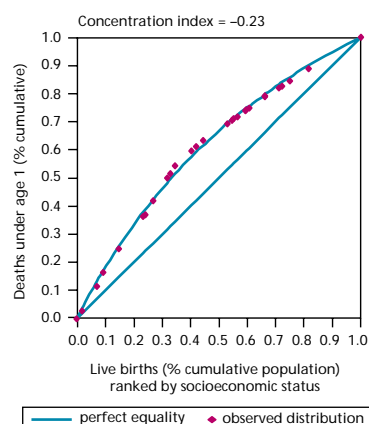


FIGURE 10a. Inequalities in infant mortality: cumulative distribution of deaths under age 1 among the cumulative population of live births, ranked by socioeconomic status, according to the proportion of households below the national poverty line, Brazil, 1997.



uation of those health interventions that affect the detected health inequities.

The great variability in the levels of needs and health inequalities within the countries has been shown in this report through the analysis of such basic indicators as infant mortality, poverty, illiteracy, and access to potable water. The rates in some countries tend to be more homogeneous, as the dispersion indicators indicate, while in others they are very heterogeneous, due to the persistence of major differences in the population's health and living conditions.

The analysis of the health situation and its trends based on distributions of the basic indicators at subnational and local levels will show both the magnitude and the distribution of health inequalities. It will identify the areas and the population groups that need specific policies, sustained intervention programs, and health services. In addition, it facilitates the recognition of the basic determinants that interact to affect individuals, population groups, and their environment. This information is fundamental to the reorientation of PASB's technical cooperation.

The development of the capacity to amass reliable health information will facilitate equity-based analyses as well as a more precise definition of sectoral priorities and improved health program planning, monitoring, and evaluation.

It is critical for Member States to target health interventions to those geographic areas and populations that have the highest levels of inequality and unmet health needs. Health situation analyses will assist countries in establishing priorities for their health programs and interventions and determining any national and local adjustments that may need to be made. This type of situation analysis, together with the consolidation of the Regional and national core health data initiatives, will support the formulation of equitable health policies and effective, quality programs that can improve the well-being of the entire population of the Americas, especially those most in need.

PASB is committed to providing leadership and support to its Member States so that they may generate objective information for the analysis, monitoring, evaluation of health conditions that will contribute to the reduction of unjust health inequalities. Health situation analysis requires an equity approach, which has important policy and operational implications: it will provide the framework needed for monitoring the health conditions of the countries of the Americas as well as assist in the achievement of health equity.

FIGURE 10b. Inequalities in infant mortality: cumulative distribution of deaths under age 1 among the cumulative population of live births, ranked by socioeconomic status, according to the magnitude of the national social development index, Costa Rica, 1998.

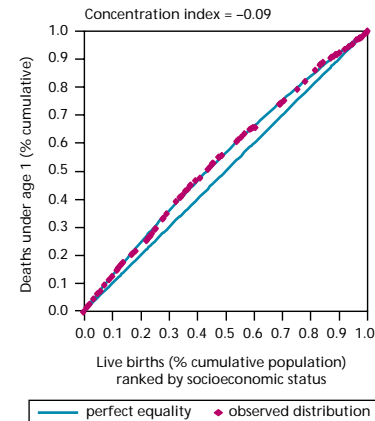


FIGURE 10c. Inequalities in infant mortality due to acute diarrheal diseases (ADD): cumulative distribution of deaths under age 1 due to ADD among the cumulative population of live births, ranked by socioeconomic status, according to the level of access to potable water, Peru, 1996.

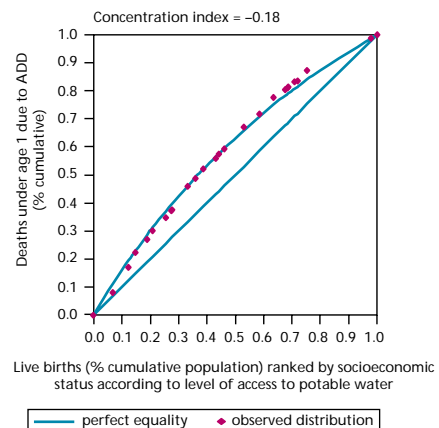


FIGURE 11a. Health needs index, Brazil, 1997.

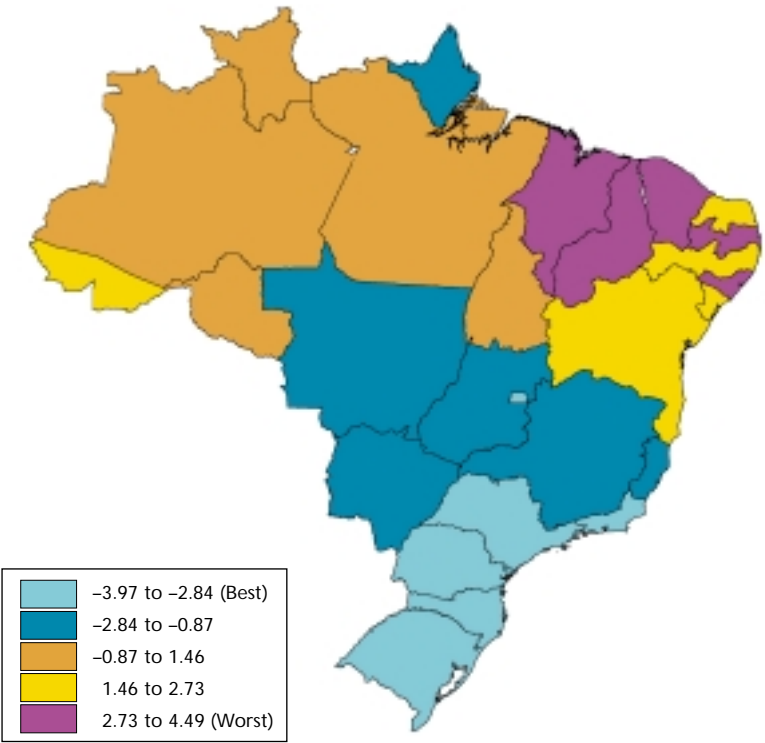


FIGURE 11b. Health needs index, Mexico, 1997.

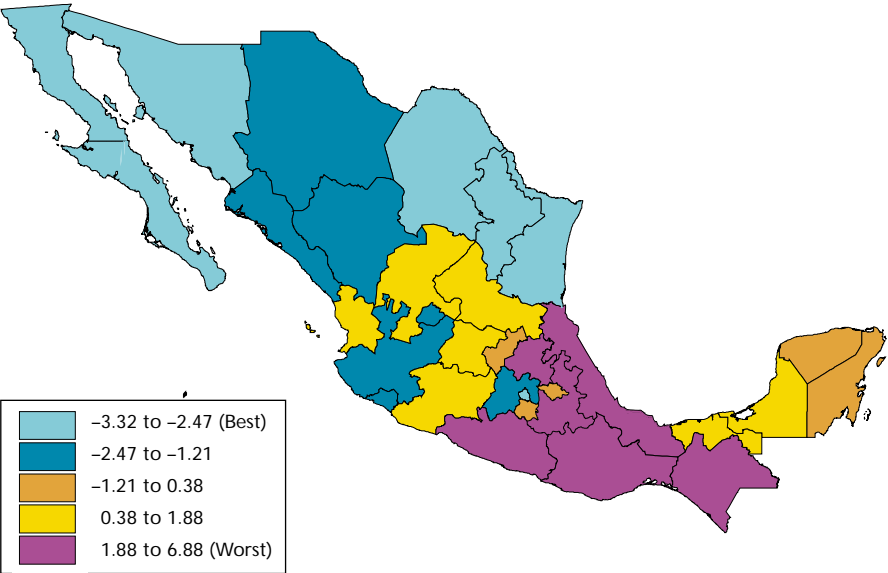
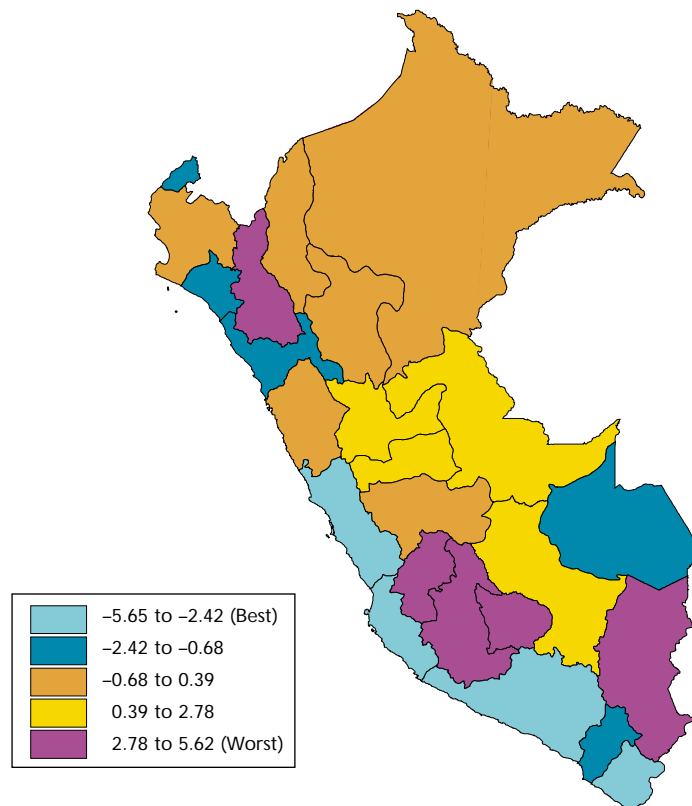



FIGURE 11c. Health needs index, Peru, 1996.



Health in Human Development



The population's health is both a product of society and an indispensable contribution to economic growth and political stability.



The approach that today is known as health in human development is based on the assessment of a population's health and its determinants. The concept of population health is the keystone of public health, and something that those who work in this field struggle every day to achieve. If gains are to be made in this regard, it is imperative that we improve our capacity to measure, monitor, and understand the complex dynamic of population health, which responds far less to the usual medical care interventions than to changes in the physical and social environment.

Population health is both a product of society and an indispensable contribution to economic growth and political stability. A population's level of health is, in itself, an excellent indicator of human development. Once this relationship is recognized, it becomes clear that the health sector must become more effective in establishing partnerships with other public and private players, including civil society organizations, as well as in spearheading the advocacy of public policies and programs that promote human health and development.

Changing health determinants

In order to reduce inequities in health, the health sector must lead the crusade to improve living conditions for the populations in greatest need. Today's definition of poverty not only is limited to the criterion of scarce economic resources, but also encompasses a comprehensive picture that involves limited opportunities, insecurity, and lack of participation in the decisions that affect individuals and collectivities. This new, broader view calls for an approach that takes into account access to social benefits such as education, health, housing, and a healthy environment, as well as the ethical element of justice.

This perspective clearly delineates the social factors associated with unjust deprivation because of race, ethnicity, gender, place of birth, or other characteristics. These factors need to be examined in the Region of the Americas, where disparities continue to widen despite all the progress that has been made in the field of health. These vast inequalities need to be documented, and their relationship to their socioeconomic determinants must be understood so that the countries of the Americas can examine them and set forth interventions to reduce them. This knowledge will make it possible for the

issue of inequities in health to be included on political agendas, which, in turn, will help to ensure that all the players in the sector are included in the discussions on how to reduce them.

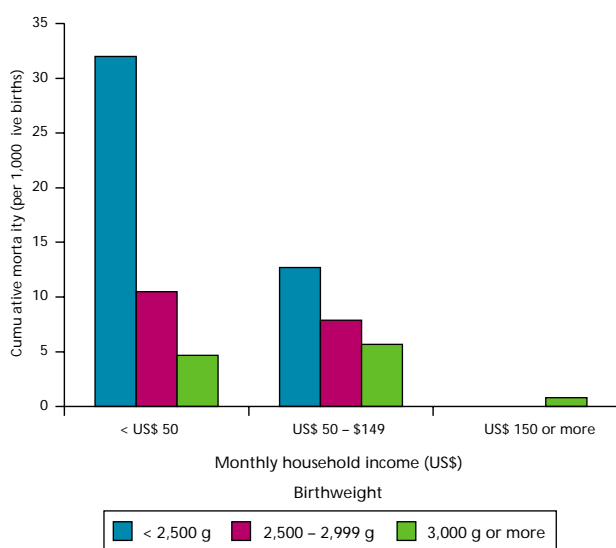
PASB has concentrated on incorporating this new perspective into policy development and on generating information that will enable the Bureau to come up with suitable ways to measure inequities. Much of the available information on inequities in health and their relationship to social and economic macrodeterminants comes from data obtained through household surveys, which have been gathered and systematized for use by the health sector. Following are some examples of the disparities that have been documented in this manner.

Inequity related to household income and capital

In the city of Pelotas, in southern Brazil, cumulative mortality among children 1 to 4 years of age during 1982–1987 was five times greater for families with

a monthly household income of US\$ 50 or less than it was for families with a monthly income of US\$ 150 or more (see Figure 1). And, as can be seen in Figure 2, in Peru in 1996, the prevalence of respiratory infections among children under 5 years old whose families would be classified in the lowest quintile of household capital (21%) was almost twice as high as it was among those from families in the highest quintiles (12%).

FIGURE 1. Cumulative mortality in children 1–4 years old, by household income level and birthweight, Pelotas, Brazil, 1982–1987.



Source: Victora C, Barros G, Hutley S, Teixeira AM, Vaughan JP. Early childhood mortality in a Brazilian cohort: The roles of birthweight and socioeconomic status. *Int J Epidemiol* 1992;21:423–432.

Inequity related to level of formal education

In Chile, the overall life expectancy of 20-year-old women increased by nearly two years between the 1985–1987 and 1994–1996 periods. Women who had had 13 or more years of formal schooling fared far better than the rest, however: life expectancy in that group rose during the decade from 62.5 to 72.5, whereas those with lower levels of formal education

had only minimal gains (see Figure 3). Also in Chile, during 1990–1995 neonatal mortality rates for infants born to women with no formal schooling were 12 times higher than for those whose mothers had had 13 or more years of schooling (see Figure 4). Moreover, post-neonatal mortality rates were twice as high for the former as they were for the latter.

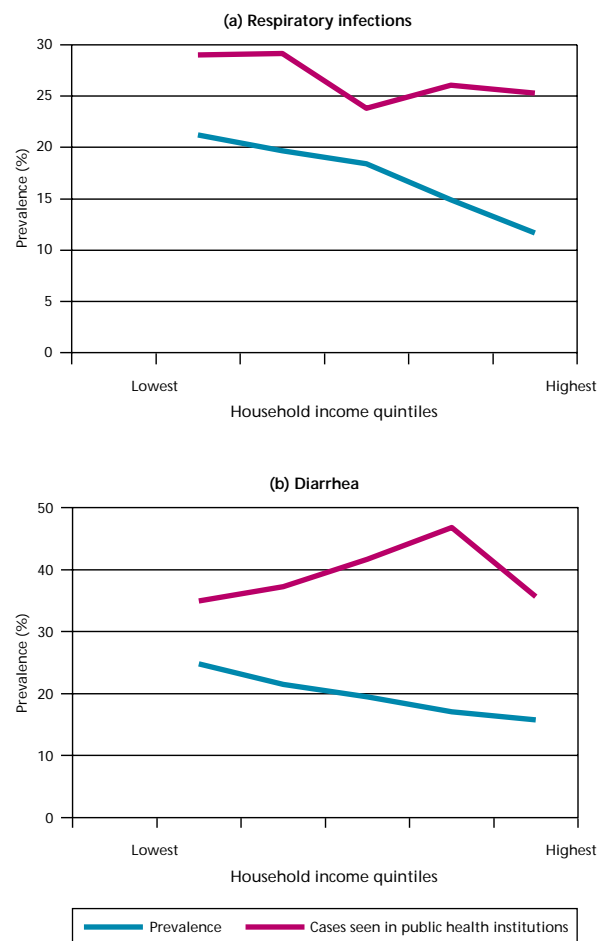
Inequity related to ethnic group

As shown in Figure 5, in Brazil in 1990, the infant mortality rate for children of black mothers with eight or more years of formal education was comparable to that for children of illiterate white mothers, and it was twice as high as the rate for the children of white mothers in the same education bracket, namely eight or more years of schooling.

In Guatemala by 1995, the overall percentage of children under 5 years old without access to any form of immunization had fallen to less than 4%, but among the indigenous population the proportion remained at almost 14% (see Figure 6).

The year 1999 saw conclusion of the project “Investments in Health, Equity and Poverty—Equity in Health in Latin America and the Caribbean” (IHEP-EquiLAC), a joint undertaking of PASB, the United Nations Development Program (UNDP), and the World Bank. This project examined inequalities in access to financing and health care, and was carried out simultaneously in Brazil, Ecuador, Guatemala, Jamaica, Mexico, and Peru. In all these countries, the project made it possible to gain a fuller appreciation of the great disparities that exist, and in some of them recommendations were made for new policies and interventions aimed at promoting equity. For example, significant inequalities in the distribution of public subsidies were detected in Peru, especially in rural hospitals. Similar observations also were made in Brazil, Ecuador, Guatemala, Jamaica, and Mexico, which will help to steer health policies toward change.

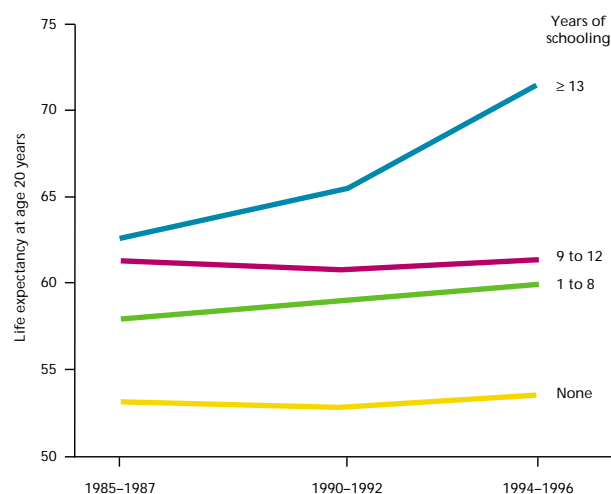
FIGURE 2. Prevalence of respiratory infections and diarrhea in children under 5 years old and percentage seen in public health institutions, by household income quintiles, Peru, 1996.



Source: Peru, Demographic and Health Survey, 1996.

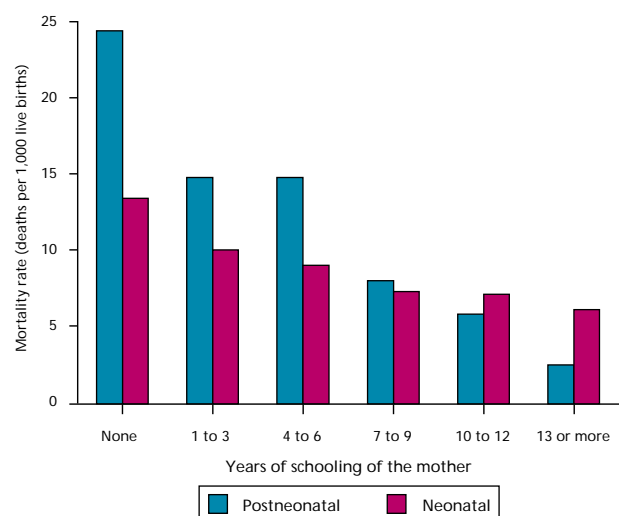
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FIGURE 3. Life expectancy of Chilean women aged 20 years, by years of schooling, 1985–1987 to 1994–1996.



Source: Vega J, Hollstein RD, Delgado I, Yach D. Social inequalities and health in an intermediate development nation: Education and adult mortality in Chile, 1980–1996. *Global Health Equity Initiative Book*. Oxford University Press, 2000.

FIGURE 4. Neonatal and post-neonatal infant mortality, by years of schooling of the mother, Chile, 1990–1995.



Source: Hollstein RD, Vega J, Carvajal Y. Socioeconomic level and infant mortality in Chile in the period 1985–1995. *Rev Med Chil* 1998; 236:333–340.

In a project designated to reform and decentralize the health sector as a way to protect the poor in the Caribbean, innovative methods were developed for working with local communities and governments. Also, consideration was given to new ways of examining the problem and new approaches to intervention.

As part of its effort to incorporate gender equity in health matters, PAHO is developing a guide for ensuring that this issue is included in health situation assessments; in the monitoring of health sector reform; and, specifically, in the implementation of a project that addresses gender equity as it relates to the reform processes.

PASB also coordinated a multicenter research project that drew on data from household surveys and the censuses to gain a better understanding of the relationship between socioeconomic determinants and health inequities in Bolivia, Brazil, Colombia, Nicaragua, and Peru. This project aims to increase basic knowledge for use in developing new policies and interventions that will promote greater equity.

To facilitate and promote the use of this important data source, the Bureau has joined IDB, the World Bank, and ECLAC in a project to improve surveys of living conditions and in producing reviews of inequities in selected countries. Also, data are being analyzed on the unequal access to medical care services and on the use and misuse of drinking water and other public assets related to health.

To conclude the first phase of a process for estimating national health accounts in the Region, a regional workshop was convened in El Salvador and attended by representatives from all the Central American countries, Bolivia, the Dominican Republic, Ecuador, and Peru, plus the World Bank, IDB, and USAID. A second workshop was held in Brazil with representatives from Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Paraguay, Uruguay, and Venezuela attending. These countries are participating in the second phase of the national health accounts ini-

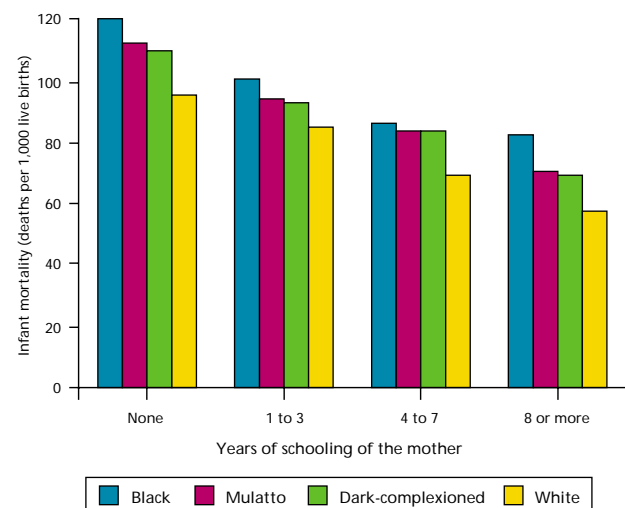
tiative, which is being carried out with support from IDB, the World Bank, USAID, and PASB. Work also continued on building up the database on health expenditures and investments in the Region.

In addition, a high-level technical meeting of experts from IDB, the World Bank, ECLAC, UNDP, WHO, and PASB, together with researchers from Latin America and the Caribbean, the United States of America, and England, reviewed and validated the results of the PASB/IDB/ECLAC project on health investment, economic growth, and household productivity, as well as the PASB/UNDP/World Bank project on health, equity, and poverty. Recommendations issued at this meeting will serve as a platform for developing guidelines and indicators to monitor the impact of macrodeterminants that govern the public health situation and the access, utilization, and financing of health services. It also will be possible to measure the positive impact that improvements in the population's health will have on long-term economic growth.

During 1999, the Bureau continued to execute the project to prevent domestic violence and care for its victims that Norway and Sweden have financed in the seven Central American countries (see Table 1). In addition, work continued on a similar project in three Andean countries (Bolivia, Ecuador, and Peru), which is financed by the Kingdom of the Netherlands. The following section summarizes the main accomplishments of these projects during the year:

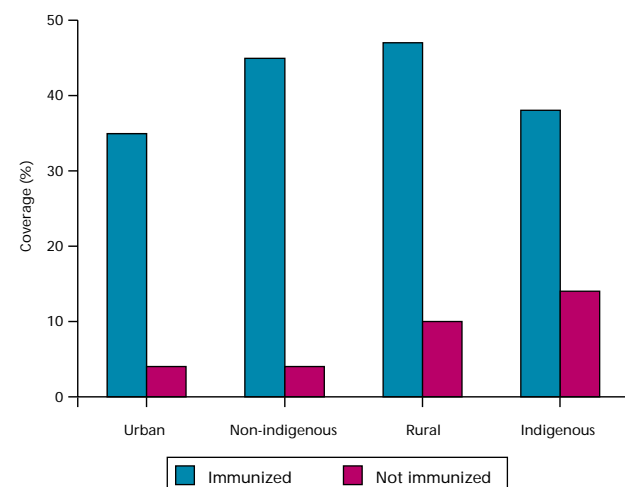
- A total of 54 networks were established—24 in the Andean countries and 30 in Central America.
- Intervention strategies were defined and implemented based on a study of the critical path that women affected by domestic violence follow in search of help—research that identifies persons and institutions that respond to the problem. Results also were used to advocate prevention programs and policies in the countries.

FIGURE 5. Infant mortality by years of schooling and race of the mother, Brazil, 1990.



Source: Pinto de Cunha E. Raça: Aspecto esquecido da inequidade em saúde. In: Brarata R et al. *Equidade e saúde: Contribuições da epidemiologia*. Rio de Janeiro: Abrasco/Fio Cruz, 1997.

FIGURE 6. Immunization gaps: percentage of fully immunized children and children with no immunization, by place of residence, Guatemala, 1995.



Source: Guatemala, Instituto Nacional de Estadística, 1995.

- Protocols and standards for the care of abused women were developed in the health services, and public health workers received training on how to respond to victims of violence; diagnose the situation appropriately; and provide treatment, education, and follow-up.
- A comprehensive model was developed for preventing domestic violence and caring for its victims, which includes the design and execution of national referral systems and training modules for health workers, police, and others who care for women living under violent situations.

PAHO also incorporated the gender perspective in its technical activities by promoting an expanded role for men in reproductive health decisions; health for women who work in export industries; women's participation in PLAGSALUD projects (activities dealing with pesticide use and health); and programs on tobacco use among adolescent women.

Eliminating inequities

During 1999, PASB gave priority to incorporating gender equity in health sector reforms. This effort has helped to strengthen technical cooperation capabilities within the Bureau and also the capacity of PAHO Member States to incorporate equity, particularly gender equity, in these reforms. Technical cooperation was directed toward producing health indicators and profiles to facilitate the assessment of situations related to gender equity.

TABLE 1. Activities for the prevention of domestic violence in seven Central American countries, 1999.

| Activities | Belize | Costa Rica | El Salvador | Guatemala | Honduras | Nicaragua | Panama | Total |
|--|--------|------------|-------------|-----------|----------|-----------|--------|-------|
| Central American health personnel who were trained | 255 | 2,521 | 1,749 | 1,192 | 534 | 1,067 | 503 | 7,821 |
| Institutional multipliers | — | 59 | 52 | 100 | 80 | 90 | 1,100 | 1,481 |
| No. of community groups | — | 7 | 19 | 2 | 37 | 8 | 10 | 83 |
| No. of networks | 3 | 15 | 4 | 5 | 12 | 10 | 4 | 53 |
| No. of therapy groups | — | 34 | 37 | 5 | 27 | 8 | 7 | 118 |
| No. of persons seen ^a | 170 | 759 | 897 | 1,592 | 3,528 | 338 | 600 | 7,884 |

^aJanuary to September 1999, and only in those places for which information was available.

A women's health project was concluded in the Mexico-United States border area; it included a gender-based analysis of mortality and occupational health in the maquila and agricultural industries. The project on leadership and participation in health education for indigenous women continued; it involves indigenous women's groups, and has a treatment and traditional medicine component that is carried out in community health centers in Guatemala. Indigenous health providers joined health professionals in the promotion of modern preventive practices. Based on the success of this project, PASB, in collaboration with indigenous representatives, drafted a proposal for extending the model to the other Central American countries and including a health training component.

In an effort to measure inequities based on such characteristics as gender, place of birth, or level of income, during 1999 eight countries began to include ethnicity and race questions in their household surveys. Two of them—Brazil and Guatemala—in collaboration with the PAHO/WHO Country Offices and various national institutions, initiated studies to identify health differences attributable to these variables.

At high-level meetings such as the Summit of Presidents of Central America and the Ibero-American Summit of Chiefs of State and Presidents of Government, PAHO urged the government representatives to turn their attention to the role that health plays in the reduction of poverty and the concretion of human development. These activities were carried out jointly with the PAHO/WHO Country Offices in Cuba and Guatemala and generated documents that were discussed with the ministries of health and presented to the respective chanceries prior to their inclusion on the agendas of the presidential summits.

Regional and subregional commitments

In May 1999 more than 130 lawmakers gathered in Havana to discuss four health issues of regional importance. This First Interparliamentary Conference on Health was the culmination of a Bureau-led effort to bring together members of health committees in the legislative assemblies, congresses, and parliaments of the Region of the Americas to discuss an agenda of shared concerns. Since 1999 had been dedicated to older persons, issues pertaining to the elderly were paramount in the lawmakers' debates. Other matters on the

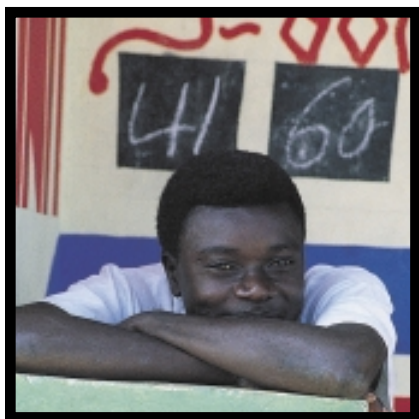
conference's agenda touched on such issues as violence against women, the HIV/AIDS epidemic, and the control of tobacco use. Conference discussions called for mobilizing political will for curbing tobacco use. To this end, support was given to the creation of a parliamentary network to advocate reducing the use of tobacco in the Americas. This network has proposed the promotion of political instruments that will protect children and youth against tobacco use.

During 1999, PASB collaborated with Costa Rica in various activities linked to the Central American Health Initiative (ISCA), including providing technical and logistic collaboration in the execution of ISCA subregional programs and projects based in Costa Rica, such as the program on Environment and Health in the Central American Isthmus (MASICA); the emergency and disaster preparedness program; PLAGSALUD, a project that focuses on the occupational and environmental aspects of pesticide exposure in the Central American isthmus; and a project to develop a comprehensive approach for dealing with domestic violence.

Cooperation with Costa Rica also dealt with the selection of priority issues to be presented in the forums that contribute to Central American integration in health, such as the Meeting of the Health Sector of Central America and the Dominican Republic (RESSCAD) and meetings of the Central American Council of Social Security Institutions. In addition, support was given to national authorities in connection with the formation of an interinstitutional group that would follow up on the commitments emanating from RESSCAD, especially those related to snake bite, disaster preparedness, and the strengthening of health services and epidemiological surveillance in border areas.

Technical assistance was provided to Costa Rica's Ministry of Health and the Social Security Fund in drafting a proposal aimed at improving public health services and the care being provided for people forced to migrate because of Hurricane Mitch. This represented an effort to improve the health of the migrant population and reduce the inequities in health that affect this particular group. The project has benefited approximately 300,000 persons, or 8% of the national population.

Domestic violence was an item on the agenda of the Meeting of the Ministers of Health of Central America and the Dominican Republic, at which the representatives committed themselves to incorporate a comprehensive model for dealing with domestic violence within their health systems. A panel discussion on this same subject was held at the Conference of Presidential Wives in Santiago, Chile. Contacts also were initiated with entities interested in a project aimed at promoting the participation of men in reproductive health programs in Central America.



The role of parliaments and health legislation

Worldwide social, ideological, and political changes of recent years have made it necessary to strengthen the role played by the body of law in the execution of policies aimed at reducing inequalities in health. During 1999, the Bureau continued to support the enactment of health legislation in Member States and collaborated in the search for ways to give strength to regulatory mechanisms so that health legislation can become a vehicle for attaining equity.

PASB cooperated with Venezuela in writing the chapter on health in the country's new constitution. The Bureau also collaborated in the formulation of basic standards for the sector, such as draft legislation and general health laws, in Bolivia, Honduras, Nicaragua, and Paraguay. In terms of specific aspects of health, there was an in-depth analysis of legislation on such issues as psychiatric care in the English-speaking Caribbean, as well as work on a regulatory framework applicable to non-risk pregnancy and delivery and obstetric emergencies, safe blood, emergencies and disasters, and health financing. Gender aspects of Central American legislation on pesticides also were reviewed.

The Bureau continued to provide training and disseminate information. It cooperated with the Inter-American Center for Social Security Studies (CIESS) in convening the sixth course-workshop on health legislation, which considered a legislative framework for health markets in the context of globalization. Advanced methodologies are being incorporated in the LEYES database (which currently has more than 8,000 entries on health legislation) with the assistance of the Latin American and Caribbean Center on Health Sciences Information (BIREME) and the Pan American Institute for Food Protection and Zoonoses (INPPAZ). Also, PASB published technical reports of comparative legislation research on special interest issues, and it maintained a Web site on legislation.

In regards to matters that transcend national borders, study and consideration were given to the implications of transnational health services delivery. This issue was the focus of an international meeting convened by PAHO and WHO in Washington, D.C., which drew participants from various parts of the world, including representatives of the World Trade Organization (WTO); and the United Nations Conference on Trade and Development (UNCTAD). The meeting examined the potential benefits and harm to health of inter-

national trade within the framework of the new round of negotiations on international trade taking place within the WTO, participants agreed on the importance of having a regulatory framework for international health care and of preserving access to health for national populations.

PASB continues to study the effects that the creation of shared spheres of action could have on new supranational regulatory mechanisms and on the incorporation of new players in the internationalization of health. To this end, it began to consider how support could be given to institutions that are involved, or are able to get involved, in defining a set of health norms, such as the various groups that facilitate integration and free trade agreements—the Andean Community, the Southern Common Market (MERCOSUR), the Central American Integration System, and the North American Free Trade Agreement (NAFTA). The Bureau published *Acceso a los servicios de salud en el marco del TLC* (Access to Health Services within the NAFTA Framework), which examines the laws of Canada, the United States of America, and Mexico to determine whether or not NAFTA can help to reduce inequities in access to health services that affect high-risk populations.

Scientific knowledge and population health

Information and knowledge are public assets that are essential for improving living conditions, promoting health, safeguarding the environment, and developing public policy on health. The production and distribution of information and knowledge cannot be left exclusively to market forces, which tend to generate significant inequalities in terms of access to these resources. One of the Bureau's key functions, therefore, is to generate and disseminate scientific and technical information that is necessary for health and human development. PASB continued to give high priority in 1999 to its commitment to spread a culture of information and knowledge in the Region and reduce gaps in these areas.

The program to democratize information on the right to health, known as DECIDES, seeks to respond to inequity in the dissemination and use of scientific information; it was developed as part of technical cooperation that aims at formulating and executing regional, national, and institutional research programs and policies. Using the latest information and communication technologies, DECIDES promotes the participation of social players in the produc-

tion and utilization of scientific information. The program is being carried out along the United States-Mexico border and in the MERCOSUR member countries, and it will use the Virtual Health Library's common platform.

Other research promotion activities are detailed in this paragraph. A prototype program on funding opportunities for health research was launched in Chile, Cuba, and Mexico, with a view to helping researchers find financial support for their work. The program includes courses for researchers and a supporting software model. PASB also provided cooperation in formulating institutional research policies in Brazil and Peru. In addition, a publication was prepared on the organization of scientific activity in health within the Region. Joint activities were undertaken with BIREME in connection with implementing the virtual library, and with the Regional Bioethics Program on diagnosing the situation and strengthening mechanisms for review.

PASB also promoted the development of research projects, as well as the training and exchange of investigators through four different modalities: multicenter projects, research competitions, support for thesis preparation, and fellowships or grants for researchers in public health.

Three multicenter projects were initiated in 1999: a comparative analysis by gender on diet and exercise in the Caribbean, which was coordinated by the Caribbean Food and Nutrition Institute (CFNI); a study of inequities in health access and expenditure, which was coordinated by the Bureau; and an investigation of the effect of pregnancy and breastfeeding on the nutritional status of adolescent women, which was carried out under the auspices of the Latin American Center for Perinatology and Human Development.

As a result of research competitions carried out in 1999, six projects were financed on the subject of gender vis-à-vis equity of access to health services within the sectoral reform process, and four projects were financed on the subject of quality assessment in diagnostic radiology services. In addition, financing was made available for 17 master's and doctoral theses, several of which were published. Under an agreement with Spain's Carlos III Institute, six one-year fellowships were granted to Latin American researchers for scientific training at that institution. At the end of their studies, the fellows will receive a grant to carry out a research project in their countries. In addition, financing was made available for 10 research projects on infectious diseases that involved the participation of Latin American and Caribbean laboratories in cooperation with the Latin American Network of Biological Sciences.

Two programs were launched in scientifically less developed countries. One, being undertaken in Guatemala in collaboration with that country's National Council on Science and Technology, aims at strengthening research on public health. The other, a training program for health researchers in Central



America, is being carried out under the auspices of the Central American Program on Population at the University of Costa Rica. This latter project provides support for the writing of theses on inequalities that affect the health of populations in Central America.

Within the framework of the Science and Technology Knowledge Market (MERCOCYT), the Bureau began to collaborate with the Organization of American States (OAS) in promoting the exchange of researchers among Latin American and the Caribbean countries. A working group composed of representatives from Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela was convened to evaluate doctoral programs in the Region. As a result of this initiative, PASB participated in an OAS-sponsored conference that brought together representatives of the ministries of science and technology in the Americas to discuss the generation of mechanisms for the exchange of researchers. The Bureau took on the responsibility for coming up with the exchange component.

A research methodology that uses the gender perspective for improving the quality of care was developed and applied in four Central American countries with support from Sweden. The methodology includes an examination of gender-based needs, using diabetes or tuberculosis as tracer diseases. As a result of this research, Central American government officials are now more aware that there are other gender-specific health needs besides reproductive aspects of health, and that these are created by society and warrant attention as part of health care and promotion. The results of this research were shared with health workers through an innovative system called "health workers for change." Each country has adapted the system to its own circumstances and initiated a participatory process for addressing its health service problems.

During 1999, the Virtual Health Library (www.bireme.br) evolved into a central PAHO technical cooperation strategy in the area of health sciences information. The library's first regional coordination meeting was held in December and attended by more than 100 representatives of countries in the Region. The meeting reviewed progress to date and pointed out that the virtual library strategy had gained momentum so quickly that 14 countries had already begun to use the Internet to handle local health information resources.

At the regional level, progress was made in toxicology, adolescent health, disasters, and health legislation. The publication of scientific journals in digital form, following the model of the Scientific Electronic Library Online (www.scielo.org), was initiated, starting with the national collections in Brazil and Chile and the Ibero-American collection of public health journals.

The International Advisory Committee on Bioethics was created in May 1999 and held its first meeting in Washington, D.C. The conclusions of this meeting were published in the book *Investigation en sujetos humanos: la experiencia internacional*, a book analyzing the international experience of conducting research on human subjects. PASB contributed to the development of human resources in bioethics by offering various courses in specific subject areas, as well as advanced programs of specialization in several countries. It also provided collaboration in connection with a number of scientific conferences, including the Latin American Congress of the Latin American Federation of Bioethics Institutions, held in Mexico in November 1999. In addition, it helped to strengthen undergraduate and graduate programs in several universities and initiated a program of close collaboration with the countries of the English-speaking Caribbean. It also participated in various international initiatives, including the formation of a European coalition of programs in bioethics studies and the creation of a working group, the Global Forum for Bioethics in Research, at the Fogarty International Center, United States National Institutes of Health. In Geneva it participated in discussions on revising the standards of the Council for International Organizations of Medical Sciences (CIOMS) with regard to research on human subjects. Its advisory services to the ministries of health in the Region included a mission to help enact a national law on bioethics in Colombia, and, through the PAHO/WHO Country Office in Argentina, consultations on a law on the protection of patients' rights.

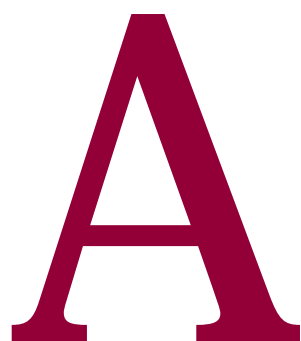


Health Promotion and Protection

Health promotion and health protection have become
indispensable to today's theory and practice of public health.







According to public health's new paradigm, health promotion and protection are the cornerstones in the efforts to affect the factors that determine health. Together with its Member States, PASB is committed to creating a new culture of health promotion and protection in which health is viewed as a social value. This requires educating people and communities, as well as public, nongovernmental, and private institutions, to individually and collectively assume responsibility for preserving and improving the health and well-being of the populations of the Americas.

During 1999, PASB's technical cooperation relied on health promotion as a means of empowering people to improve and protect their health. Consequently, the Bureau advocated policies, plans, programs, standards, and tools for health promotion and supported operations research as well as the design and strengthening of methodologies and models for the evaluation of health promotion activities. It fostered the development of healthy schools, workplaces, and municipalities; developed intersectoral work strategies; and promoted the use of social communication in health, especially through the mass media.

More and more countries in the Region have come to recognize the importance of health promotion strategies and have incorporated a variety of them in their national health plans and programs. Chile, Colombia, Cuba, El Salvador, Guatemala, Mexico, and Nicaragua, for example, are now among those that include health promotion in their health policies. As health promotion activities are carried out in the Region, communities work with the health systems and services to which they have access, and with actors in the education, labor, and the media sectors. These interactions develop and strengthen the communities' ability to keep health on the public agenda and to support local healthy community programs. Health promotion activities carried out in Central America became the catalyst for consolidating peace in that subregion.

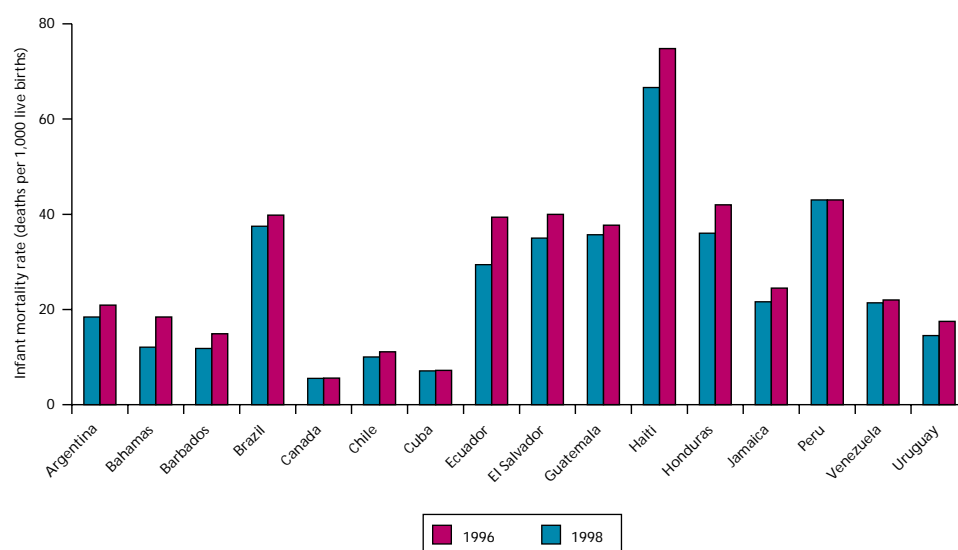
After acknowledging such principles as priorities, most countries have adopted national charters on health promotion and protection; others have recognized the importance of protecting and promoting health, especially among the poor, as a way to improve people's health and reduce their need for curative care. PASB has supported the establishment of new legal and institutional frameworks for health promotion and the strengthening of national units responsible for them.

Child health and infant mortality

The year 2000 marks the end of the decade devoted to implementing the plan of action agreed upon at the World Summit for Children (New York, 1990). By 1999, the Region as a whole had achieved most of the goals set (see Figure 1). Though the goal of an overall 10% reduction in infant mortality was achieved, high infant mortality rates persist in many countries (14 still reported rates above 40 deaths per 1,000 live births) and continue to be a priority addressed by their respective health sectors. Some countries, such as Argentina, the Bahamas, Barbados, Ecuador, El Salvador, Haiti, Honduras, and Uruguay surpassed the 10% goal. Uruguay's infant mortality rate, which stabilized at 20 deaths per 1,000 live births from 1988 to 1995, decreased to 14.5 deaths per 1,000 live births in 1999, for a 28% reduction.

With progress still to be made, PASB continued to invest both technical and financial resources in this area. Programs emphasized the introduction of national norms and guidelines for the provision of integrated care to the family unit; the promotion of breastfeeding; proper nutrition for growth and development; and improvement of related information systems.

FIGURE 1. Infant mortality rates, selected countries in the Americas, 1996 and 1998.



Source: PAHO Core Basic Indicators for the Americas, updated September 1999.

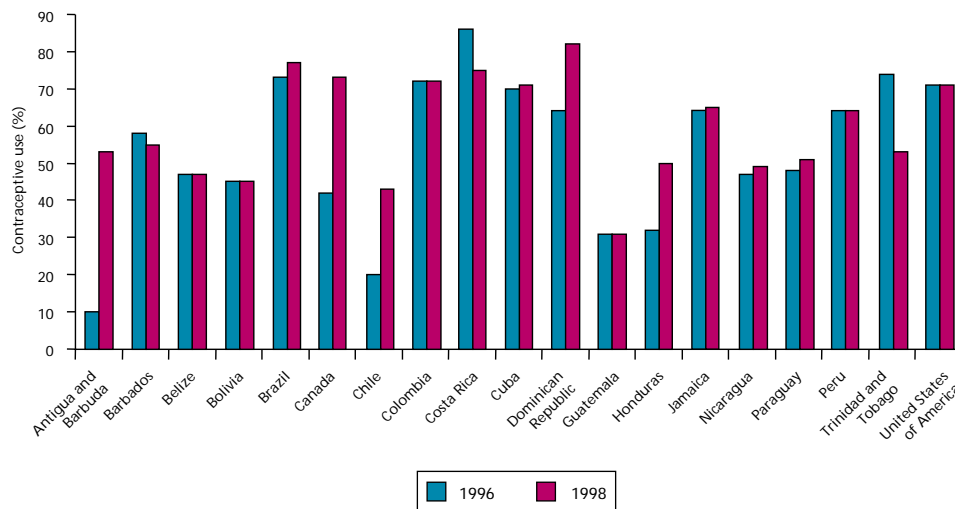
The Bureau continued its work as coordinator of the interagency committee in charge of reviewing the progress made toward World Summit for Children goals. Other participating agencies include UNICEF, UNFPA, the World Bank, IDB, FAO, OAS, and USAID. At the V Inter-Ministerial Meeting on Children and Social Policy in the Americas, to be held in Kingston, Jamaica, in October 2000, the Organization will take part in an evaluation of the results achieved with regard to those goals. Based on the evaluation's findings, PASB and the Member States will set the new agenda and targets for their work in child and adolescent health for the next decade.

Reproductive health

The steady improvement in the quality and accessibility of reproductive health services in Latin American and Caribbean countries was evidenced by increases in contraceptive prevalence rates and in the percentage of births attended by trained personnel, as well as by the decrease in mortality rates for infants and children under 5 years of age (see Figure 2).

The Bureau contributed to these improvements by developing sexual and reproductive health guidelines and tools; highlighting policies and services aimed at reducing morbidity and mortality; improving cost-effectiveness and

FIGURE 2. Prevalence of contraceptive use (all methods), selected countries in the Americas, 1996 and 1998.



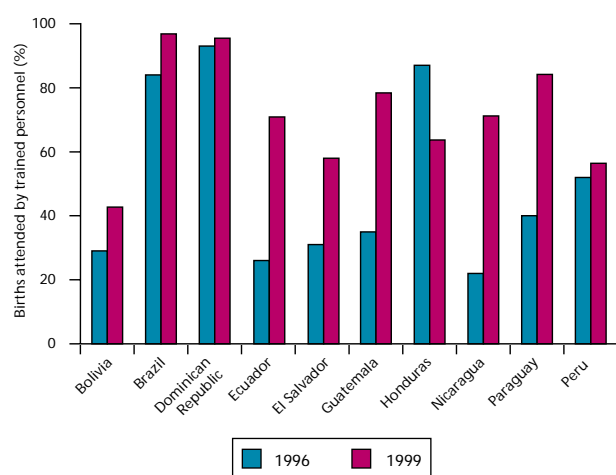
Source: PAHO Core Basic Indicators for the Americas, updated September 1999.

management of services; preventing reproductive health problems in disasters; and implementing the International Conference on Population and Development plan of action. Furthermore, in collaboration with UNFPA, PASB spearheaded an initiative to develop new curricula so that physicians, nurses, and midwives could learn new concepts and skills in sexual and reproductive health.

High maternal mortality rates persisted in some countries, which shows that health inequalities between countries still exist. All countries in the Region are now implementing national plans for reducing maternal mortality by improving essential obstetric care and epidemiologic surveillance. Nevertheless, 11 countries still had rates above 100 maternal deaths per 100,000 live births in 1999. As secretary to the Interagency Regional Committee and its task force on maternal mortality, PASB accorded high priority to this area.

The countries and the Bureau availed themselves of several strategies to achieve the regional goal of reducing 1998 maternal mortality levels by 25% by the year 2002. These included the implementation of essential obstetric care services; the creation of regional and hospital-based committees for maternal death audits; support for increased institutional deliveries; and the establishment—with the community's input—of birthing centers for low-risk deliveries. In some countries, traditional birth attendants provided services in areas without access to institutional services (see Figure 3).

FIGURE 3. Percentage of births attended by trained personnel, selected countries of the Americas, 1996 and 1999.



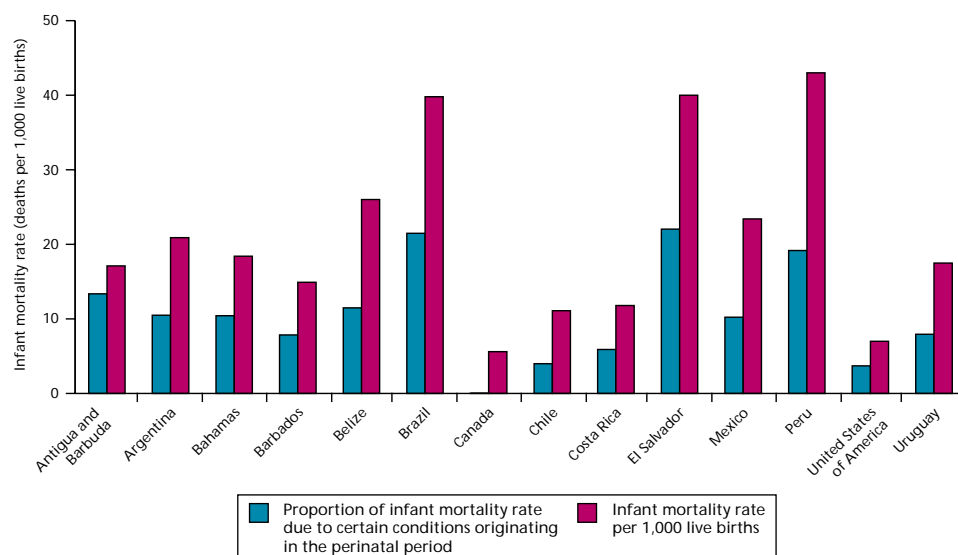
Source: PAHO Core Basic Indicators for the Americas, updated September 1999.

Using these strategies, Honduras achieved a significant decrease in its maternal mortality rate. Over the 1990–1997 period, the national rate fell from 182 to 108 deaths per 100,000 live births, for a 41% decline.

Although a 20% reduction in perinatal mortality was anticipated for the Latin American and Caribbean subregions, the quality of service and levels of programs to reduce the impact of factors associated with perinatal deaths continue to present a challenge for these countries (see Figure 4).

PASB studied legislation, client-oriented quality of care, and implementation of the expanded concept of sexual and reproductive health care in the Region, specifically considering such issues as family health, maternal care, gender, and women's rights. These studies facilitated a comparative analysis of the legal framework pertaining to sexual and reproductive health in the Region, including legal constraints that adversely affect it as well as factors that positively af-

FIGURE 4. Infant mortality rates and proportion of infant mortality due to certain conditions originating in the perinatal period, selected countries of the Americas, 1997.



Source: PAHO Core Basic Indicators for the Americas, updated September 1999.

fect it. This knowledge will allow countries to make informed decisions when choosing strategies for formulating or carrying out national reproductive health policies.

Most countries developed national reproductive health programs for women that integrated the prevention and control of sexually transmitted infections, including HIV, with family planning and cancer screening programs. Many Latin American and Caribbean countries are increasingly fostering men's participation in and use of sexual and reproductive health services.

Health and development of adolescents and young adults

The health and development of adolescents (10–19 years of age) and young adults (15–24 years of age) are key elements for the social, economic, and political progress of the countries of the Region. However,

the needs and rights of these groups seldom are considered in public policies or in health sector agendas.

Because adolescent health and development is a new field of study, many countries lack the epidemiologic information needed to inform policy planning and development that specifically deal with adolescent health. In 1999, Antigua, the Bahamas, Barbados, the British Virgin Islands, Dominica, Grenada, Guyana, Jamaica, and Saint Lucia completed national health surveys that addressed the factors influencing resiliency in adolescents. Information obtained from data analysis allowed Antigua, the Bahamas, Dominica, Grenada, and Jamaica to develop national health plans for adolescents within the framework of the Regional Plan of Action for Adolescent Health and Development, 1998–2001. The Organization helped design software to analyze the health situation of adolescents at Regional, national, and local levels.

By encouraging broad participation of youths and young adults, the Bureau's technical cooperation gives added impetus to national health plans for adolescents. In response, 26 countries have established their own programs, eight have promoted youth education policies, and many have begun to include adolescents and young adults in their public and political agendas.

PASB's technical cooperation also focuses on integrated care for young people, an approach that already has been successful in some countries. In Peru, for instance, more than 50% of the health services provide integrated sexual and reproductive health care, emphasizing the prevention of adolescent pregnancy. This approach also has been successful in Brazil, Costa Rica, and Mexico.

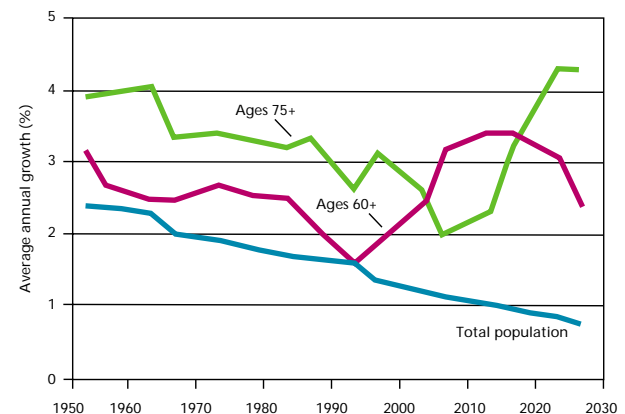
Advancing the health of older adults

For many decades, the growth rate of the older population in the Americas has been higher than that of the total population (see Figure 5). By the year 2010, the estimated growth rate of the population aged 60 years and older will be three-and-a-half times higher than that of the total population. In the Latin American and Caribbean subregions, it is expected that approximately 14% of the population—some 97 million people—will be 60 years or older by 2025. This rapid and substantial growth requires that the public health sector take immediate steps to prepare to meet new needs and increased demand for services.

"Active Aging Makes the Difference" was the theme chosen by WHO for the International Year of Older Persons (1999). In view of the unusually rapid growth of the older population, the Bureau focused its technical cooperation on assessing the health situation of the elderly in the Member States.

1. A regional multicenter study on aging, health, and well-being was successfully implemented in Buenos Aires (Argentina), Santiago (Chile), San José (Costa Rica), Montevideo (Uruguay), São Paulo (Brazil), Mexico City, Havana (Cuba), and Bridgetown (Barbados). The resulting database of approximately 18,000 interviews in eight urban centers will be available on the Internet for public use. This study has yielded the following significant findings:
 - The decline in mortality that occurred between 1950 and 1970 as a result of public health interventions and successful primary health care policies has contributed to increased longevity in the Region.
 - Most countries in Latin America will experience population aging at a faster pace and with a more sudden onset than will the developed countries.
 - Persistent poverty and unequal access to health care among the elderly require a public health response in order to prevent the escalation of ill health and disability among them in the twenty-first century.
 - Health sector reforms and the precarious situation of social security schemes will increase the unmet demands for health care and support in old age.
 - Older women, particularly widows, are the most vulnerable group and large numbers of them will continue to fall below the poverty line unless appropriate systemic remedies are put in place.
2. Based on these findings, the Organization coordinated activities to support relevant debates on public health policy and aging. The outcomes of these activities are listed below.
 - During the Caribbean Forum for Health and Aging, held in the Bahamas in 1998, the Caribbean Council on Human and Social Development adopted the Caribbean Charter on Health and Aging.

FIGURE 5. Projections of average annual percentage growth of the total population and the populations 60 years and older and 75 years and older, Region of the Americas, 1950 to 2030.



Source: United Nations. World Population Prospects: The 1996 Revision.

- Participants in the Andean Forum on Health and Aging, held in Lima in June 1999, agreed to set up a support network for multisectoral approaches to the issues of health and aging.
 - In September 2000, a Central American forum on health and aging will review the status of older persons in that subregion.
3. PASB, with funding from the Novartis Foundation and in collaboration with a multidisciplinary team of professionals, prepared an educational package of health promotion and clinical management for older persons. The Spanish version is currently undergoing testing in several primary health care settings; English and Portuguese translations will be available later. Plans and programs for older persons will focus on increasing their access to better primary health care.
 4. PAHO arranged for an interprogrammatic consultative group to meet in Puerto Rico, with the collaboration of the local Ministry of Health. The group drafted policy statements regarding ethical issues on aging, health, and intergenerational solidarity.

Improving nutrition

Nutrition is one of the most significant factors in reproductive and infant health, and proper nutrition is of paramount importance throughout the life cycle. However, its impact is greatest during the period just prior to conception and during the prenatal and perinatal periods, when it strongly influences the health of both mother and child. A healthy, properly nourished mother will deliver a baby of normal birthweight whose chances of survival are increased fifteenfold.

In 1999, social disparity and inequity in the Region continued to increase, with a large part of the population still living in poverty. A study on inequity and nutrition, which may serve as a model for other countries, was conducted in Ecuador with data from demographic and health surveys and from life conditions surveys. Its purpose was to provide the Bureau and Member States with guidelines for interventions that could decrease or control nutritional problems in various population groups. This study allowed geographic disaggregation of the information on malnutrition and an interpretation of its causes based on a set of social variables used to measure inequities. It is a valuable tool that can provide the information needed by the countries to create policies and programs to reduce malnutrition.



To foster human development and prevent disease throughout the life cycle, PASB gives priority to food and nutrition and promotes the assessment of growth and development at different ages. To prevent malnutrition, the Bureau supports micronutrient fortification of foods; exclusive breastfeeding during the first 4 to 6 months of life, and continued breastfeeding and supplementary feeding up to 2 years of age; dietary guidelines for different age groups in the population; and food security.

The Caribbean subregion continued to promote programs aimed at preventing obesity and reducing such nutritional deficiency conditions as anemia. PASB completed a multicountry study, which included Antigua, Dominica, Guyana, Jamaica, and Saint Vincent and the Grenadines, that showed that between 34.4% and 49.4% of children 1–4 years old were anemic. The prevalence of anemia among school-aged children ranged from 23.5% to 56.7%. Despite ongoing iron supplementation, the prevalence of anemia among pregnant women fluctuated between 35.6% and 52.0%.

Vitamin A

Canada has supported a special project focused on eliminating vitamin A deficiency by combining vitamin A supplementation with Expanded Program on Immunization (EPI) strategies. The project includes vitamin A supplementation for children under 2 years of age and for postpartum women, and includes monitoring, surveillance, and evaluation components. The project has accelerated regional efforts to eradicate vitamin A deficiency through a concerted effort to link vitamin A supplementation to the highly successful EPI program.

In 1999, Brazil, Bolivia, Colombia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Peru still had groups with moderate and severe vitamin A deficiency. Six had initiated vitamin A fortification of sugar. In all of the countries with severe or moderate deficiency, vitamin A capsules were distributed to children under 3 years of age. The Bureau and the Micronutrient Initiative started supplementation programs in Bolivia, Brazil, the Dominican Republic, Ecuador, Nicaragua, and Peru to provide vitamin A to postpartum women and children under 2 years old when they receive vaccinations and other maternal and child health services. This program is helping to reduce child morbidity and mortality, as well as to build up the health services' institutional capacity by reinforcing coordination activities between vaccination and nutrition programs.

In May 2000, Brazil completed a two-year vitamin A supplementation project. In mid-1998, over 19 million vitamin A capsules were donated to Brazil for semiannual supplementation for all children between 6 months and 5 years old and annual supplementation for all mothers up to 6 weeks postpartum in the nine northeastern states and part of Minas Gerais. Each state independently determined the combination of strategies it used to carry out the program, including immunization and maternal and child health contacts. In 1998, coverage for children from 6 to 11 months of age was 62.6% and single-dose coverage among children from 1 to 5 years was 39.3%. Data on maternal supplementation coverage for that period are not yet available.

In addition, the Bureau has been promoting vitamin A fortification of sugar as a more sustainable and less expensive intervention. Several countries in Central America are presently fortifying sugar destined for household use.

Iodine

Ninety-seven percent of the Region's population had access to iodized salt. In November 1999, PAHO, UNICEF, the International Council for Control of Iodine Deficiency Disorders (ICCIDD), the Micronutrient Initiative, the Kiwanis, and the Program Against Micronutrient Malnutrition organized the Salt 2000 Meeting. On that occasion, the governments and salt industries of 24 countries reaffirmed their commitment to program effectively to control iodine deficiency disorders and to ensure that the whole Region has regular and sustainable access to salt containing the recommended levels of iodine. To date, PAHO, UNICEF, and ICCIDD have certified Bolivia, Colombia, Ecuador, Peru, and Venezuela as free of iodine deficiency disorders.

Iron

Deficiency problems and anemia continued to affect 40% of pregnant women and 50% of children under 1 year of age throughout the Region. In coordination with other agencies, the Bureau promoted iron fortification of foods, and 22 countries began to add iron to wheat flour. It also hosted an international meeting to review operational problems in achieving the expected outcomes.

Folates

Given that food fortification is considered a safe way to guarantee the population's access to the recommended levels of folic acid, Bolivia, Canada, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and the United States of America decided to fortify their wheat flour. The Bureau, with the participation of the U.S. Centers for Disease Control and Prevention, the March of Dimes, and the University of Florida, promoted a study to determine the impact of folic acid-fortified wheat flour in Chile, which provides Chileans with 360 micrograms daily of this essential micronutrient. Study results will provide an epidemiologic basis for the promotion of such policies in other parts of the Region. This measure will help to decrease the number of newborns with neural tube defects and to prevent maternal anemia caused by folate deficiency.

Prevention and reduction of tobacco use

PASB is firmly committed to reduce tobacco use. Its efforts in this regard, which involve both preventing the onset of smoking and promoting smoking cessation, made significant headway in 1999.

PASB has set up a surveillance system to monitor tobacco use and tobacco-related mortality in the Region. Collected data can be compared over time and across countries, and the system will provide an ongoing mechanism for obtaining up-to-date information that can be used to set regional priorities for intervention. So far, the system includes only data for Latin America and North America, but data from the Caribbean will be incorporated in 2000.

Survey data for 16 countries show little change in tobacco use over the past decade. Smoking rates in the Southern Cone are of particular concern: they stand as high as 40% in Argentina and 41% in Chile among people aged 12 and older. Canada and the United States were the only countries that experienced declines in use during the 1990s.

Per capita use as measured by manufacturers' sales data fared better. Several countries that together comprise most of the Region's population showed important declines between the early 1980s and the early 1990s. This information should be used with caution, however; although sales provide a useful marker in the absence of survey data, they do not always mirror use.

To complement other surveillance efforts, the Bureau is facilitating implementation of the WHO, CDC, and UNICEF-sponsored Global Youth Tobacco Survey, a school-based survey of 13–15 year olds that measures behavior, knowledge, and attitudes regarding tobacco. The survey was conducted in Barbados, Costa Rica, and Venezuela in 1998–1999, and approximately 10 countries in Latin America and the Caribbean are planning to follow suit in 2000. The Global Youth Tobacco Survey has been carried out in approximately 15 countries worldwide.

Several countries in the Region have participated in the development of the Framework Convention on Tobacco Control, an international treaty being developed by WHO Member States. Twenty countries attended the first meeting of the working group on the Framework Convention, which was held in October 1999 to develop technical options for the treaty. Negotiations on the Convention begin in October 2000, and several countries, including Brazil, Canada, Mexico, and the United States, already have forged ahead in preparing for the Convention by calling together national intersectoral commissions to address relevant issues. Much work still needs to be made to improve tobacco control policies and programs throughout the Region. It is to be expected that the development of the Framework Convention on Tobacco Control, along with renewed efforts by PASB, will stimulate prompt action in these areas.

In 1999, PASB developed a strategic plan for an upcoming tobacco program. The plan includes mobilizing governments and nongovernmental organizations to participate in the Framework Convention; further strengthening surveillance in tobacco use, tobacco-related mortality and morbidity, and legislative developments; fostering evidence-based action; increasing specialized technical cooperation; and improving the dissemination of information. The Bureau also provided training in program and policy management and media advocacy for ministries of health and focal points in PAHO/WHO Country Offices, and convened a meeting of parliamentarians from around the Region to discuss tobacco and its implications on public health. The meeting also will lead to prevention and control actions at the country level.

Brazil continued to train state and municipal health personnel in tobacco control and enacted legislation to improve health warnings on cigarette packages, restrict smoking on public transportation, and establish institutional mechanisms to monitor and control tobacco products.

Costa Rica and Venezuela set up “life skills” training in schools to educate children on how to resist pressures to begin smoking and to improve access to smoking cessation clinics. Mexico also has introduced substance abuse education in schools and has disseminated guidelines for use in smoking cessation clinics.



Mental health

In response to the 1990 Declaration of Caracas regarding the rights of the mentally ill, PASB has been providing advice regarding policy changes toward psychiatric reform, including improvements in community mental health care. The Bureau also has provided technical cooperation regarding the framing and execution of national mental health plans. These plans include the formulation and implementation of psychiatric reforms designed to destigmatize mental illness and protect the rights of the mentally ill; prevent and treat psychiatric and neurological disorders, with specific initiatives on depression, epilepsy, and chronic psychosis; and develop programs that decrease the psychosocial problems associated with natural and manmade disasters. This work has been possible in great part through the cooperation of consultants from Italy, Spain, and other European countries as well as from the Americas.

PAHO's Directing Council has encouraged Member States to develop programs for the control of depression in the Americas. To this end, the Bureau developed an initiative to control and reduce the prevalence of disabilities related to depression through interventions carried out by primary health care professionals and community members. As part of this initiative, training programs for detecting and treating depressive disorders were conducted for doctors and nurses at the primary care level in 1999. The training for physicians was conducted in Buenos Aires, Argentina; Campinas, Brazil; Concepción and Valparaíso, Chile; Medellín, Colombia; and San José, Costa Rica. Pre- and post-training questionnaires assessed the effects of the training program on the knowledge, attitudes, and practices of physicians. There was a modest but statistically significant increase in knowledge following the training (Table 1). The fact that physicians made fewer referrals to mental health specialties after they had received the training indicated that they were more confident in treating patients with depression. There was no evidence of any increase in the detection of depression or of improvements in the psychopharmacological management of patients, however. Some modest changes were noted a month after the training, but it remained unclear whether that effect would be sustained over time.

The training for nurses was conducted in Panama City, Panama. According to the study design, the sample was divided into an experimental group (to be trained) and a control group (not to be trained). Training resulted in a dramatic improvement both in overall knowledge and attitudes (Table 2). A multivariate analysis showed that nurses in the experimental group were

TABLE 1. Physicians' attitudes about depression before and after training, mean and standard deviations, and paired *t*-test results (*n*=98).

| Item | Before training | After training | <i>t</i> -test | <i>df</i> | <i>p</i> |
|---|-----------------|----------------|----------------|-----------|----------|
| It is easy to differentiate between a patient who is sad and one who is depressed | 4.6 ± 2.4 | 5.8 ± 2.5 | -3.61 | 82 | 0.0001 |
| I am comfortable addressing the problems of patients with depression | 4.6 ± 2.7 | 5.8 ± 2.3 | -4.10 | 82 | 0.0001 |
| It is gratifying to invest time in treating depressed patients | 6.1 ± 2.5 | 6.7 ± 2.2 | -2.16 | 82 | 0.033 |
| Antidepressants produce satisfactory results in treating depressed patients | 6.9 ± 2.0 | 7.8 ± 1.5 | -3.85 | 82 | 0.0001 |
| It is better for a depressed patient who needs anti-depressants to be treated by a psychiatrist | 3.9 ± 3.0 | 2.9 ± 2.5 | 3.27 | 82 | 0.002 |

df = degrees of freedom; *p* = level of significance.

three times more likely to detect depression in patients than before the training, after controlling for the patient's age, sex, level of education, and any other psychiatric or somatic disorders present.

Both studies point to the effectiveness of training programs in improving the knowledge, attitudes, and practices of primary care nurses and physicians.

Domestic violence

PAHO considers the prevention of domestic violence as a priority and is committed to preventing such violence through anticipatory attention and the promotion of healthy lifestyles.

Brazil has launched a social communication campaign against family violence, which is under the coordination of the Interagency Committee on Women and Gender of the United Nations Agencies and in which the Secretariat of Human Rights of the Ministry of Justice and several nongovernmental organizations participate. Almost 300 institutions have been included in the community agreement proposed as a framework for that initiative.

In Colombia, Guatemala, El Salvador, and Nicaragua, governments have validated health promotion in their health sector policies as an instrument for the consolidation of peace. Colombia launched a national policy of peaceful

TABLE 2. Changes in the knowledge and attitudes of nurses on depression following training ($n=42$).

| Variable | Experimental group | Control group | <i>t</i> -test | <i>df</i> | <i>p</i> |
|-----------------------------------|--------------------|---------------|----------------|-----------|----------|
| Change in overall knowledge score | 3.21 (1.72) | .000 (2.17) | 4.54 | 30 | .000 |
| Change in overall attitude score | .771 (1.55) | -.581 (1.66) | 2.73 | 40 | .009 |

df = degrees of freedom; *p* = level of significance.

coexistence, called “Make Peace;” more than 1,000 schools have joined the initiative as healthy schools for peace.

In Peru, domestic violence is a matter of political priority at the highest level, and the year 2000 has been declared the “Year Against Family Violence.” The Ministries of Health, of Women’s Promotion, and of Human Development and Education are carrying out activities in this regard in 14 of the country’s 24 departments. Community-based strategies have been set up for mutual help and care as well as for the prevention of violence against women and children.

In Nicaragua, a family violence prevention program in the municipality of Estelí drew the participation of various government and civil-society social actors. This experience evolved into a network that covered localities with local health systems (SILAIS) in Managua, Masaya, Matagalpa, the Atlántico Sur autonomous region, León, Chinandega, Nueva Segovia, and Madriz (see Figure 6). Special training was provided for 1,568 persons and guidelines for the care and treatment of victims were circulated. Proposals also were developed for collecting data at the local level and for issuing new training modules.

Within the SILAIS, men were given the opportunity to participate in the project dealing with family violence. The project’s segment designed to reflect on masculinity and violence opened the door for working against violence with groups of men, both within the health sector and in community groups of local health systems. In addition, workshops were offered in Estelí to allow male health workers the opportunity to reflect on masculinity and violence.

Also in Nicaragua, a study on gender and quality of health services carried out in León found substantive gender bias favoring men when comparing the health care provided to male to that given to female patients with type II diabetes mellitus. The results of this study served as a basis for preparing five work modules directed at health personnel to make them aware of existing biases and encourage them to overcome gender barriers that influence treatment of people with chronic and degenerative diseases.



FIGURE 6. Scope of the family violence project in Nicaragua.



Healthy municipalities, communities, and workplaces and health-promoting schools

The best known and most frequently applied health promotion strategy has been dubbed “the setting” approach. It sets out to create and sustain healthy and supportive physical and psychosocial environments that enable persons to pursue healthy lifestyles wherever they live, study, work, or play. The healthy municipalities and communities movement in the Americas is based on this approach’s conceptual and operative framework. In 1999, PAHO introduced the concept of healthy municipalities and communities and the health-promoting schools initiative into the action plans and policies of the ministries of health and of education of Latin American and Caribbean countries. The Organization also developed the conceptual and operational framework for a workplace health promotion initiative.

Twenty countries fostered the establishment of health-promoting schools by engaging in one or more of the following efforts: updating policies and

strengthening the capacity of joint health and education commissions; updating curricula and incorporating health promotion contents in the context of educational reforms; improving the water and sanitation infrastructure; offering life skills education; training teachers in conflict resolution and violence prevention; adapting instruments to youth health-risk behavior surveillance; and carrying out needs assessment and health status diagnoses with the participation of the educational community in many countries. These advances were reported at the II Meeting of the Health-Promoting Schools Network held in Mexico City and also published in the June 1999 issue of the network's newsletter.

The "Safe and Healthy Sister Cities" initiative established in the United States-Mexico border has improved interagency coordination and the cooperative work among sectors, strengthened networks, and mobilized resources to improve environmental conditions and maintain friendly relations between the two nations.

The concepts, models, and mechanisms that emerged from experiences with healthy municipalities and communities and with health-promoting schools were disseminated throughout the Region's countries. Various countries formulated pertinent public policies, as well as projects involving community participation and intersectoral collaboration. Networks have continued to grow and to contribute to the exchange of experiences and collaboration among communities and countries, and 10 countries are presently involved in evaluating their healthy municipalities and health-promoting schools experiences. Efforts to establish health promotion policies and plans of action have opened up new opportunities for new actors in civil society to participate in this process, thereby improving the health and quality of life in many communities. The Fifth World Conference on Health Promotion, to take place in June 2000 in Mexico, will provide a forum in which to share the health promotion understanding, methodology, and experiences with other regions of the world, as well as to contribute to a body of knowledge on the best health promotion practices and to reflect on the lessons learned during the past decade.

Health communication

Social communication and education are crucial health promotion tools. Social communicators and journalists have shown that health is the greatest asset a human being can acquire during a lifetime. In that sense, health communication has been consolidated in the countries as a strategic in-

strument for the technical cooperation with ministries of health, nongovernmental organizations, and the PAHO/WHO Country Offices to assist their projects and programs designed to promote healthy lifestyles and changes, thereby preventing diseases and achieving better social coordination.

The Organization has supported a broad range of activities by introducing publications that provide reader-friendly guidelines for planning, implementing, and evaluating health communication programs in the Region. As related strategies, it has advanced training of personnel in social and health communications and fostered close relationships with media communicators on health issues. Some governments have encouraged postgraduate training in health and communications in coordination with local universities or have advocated the inclusion of these subjects in the curricula of schools of medicine, midwifery, nursing, and social communications.

Media awards for excellence in health journalism were presented throughout the Region in 1999. Several countries further participated in this endeavor after establishing national coordinating committees, and the quality of winning entries was generally high. UNICEF's Caribbean Area Office, in coordination with PAHO, sponsored a prize for work on children's rights.

In the year under review, program time dedicated to health topics in the national mass media improved in quality and frequency. The Organization collaborated as an unceasing advocate for health issues, and it also organized training opportunities for members of the Pan American Association of Journalists and Communicators in Health.

Environmental Protection and Development

The environment is so intimately woven into our everyday
lives and activities that the nature and source of the health
risks it can pose span across a vast range.



The development and protection of a healthy environment provides a very broad scope of action for PASB technical cooperation with the countries of the Americas. In 1999, the Bureau assigned priority status to attaining the objectives and targets outlined in Agenda 21, in the action plans of the summits of chiefs of state from the Region, and in the guidelines emanating from the Action Plan of the Pan American Conference on Health and the Environment in Sustainable Human Development. This chapter describes the main national and regional technical cooperation activities in which PASB took part during the year.

Environmental primary care strategy

With the countries' endorsement, the Bureau formulated a regional proposal that frames the environmental primary care strategy within the goal of health for all and defines its objectives, principles, and features, as well as the instruments and lines of action necessary for its implementation. The proposal, which was drafted in Spanish, English, and Portuguese for distribution in all the countries, has been presented for discussion and dissemination at various national and international forums, conferences, and meetings, including the Subregional Meeting for Central America on Environmental Primary Care (Costa Rica), the Andean Subregional Meeting on Environmental Primary Care (Colombia), the Regional Meeting on Environmental Primary Care held in Lima in conjunction with the International Congress of the Inter-American Sanitary and Environmental Engineering Association, the VII International Conference on Primary Health Care (Cuba), and the First Congress on Environmental Primary Care: A Strategy for the New Millennium in Central America, the Caribbean, Mexico, Argentina, and Brazil.

In 1999, the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) and the PAHO/WHO Country Office in Peru focused on promoting environmental primary care as a strategy for fostering healthy *municipios* and communities. In this connection, a series of pilot projects aimed at building local environmental-management capacity were launched in Peru, including along the country's border with Ecuador. Ultimately, the communities thus strengthened will be able to recognize and control envi-

Argentina's Ecoclubs and Their International Momentum

Back in 1992, a group of young people from Argentina's province of Santa Fe came together in an innovative association, linking their activities with other local efforts to improve the environment, health, and quality of life in their communities. By mid-1995, the association was not only firmly established, but had extended rapidly across the country through a network of provincial boards.

With support from PASB, the association organized its first national meeting in August 1998 in the city of Rosario, and it was at that meeting that the National Organization of Ecoclubs, known as ONE, was created. In the two years since then, ONE has grown rapidly, and today there are some 90 active ecoclubs in operation around the country, with a combined membership of more than 2,800 children and young people.

PAHO and Argentina's Ministry of Health are following this initiative closely and lending it their support, especially in terms of training. Listening to ecoclub presentations on waste recycling, disease prevention, water protection, anti-smoking efforts, or the dangers of overexposure to the sun, it is easy to realize how much these clubs can do to improve the quality of life in their communities and preserve the global environment.

PASB has lent its support to ecoclubs and their expansion throughout the Hemisphere, and similar organizations have already emerged in Brazil, Chile, Costa Rica, El Salvador, Nicaragua, Panama, Peru, and Uruguay. A key factor in this growth came when ONE convened the First International Ecoclub School, on 12–17 July 1999 in the city of Firmat (Santa Fe province), with support from the municipality, Fundación del Sur, PASB, and the Ministry of Health of Argentina. The school brought together more than 60 young people from Argentina, Bolivia, Brazil, Chile, Costa Rica, El Salvador, Nicaragua, Panama, Peru, and Uruguay.

At the gathering, participants learned about Argentina's experiences and exchanged ideas on the international movement and philosophy of ecoclubs, their organization, cooperative style of work, and their relationship with community organizations and the media. Practical business issues also were examined in some detail, including conflict resolution and the role of leaders vis-à-vis environmental concerns, since the core objective of the ecoclubs is to serve as a training ground for future Latin American leaders in environmental protection.

One of the key outcomes of the meeting was the establishment of the International Network of Ecoclubs. Through the network, young environmentalists from the 10 founding countries are able to stay in contact over the Internet and thus share lessons learned and pursue a common philosophy, while fostering the start-up of new chapters and strengthening existing ones. The network is coordinated by ONE, which has pledged to publish a bimonthly newsletter for network participants. The first two issues, which went out on schedule, disseminated information provided by participating ecoclubs.

The idea of the network was embodied in the Firmat Declaration ("For a Healthier World"), whereby the delegations agreed to work towards changing

mentalities and behaviors in order to “build a better world and healthy communities of all and for all.” The year 1999 also saw a special recognition of ecoclubs. The Fundación ISALUD of Argentina awarded them its 1999 Environmental Health Prize in the institutional category. This award was established in 1992 to acknowledge exemplary individuals and institutions whose work has an impact on the community and to recognize the “unsung merits and achievements of efficient teamwork efforts.”

ronmental factors harmful to health. Strategic plans to improve local health conditions are currently being implemented in Tacna, Suyo, and Aguas Verdes. As a first step, household water purification systems have been installed in rural and periurban areas in Peru, with support from the Ministry of Health, local governments, and community organizations.

On the basis of this experience, the Ministry has provided training to its regional offices to enable them to promote environmental primary care throughout the country as part of their regular duties. Instructional and other materials being prepared will be made available to every country in the Region that is interested or engaged in similar projects.

With an eye to fostering environmental primary care activities, PAHO has begun to compile information on experiences in the Region. *Municipios* that pursue this strategy have been linked together in a network as a means of promoting environmental primary care at the local government level. The work done by intermediary agencies—including ecoclubs, community environmental boards, and universities—also has been recognized and strengthened.

The Bureau has produced videos in Spanish, English, and Portuguese that talk about ecoclubs and explain the environmental primary care strategy. This information also has been disseminated through journals and newsletters under such initiatives as the Environment and Health in the Central American Isthmus program (MASICA), *El mundo que creamos*, and the CEPIS Web site.

Community mobilization and intersectoral coordination

The health and environmental protection agencies of the Region's countries worked throughout 1999 to strengthen their ties with other sectors and disciplines, seeking to include civil society organizations in

their activities. At the Special Meeting of the Health Sector of Central America (RESSCA), the ministers of health and environmental affairs approved the plans for the seven Central American countries as well as the Central American Plan for Health and Environment in Sustainable Human Development.

In 1999, RESSCA welcomed a new member—the Dominican Republic—thus bringing the energy of yet another nation to Central America's efforts to improve environmental health. The Central American health and environmental protection agencies analyzed and discussed strategies to formalize the countries' plans in this area. In the wake of the recent reorganization of the Central American Integration System, the agencies responsible for social and environmental development undertook a detailed study of the Central American Plan.

Strengthening health ministries and local resources

By supporting programs to strengthen environmental health agencies, PAHO helped to build the leadership and advisory capabilities of the Region's health ministries. Such programs are currently under way in Antigua and Barbuda, Brazil, Colombia, Costa Rica, the Dominican Republic, El Salvador, Mexico, Paraguay, Puerto Rico, and Saint Lucia, among others. The Bureau also worked closely with Paraguay in the establishment of an Environmental Health Directorate within that country's Ministry of Health.

Pursuant to the recommendations made at the First Regional Meeting for the Institutional Development of Environmental Health Directorates, held in 1998 in Puerto Rico, a follow-up meeting was organized for the Spanish-speaking countries and held in Mexico on 30 August–3 September 1999. At the meeting, representatives of 20 countries examined lines of action for cross-sectoral coordination, decentralization, social participation, more robust information systems, and the monitoring of international agreements. As a result of the meeting, agreements and commitments were formalized at the national, subregional, and regional levels, as was PASB's involvement in this area. The current CEPIS Web site (<http://www.cepis.ops-oms.org/>) contains further information on these experiences and documents, as well as profiles of the environmental health agencies of the Region's countries.

Updating of environmental standards and regulations

Eliminating lead from gasoline

PAHO has been actively tracking progress towards the goal of eliminating the use of lead in gasoline, as set by the First Summit of the Americas in Miami in 1994. Thanks to the efforts of various institutions, more and more countries have stopped using lead in their gasoline. In 1995, the use of leaded gasoline was illegal in only six countries; by 1996, that number had doubled; by the end of the following year, 14 countries had banned the use of leaded gasoline; and in 1999, the total stood at 19. Virtually every country has specific plans for reaching this goal.

Enhancing environmental health surveillance systems

Throughout 1999 PASB worked with the Region's countries to implement projects for epidemiological surveillance of pesticide poisoning. During the year, the magnitude of this problem became better understood, personnel were trained in surveillance system management, better medical treatment was made available for cases of poisoning, and the attention of national authorities was drawn to existing legislation and inspection as strategies to promote and protect public health.

As a result of the PLAGSALUD project, all the countries of the Central American isthmus have included epidemiological surveillance and mandatory reporting of pesticide poisoning in their national surveillance systems. Furthermore, the establishment of local interagency committees on pesticides has made it possible to take concrete action to control foci and risk factors.

One of the major accomplishments of the aforementioned project is that Costa Rica's national epidemiological surveillance system now includes a pesticide component. Training also was provided to 950 employees of agencies that are involved in pesticide surveillance and to 11,000 members of civil society, with regard to the impact of pesticide use on health and the environment,



less hazardous use of these substances, and other alternatives. Emphasis was placed on circulating documents and other information on pesticides among involved agencies and the media in an effort to raise the awareness of different population groups regarding the problems surrounding pesticide use.

With technical cooperation from PASB, several countries established or enhanced their environmental health surveillance systems with a view to controlling air and water pollution and protecting other natural resources. Considerable funding was invested in the launching of innovative surveillance projects, such as the project to restructure the national health surveillance system in Brazil.

Eliminating workplace risks and hazardous procedures

In 1999, technical cooperation from the Bureau enabled the countries to take action against the broad range of factors that can harm workers' health in the informal and formal labor sectors.

The Regional Plan for Workers' Health

At the 41st Meeting of the Directing Council of PAHO, which convened in Puerto Rico on 27 September–1 October 1999, Member States adopted the Regional Plan on Workers' Health (Resolution CD41.R13) as a frame of reference for technical cooperation between PAHO and the countries, and among the countries themselves, with an eye to preventing occupational accidents and illnesses and promoting and protecting workers' health.

The Regional Plan represents a major step forward in terms of strengthening institutional and technical cooperation with the countries, to the extent that it provides the necessary strategies, programs, and mechanisms to respond to the complex set of workers' health problems. In the Region of the Americas, the core problems are linked to the existence of yawning social, economic, and health inequities; excessive fragmentation of line units and agencies; and the coverage gap that exists in the informal labor market, especially among such underprotected, vulnerable groups as children, indigenous women, and the elderly.

The Plan provides a frame of reference for the countries and agencies involved in external cooperation to work within a joint approach and coordi-



nate their actions, thereby ensuring that optimal use is made of the resources available for the benefit of workers' health.

Several countries—including Brazil, the Dominican Republic, Chile, and the countries of the Andean subregion and the Caribbean Community—have already adjusted their national policies and plans to reflect the four directives of the Regional Plan, which are:

- promote healthy work processes and environments;
- improve the monitoring and control of occupational hazards;
- strengthen policies and legislation to protect workers' health; and
- enhance the access, coverage, and quality of comprehensive health care for the entire working population.

To cite just one example, on 15 September 1999, Guyana passed the Occupational Safety and Health Act, the first of its kind in the Caribbean. The legislation, which underscores a bipartite system of responsibility, was proposed after consultation with numerous experts and is consistent with national policies and the Health and Safety Action Plan.

Implementation of the Regional Plan is receiving excellent scientific and technical support from 15 PAHO/WHO Collaborating Centers. The areas of action focus on applied research, human resources training, and raising the awareness of decision-makers as well as the general public about workers' health. Studies on the socioeconomic impact of workers' health issues are also slated.

Updating workers' health legislation and improving the work environment

By means of its technical cooperation programs, PASB has helped the countries to implement preventive measures and design systems for the analysis and dissemination of information on workers' health. Accordingly, surveillance programs aimed at preventing or controlling occupational risks continue to be a priority.

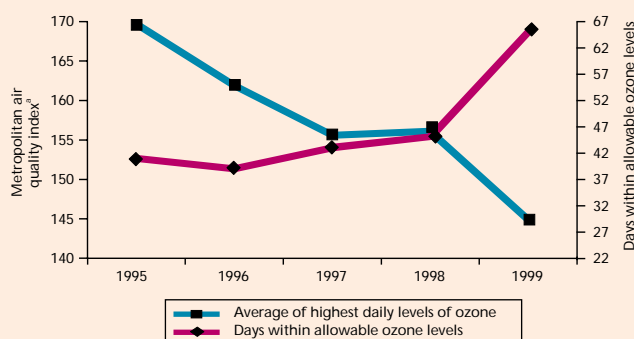
Automated information systems for occupational health

In 1999, Venezuela developed and implemented the System of Occupational Health Information for the Monitoring and Detection of Occupational Risks

Mexico City's Metropolitan Area Reduces Air Pollution

In 1999, air pollution in the Mexico City metropolitan area registered its lowest levels in the past several years. As Figure 1 shows, out of the last five years, 1999 had the most "clean" days, with an average ozone level of 144.9, according to the city's air quality index. This improvement also was due to a drop in the level of suspended particles smaller than 10 microns, which remained below the benchmark level in all but 20 days of the year, thus yielding a significant reduction in air pollution, as can be seen in Figure 2.

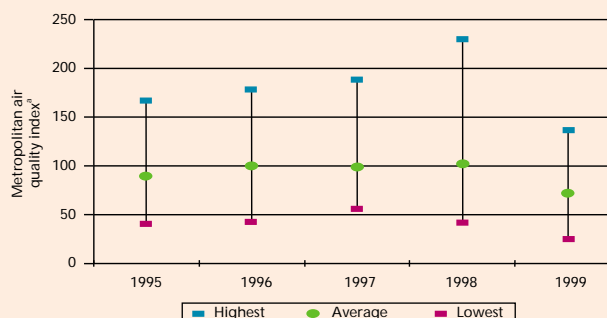
FIGURE 1. Ozone pollution levels and compliance with ozone-level regulations in metropolitan Mexico City, 1995 to 1999.



^a Metropolitan air quality index: 0–100, conditions favorable for all types of activities; 101–200, increase in minor problems among sensitive groups; 201–300, increased problems and inability to engage in outdoor activities among persons with respiratory or cardiovascular conditions, and appearance of minor problems among the general population; 301–500, appearance among general population of varied symptoms and inability to engage in outdoor activities.

Source: Gobierno del Distrito Federal. 1999—El mejor año ambiental del decenio. Informe del Secretario de Medio Ambiente. México, D.F.: Gobierno del Distrito Federal, 2000.

FIGURE 2. Reduction in air pollution from suspended particles smaller than 10 microns in metropolitan Mexico City, 1995 to 1999.

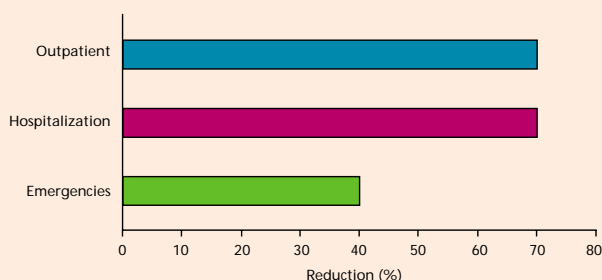


^a See Figure 1 footnote.

The morbidity patterns associated with air pollution also showed improvements in 1999. Eye and respiratory tract ailments were less serious, and there was less demand for medical services overall (both in- and out-patient), as can be seen in Figures 3 and 4.

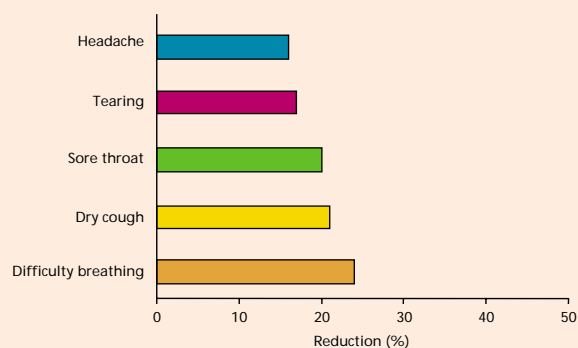
PAHO is working with the Government of the Federal District and the National Center for Environmental Health of the United States Centers for Disease Control and Prevention to design and develop air-quality projects—with funding from the World Bank and the International Development Research Centre—as part of the preparatory work to draft a ten-year environmental protection plan for the period 2001–2010.

FIGURE 3. Decrease in demand for medical services for ailments associated with air pollution in metropolitan Mexico City as compared with previous year, 1999.



Source: Gobierno del Distrito Federal. 1999—El mejor año ambiental del decenio. Informe del Secretario de Medio Ambiente. México, D.F.: Gobierno del Distrito Federal, 2000.

FIGURE 4. Decrease in symptoms of ailments associated with air pollution in metropolitan Mexico City as compared with previous year, 1999.



Source: Gobierno del Distrito Federal. 1999—El mejor año ambiental del decenio. Informe del Secretario de Medio Ambiente. México, D.F.: Gobierno del Distrito Federal, 2000.

(SUAVIDERO) in the industrial sector. The system, which covers 12 metal-working firms, provides input for inspections of the working conditions of 9,480 workers and, as appropriate, for the establishment of programs to control noise and dust levels as well as ergonomic risks.

In Chile, the Ministry of Health has put in place—with support from the PAHO/WHO Country Office—an automated occupational-health information system, which operates along the same principles as SUAVIDERO by monitoring occupational risks and conducting inspections at the national level. At the First Regional Meeting on Sentinel Events in Occupational Health, held in Washington, D.C., in May 1999, speakers described these two experiences, and similar projects were subsequently launched in Colombia and Peru.

As a way to build Peru's institutional capacity in the area of occupational health and ergonomics, the Bureau served as intermediary to secure financing from the Dutch labor organization *Federatie Nederlandse Vakbeweging* for a project to identify practical ways of eliminating health risks in the agricultural, construction, mining, and informal sectors. The project is expected to produce a methodology for gathering and compiling information that will be fed into a database of practical solutions to health and safety problems in various work environments. A parallel objective is that of increasing workers' prospects for organization, negotiation capacity, and dialogue with management and government. The database would be accessible throughout the Region by means of PASB's electronic network. In addition, a core curriculum for professional-level occupational health training was devised with collaboration from various academic institutions, PAHO/WHO Collaborating Centers, and representatives of the business and labor sectors.

In Guyana, the Department of Extramural Studies of the University of Guyana is preparing a one-year program to provide certification in workers' health and safety. PASB has also been cosponsoring a two-year degree program in occupational health and safety through the university's Institute of Distance and Continuing Education.



Electronic network on workers' health

Tapping new communication technologies to optimize the dissemination of information, in 1999 PAHO created an Internet-based network on workers' health issues. More than 400 active subscribers in over 30 countries tap into the network's discussion list; the network also offers links with North America, Europe, and Australia. One of the site's pages systematically gathers national and regional information on workers' health. The products and services offered by

the network include access to a virtual library and a CD-ROM containing information for preparing distance education courses. This undertaking has received support from CEPIS, Duke University (United States), the Canadian Technical Cooperation, and the PAHO/WHO Country Office in Peru. An evaluation conducted six months after start-up concluded that the network was not only cost-effective but a success both qualitatively and quantitatively.

Health promotion for workers

Promoting healthy workplaces means focusing on the positive aspects of social relationships in the workplace and on the personal and collective development of workers, while strengthening their organizational capacity to act individually and together to enhance their physical, economic, and social work environment. PASB has signed agreements with Brazil's national industrial federation (Confederação Nacional da Indústria) and with the labor ministries of the Central American countries to implement such a promotion strategy, and several projects already have been formulated. PASB's Project Review Group has already examined a framework project incorporating the above-mentioned experiences. WHO plans to extrapolate this experience to its other regions. Similarly, the Global Network of Healthy Businesses is collaborating with the Bureau in order to incorporate this hemisphere's experiences in the network. Activities also are under way with the International Labor Organization.

Comprehensive health care for workers

To be effective, workers' health services need to be based on a holistic approach that combines health promotion with disease prevention, diagnosis, and treatment, as well as physical and social rehabilitation. Technical cooperation from PASB has been targeted specifically at including workers' health services in primary health care actions, with universal coverage and full accessibility in the workplace. This strategy is fully in line with current reform and modernization initiatives in the health sector and in social security and with institutional development policies. The new care modality was piloted in the project *Strengthening and Expansion of Basic Health Services in Ecuador (FASBASE)*. The "essential care package" prepared by Ecuador's Ministry of Public Health in 1999 reflected principles of occupational primary health care in its design, operating procedures, and training manuals.

Upgrading water supply systems

A wide variety of illnesses, especially gastrointestinal and diarrheal diseases, can come from drinking unsafe water. Other risk factors for gastrointestinal ailments include the consumption of raw foods and poor overall hygiene.

In 1996, the Peruvian Ministry of Health and CEPIS launched a study on the acceptance and sustainability of home systems to disinfect water and food-stuffs. The study, which has already yielded some tangible results, covers 164 local food-and-water disinfection systems in 488 rural and periurban communities, benefiting 245,170 persons.

The study's results also are being evaluated in terms of the effective disinfection of water and the prevalence of diarrhea among children under 5 years old. A significant, sustained decrease in the rate is expected over time. The study uses a monitoring and evaluation methodology that collects data directly from local systems and then consolidates them by the country's regions. This method makes it easier to immediately correct problems where needed.

A further advantage of home-based food-and-water disinfection systems is that they foster the development of organized groups in each community. These groups not only manage their own disinfection systems but are able to use their management skills to address other environmental health issues.

Home-based water treatment: alufloc

Alufloc is a powdered chemical compound that is used to treat well water in isolated rural communities that do not receive piped drinking water; it simultaneously neutralizes bacteria, arsenic, and toxic metals that cannot usually be eliminated by any single home-based water treatment. The product's composition was determined by laboratory research, which established the action of each component and their various combinations. For instance, it is possible to eliminate 95% to 98% of arsenic from water containing concentrations of 0.3–0.5 mg/l.

Alufloc treatment involves the use of a simple device by an adult. Mothers are the most likely candidates, since they are usually the ones who look after the family's drinking water needs. The procedure can be built into the fam-

ily's daily routine, with water being prepared each evening for use the following day.

This low-cost technology has yielded impressive results: it has helped to bring children's diarrhea under control, as well as to decrease the risk of chronic diseases that are associated with the consumption of arsenic-tainted water. Alufloc has been field-tested in the Argentine provinces of Salta and Santa Fe, and the Ministry of Health currently has plans to launch the testing and use of this product in many more areas. Findings thus far have been excellent for the type of water targeted—i.e., water with little or no turbidity and relatively low alkalinity, in which it is very difficult to eliminate toxicity.

At the request of WHO, alufloc was tested in the community of Camilla in Bangladesh and yielded excellent results. The neutralization of harmful elements was assessed using field equipment designed in India. With advisory assistance from CEPIS, the methodology also has been tested successfully in Mexico. Alufloc is stable and its impact can be replicated over time; moreover, its manufacturers guarantee a shelf life of up to one year if the product is kept in its original container.

Improving water and sanitation services for indigenous populations

It is estimated that less than 45% of the rural population in Latin America and the Caribbean has adequate access to drinking water and sanitation services. For indigenous communities, the situation is particularly desperate, and their health and quality of life suffer accordingly. Cholera is a common factor in local mortality and morbidity patterns, owing mainly to the combination of poor water supply, poor sanitation, and poor hygiene.

PASB has called for prevention and control activities to be strengthened in rural areas, especially those inhabited by indigenous groups. In 1999, the Bureau and the German Technical Cooperation Agency (GTZ) launched a health project targeted to indigenous populations, which aims at reducing the risk of transmission of diseases caused by environmental factors, especially those related to water supply and quality, sanitation, and hygiene, among indigenous communities in Latin America.

The findings for 1999 were obtained on the basis of two subregional workshops held to launch the project. Bolivia, Ecuador, El Salvador, Guatemala, Peru, and Venezuela have already organized or are planning national semi-



nars on this topic. As of this writing, the final reports of the two workshops were being drafted, and a Web page was being prepared for the CEPIS site. The page will contain information on the situation of indigenous populations, current and future projects, and community training results and documentation.

Other safe-water initiatives

In 1999, PASB coordinated implementation of the Regional Action Plan for Improvement of the Quality of Water for Human Consumption as a critical component of ensuring access to safe drinking water. Through CEPIS, the countries received support for policy and strategy formulation, and several regional actions were overseen; CEPIS also served as the lead agency for numerous activities, projects, and programs to monitor water for human consumption in Argentina, Bahamas, Belize, Bolivia, Brazil, the Dominican Republic, Ecuador, El Salvador, Honduras, Nicaragua, and Peru.

During the year, the Bureau worked with the United States Environmental Protection Agency to draft international guidelines for water-quality monitoring programs; when ready, these guidelines will be one of the most important tools for improving water quality in the Region. CEPIS has continued to provide advisory services and serve as a reference center for enhancing the quality of laboratories that analyze water samples in Latin American and Caribbean countries.

With regard to standardized designs for water treatment plants, the technological expertise that CEPIS has amassed has allowed the Region's countries to continue incorporating new technologies in this direction. By offering courses on laboratory techniques, certifier training, and treatment plant design, operation, and maintenance, CEPIS has trained nearly 200 professionals who are now better prepared for the tasks that they perform in ensuring the supply of water for human consumption.

Solid waste management

With a view to improving solid waste management at the municipal level and bearing in mind the rapid trend towards decentralization and privatization, PASB has channeled its technical cooperation activities towards institutional strengthening and, by extension, bolstered the regulatory and leadership capabilities in the sector.

A Sampling of Solid Waste Disposal Efforts in the Americas

Suriname

In the rural community of Klaaskreek in Suriname, a community development project focusing on solid waste disposal has helped to introduce composting technology and provide for safe disposal of waste generated by a nearby regional clinic. A key outcome of this pilot project has been the improvement in local environmental health conditions thanks to safer handling and disposal of hazardous waste from the clinic. Moreover, the organic waste that is being recycled as compost is boosting soil fertility and crop yields on small vegetable plots, known locally as *kostgrondje*.

Under another recycling project, plastic bottles are collected and then cut into pieces and mixed with cement to make concrete blocks. The project was launched with support from the Fernandes Bottling Company (a Coca Cola affiliate), the Ministry of Health's Environmental Health Department, and several NGOs. Fewer plastic bottles in sanitary landfills has meant better environmental quality and fewer breeding areas for the *Aedes aegypti* mosquito, one of the vectors of dengue.

Cuba

Special mention needs to be made of the technology—developed by Cuba's Ministry of Economic Affairs and disseminated by PASB—for the design and manual construction of eight sanitary landfills as an alternative to solid waste disposal in cities of up to 20,000 inhabitants. As an example of cross-sector cooperation, a master solid-waste plan has been finalized for Havana, and work is under way on similar plans for all the other major cities on the island.

Guatemala

Environmental waste management in the Region has benefited from the Pan American Environmental Waste Management Network (REPAMAR) in the following ways: national networks for environmental waste management have been set up in seven countries of the Region, including Guatemala; applied research has been conducted to identify appropriate waste management solutions at the national and regional levels; and the Ministry of Health has received support in the drafting of standards for hospital waste management.

Venezuela

PASB cooperated with several ministries in Venezuela to carry out a sector analysis of solid waste, including hazardous waste, industrial waste, and hospital waste. The findings will be used to channel future investments in this sector.

Legislation

The Peruvian legislature is in the final stages of adopting framework legislation on solid waste handling. The text was written in response to needs identified by a sector analysis that PASB and the Ministry of Health coordinated in 1998.

Uruguay's Executive Branch issued a decree governing the handling of waste from health care facilities. Initial steps have been taken to enforce this legislation, which is the first of its kind in this country.

Health and sanitation education in schools

Schools are ideally suited for fostering the health-oriented mind-set that the countries of the Americas need. These microcosms reflect the environmental and health problems of the neighborhoods, communities, and cities in which they are located. PASB, by way of CEPIS, has been working to deliver health and sanitation information to teachers and students, and to build management capacity for implementing remedial measures. This will lead to better health conditions not only in the schools themselves, but also ultimately in their communities.

Accordingly, in 1999 the Bureau proposed that programs be formulated that would transform schools into healthy environments where children can learn about and adopt hygienic practices and take an active part in waste management and recycling. CEPIS has prepared instructional materials for these programs (two of which are described below) that are being used by Peru and other countries in programs that involve NGOs, community organizations, and other agencies.

La escuela y nosotros: promotores de higiene y salud is an educational packet that contains modules for teachers and students on 14 topics related to water, sanitation, and the social environment. A key feature of the packet is that it uses stories about the local setting as part of its teaching/learning methodology. This sparks students' interest in sanitation and health, helps them to learn about local conditions by focusing on values, habits, and customs, and stimulates their creativity and interest in reading. The other packet—*La gestión de núcleos higiénicos saludables*—aims to foster self-sustaining man-



agement of school sanitation services as a way of creating better living conditions for students.

Reform and modernization of the sector and its institutions

Institutional development in Costa Rica: integrated management systems

A major milestone was achieved in 1999 with the implementation of integrated systems for commercial operations, finance, and procurement at Costa Rica's Water Supply and Sanitation Authority (AyA). This institutional development project was a new experience in terms of PASB technical cooperation with water supply and sanitation agencies. The development and implementation of integrated systems for an entire country is a challenge that few companies in the Region have dared to take on. Under the project, training was provided to 660 employees in the business operations system and 215 in the financing and procurement areas. The systems serve a total of 440,000 customers.

The success of this undertaking can be attributed to a series of factors, including: the clear definition of commitments assumed by each of the players—AyA, PASB, and the International Bank for Reconstruction and Development (the World Bank); joint management and oversight on an ongoing basis in each subproject; emphasis on training for staff in each system; decentralization to the community level; open, real-time communication channels; total transparency of processes; on-site systems training for AyA personnel; continuous availability and consolidation of information from all the company's regional offices; and decision-making based on reliable, up-to-date information.

One of the outcomes has been a revenue level 26% higher than expected, as a result of access to updated information and the ability to monitor systems closely. Customer payment levels also have increased, from 88% in 1998 to 100% in 2000. At the same time, customer complaints have dropped—from 15% in 1998 to 8% in 2000—with the gradual fine-tuning and consolidation of the system.

Health Systems and Services Development

A study conducted by PASB in mid-1999 revealed that most countries in Latin America and the Caribbean were either planning or had begun to implement health sector reforms.



ALCALDIA

Andrés Eloy Blanco

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The process was well under way among a growing minority of the countries, and some were already considering a second or even a third generation of reforms to improve access to health services.

Evaluation of these reform processes is still at an incipient stage and has yet to be standardized. Very few countries systematically conduct such exercises, and they are only rarely used as input to redesign reform strategies. Since 1997, the Bureau has been working actively to profile the countries' health ser-

vices systems, including the monitoring and evaluation of reform processes. By the end of 1999, profiles had been completed for 20 countries; these can be accessed at the Internet site of the Latin America and Caribbean Regional Health Sector Reform Initiative (<http://www.americas.health-sector-reform.org/>), which is sponsored jointly by PAHO, the U.S. Agency for International Development (USAID), and other agencies.

With regard to reform content, 14 of the 20 countries guarantee the right of all citizens to health care; 10 do so in their constitutions. However, this right is usually described in generic terms and without any explicit limitations, and very few of the countries indicated that the general public was aware of this right or were taking measures to ensure such awareness.

Of the 19 countries that needed to expand service coverage, 15 have launched specific programs to do so. Nearly one-half of the programs are targeted at making primary care more available in remote areas and at strengthening programs for specific groups. Twelve countries have introduced some type of basic care package, geared either towards target groups or the entire population. Maternal and child health care is the component most commonly found in these programs.

According to findings observed in eight countries, reforms appear to be contributing to reduce the equity gap in only four of them, at least in terms of coverage of basic services and programs. Even so, there are few indications that reforms are helping to close gaps in the distribution of resources, regardless of the resource category. Sufficient information is not yet available to determine if there has been any change in the use of services.

The results in terms of more equitable coverage are surprising, bearing in mind that this is one of the objectives of virtually all sector reform programs. With regard to resource distribution, however, results are somewhat discouraging, although the indicators used to measure this variable are slow to register change and hinge on consolidated time series that are not usually available in most of the countries. A review conducted by PASB and the In-

ternational Labor Organization (ILO) in 1999 showed that over 200 million Latin Americans had no health protection and nearly 100 million were so geographically isolated that they lacked regular access to basic services. The multidimensionality of this problem was underscored recently in the social policy agendas adopted by several countries for the new millennium. Support from financial cooperation agencies has grown in importance in nearly all the countries, and health authorities are striving to fulfill their role in national policy-setting on sector financing and expenditure and defining priority areas to benefit from international financial loans.

PASB's cooperation in health sector reform

In 1999, PASB continued to support the countries in their efforts to strengthen the leadership role of their health authorities and core public health functions, as well as to expand their capacity to assess the health sector situation and launch the reforms necessary to achieve more equitable access to efficient, quality health services. The Bureau continued to develop, test, and apply methodologies and tools for analyzing, instituting, and following up on reforms. It also continued to conduct sector analyses (in Nicaragua, for instance) and disseminated the findings of monitoring and evaluation reports on the impact of changes (e.g., the Dominican Republic and Panama). In addition, it helped the countries to share their experiences at conferences, regional workshops, and study visits.

The 41st Directing Council of PAHO broke important ground by approving Resolution CD41.R12, which acknowledged the efforts of the Member States and the Bureau in designing a methodology to track health sector reforms in Latin America and the Caribbean. The resolution calls upon Member States to institutionalize the monitoring and evaluation process and to pursue policies that take the results of these processes into account.

During the year, the Bureau also supported national efforts to extend health protection, especially to marginalized groups. Technical cooperation activities were undertaken in several countries, a line of cooperation was launched with ILO, and work began on preparing a methodology for determining benefits packages and on updating information on social security in the Region.

On yet another work front, PASB focused on developing management capabilities and on building and reinforcing local and national service networks so that they can function in an integrated fashion and offer equitable access. It also sought to enhance the countries' ability to devise and negotiate master plans for health investment as a way of linking reconstruction needs arising from natural disasters—such as those that occurred in El Salvador, Honduras, and Nicaragua—with the implementation of sector reform. Lastly, a project to prepare national health accounts was launched and has already begun to yield benefits in several countries.

Health technology serving people

Essential drugs

As a result of the globalization of pharmaceutical markets that continues to influence the political decisions affecting the accessibility and affordability of essential drugs, the Region faced numerous challenges in 1999. In response, Member States increasingly explored alternatives for improving drug accessibility, such as public and private insurance schemes that include reimbursements for drugs and national programs that cover drug expenditures.

Purchases under the drug supply system are still being examined, and national agencies and local institutions struggle to increase their effectiveness in drug purchasing. Moreover, both the global market and decentralization are influencing governmental decisions on structuring drug regulation offices. Some countries are moving towards establishing an independent, comprehensive agency for regulating drugs, food, and medical devices, while others are restructuring their drug registration within the ministries of health.

All countries in the Region are striving to enhance the effectiveness of their regulatory agencies and the quality of their national pharmaceutical markets. In 1999, PASB continued to support them in their efforts to improve the availability and accessibility of essential drugs, as well as the quality of the the Region's pharmaceutical market. The Bureau also coordinated drug donations for countries affected by natural disasters and supported harmonization of drug regulations at the Regional level. At the subregional level,



efforts were made to harmonize drug regulation within and across MERCOSUR and the Andean Community.

Radiological health

Radiological health programs encompass radiation medicine and radiation safety. Due to high costs, many radiology services in Latin America and the Caribbean are inadequately equipped and staffed, insufficiently maintained, and operated with little regard for the clinical outcome or potential health risks to staff and patients from ionizing radiation. This has led to missed diagnoses, wasted supplies, ineffective treatments, and, possibly, an increased risk of cancer to patients who undergo examinations or treatments.

To address these problems, in 1999 the Bureau emphasized a country-by-country situation analysis, supported personnel training programs, encouraged the establishment of quality assurance systems, and urged the ministries of health to provide leadership in these areas within the public sector reform framework.

The Bureau continued to promote guidelines for radiology services by distributing the publication *Organization, Development, Quality Assurance and Radiation Protection in Radiology Services: Imaging and Radiation Therapy*, and by making presentations on the subject at international congresses of diagnostic imaging, radiation therapy, brachytherapy, and medical physics specialists.

Colombia and Honduras made significant efforts to upgrade their radiation therapy services. As part of a PASB-sponsored project in Honduras, the Ministry of Health of Spain subsidized staff training. Both countries continued to cooperate with the International Atomic Energy Agency (IAEA) to verify the calibration of high-energy radiotherapy units through a postal dosimetry service.

PASB promoted implementation of the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources and distributed the publication by the same name, prepared follow-up information, and sponsored training programs on the subject. Follow-up publications included the *Manual of Visual Aids on Radiation Protection in Medical Applications* and the *TecDoc Organization and Operation of a National Regulatory Infrastructure Governing the Protection against Ionizing Radiation and the Safety of Radiation Sources*, with the IAEA. The Bureau remained a member of the IAEA's Inter-Agency Committee on Radiation Safety and participated

in that agency's Radiation Safety Standards Advisory Committee. PASB bolstered its knowledge of how to respond to a radiological or nuclear accident by participating in a simulated nuclear reactor accident in Canada.

Laboratory services and blood banks

The safety of blood for transfusion has become a very important issue, and efforts are under way to improve the quality of blood banks. These and, more importantly, blood donation centers are based in hospitals, which limits the accessibility of potential voluntary donors in Latin America and the Caribbean. The fact that there are so many blood banks in Latin America makes it difficult to standardize procedures or establish national quality assurance programs. In addition, public health laboratories must support epidemiological surveillance in a constantly changing economic and epidemiological environment. Given these challenges, both technical and managerial aspects of national laboratory networks need to be strengthened.

Backed by CAREC, INCAP, collaborating centers, and professional associations, in 1999 PAHO supported Regional programs on quality assurance to conduct screening tests and immunohematology in blood banks, and antibiotic resistance testing and polio diagnosis in public health laboratories. In addition, selected countries of the Region established national programs to evaluate blood bank performance. Ecuador, El Salvador, Nicaragua, Paraguay, Peru, and Venezuela established similar programs for testing antibiotic resistance. INCAP's and CAREC's polio diagnostic laboratories were accredited, and program assessment and training took place in more than 30% of Central American and Caribbean countries. PASB also promoted the integration of both laboratories and blood banks into Regional programs in 1999.

Countries in the Region began to integrate blood banks into their blood transfusion programs and to integrate public health laboratories into their national disease surveillance systems. The strengthening of surveillance systems in the countries hit by the 1998 hurricanes began to be addressed in Central America, the Dominican Republic, and Haiti. CAREC provided support in the Caribbean countries and is leading blood bank and transfusion program integration in that subregion. National centers for blood safety were designated to participate in Regional programs. In collaboration with the American Association for Blood Banks, PASB elaborated blood bank standards for Latin America; the Organization also produced preliminary standards for the Caribbean. Programs for external evaluation of performance began to func-

tion in collaborating centers in São Paulo (Brazil), the Balearic Islands (Spain), Winnipeg (Canada), and Atlanta (Georgia, USA); WHO-sponsored global programs carried out analogous activities.

Physical infrastructure and outfitting

The health sector's transformation will bring about sweeping changes throughout the working environment in which health authorities strive to guarantee safe, effective, and good-quality medical equipment and inputs. Today, public sector health facilities and equipment are in poor condition or obsolete; many of them are being renovated or retrofitted as a way to expand access and coverage and to improve the health care provided to the population. In addition, an effort is being made to more efficiently manage and finance the operation and renovation of the health services' physical infrastructure and equipment, with a view to protecting the investment they represent.

In 1999, PASB worked with the countries to strengthen their capacity to maintain and renew physical and technological infrastructure at health facilities. The following achievements deserve special mention: (1) the flow of information to the countries was intensified as part of Y2K contingency plans for health services; (2) the Regional Plan for Planning, Regulation, and Management of Physical and Technological Infrastructure of Health Services was drafted; (3) technical cooperation was strengthened for the regulation of medical equipment and devices in coordination with WHO and with support from the U.S. Food and Drug Administration, the Medical Devices Bureau of Canada, and the Emergency Care Research Institute (ECRI) of the United States; (4) support was provided to form a group of countries representing Latin America and the Caribbean within the Global Harmonization Task Force for medical devices; (5) the global network on communication and data exchange for physical and technological infrastructure of health services was launched in coordination with WHO and the American College of Clinical Engineering; and (6) the *ECRI Health Technology Monitor* has been translated and posted each month on the PAHO Internet site.



Health services information technology

The use of information systems technology is critical for improving access to cost-efficient, quality health care; service operation; and management. Changes in the health sector require applications and technologies capable of supporting increasingly complex decisions and interventions. Cost savings and quality improvements can be obtained from automated patient, clinical, and epidemiological data management; support for diagnostic and therapeutic services; image-based systems; resource management; integration of administrative and clinical data; remote access to medical information; access to databases; decision support; communication through interactive media; and management of physical and financial resources.

The Organization's technical cooperation in this field targeted:

- Timely application of health services information systems and technology that contribute to social and economic development;
- Formulation and promulgation of norms, policies, and guidelines;
- Provision of advice on feasible expectations, benefits, and constraints associated with the introduction of information systems and technologies;
- Recommendations on appropriate decisions regarding the selection, acquisition, deployment, and operation of health services information systems;
- Research; and
- Support of specific regional and national initiatives.

The Organization's technical cooperation in this area yielded a variety of benefits. PAHO consulted experts to increase the knowledge of health services information systems specifications, procurement, and service contracting; nursing data standards; and ethics regarding dissemination of health practices and information via the Internet. Such PAHO publications as *Setting Up Health Care Services Information Systems: A Guide for Requirement Analysis, Application Specification, and Procurement*; *Cyberspace Law and Ethics: A Health Sector Perspective*; and *Building Standard-based Nursing Information Systems* disseminated important information on a variety of health information technology topics. The Organization also conducted evidence-based practice and information systems; evaluation methodology for health telecommunication projects; the use of palmtop computers in

community health; the communication of clinical and administrative data between the primary and reference levels; and health informatics education and training.

PAHO also supported major national and Regional initiatives regarding drug registration; national health cards and care management systems; telehealth projects; the implementation of the II Presidential Summit of the Americas' recommendations; and national health information and technology plans. WHO collaborating centers, academic institutions, professional and scientific societies, multilateral agencies, industrial entities, and national and international governmental and nongovernmental organizations collaborated with PAHO in 1999 in its work in health information technology.

Oral health

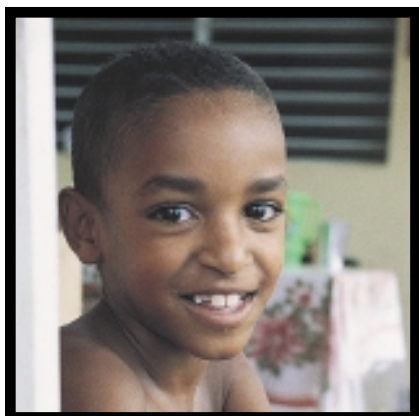
In 1999, PASB promoted oral health through the Multi-Year Plan to Implement National Oral Health Preventive Programs. The W.K. Kellogg Foundation grant came to an end after achieving outstanding results for oral health in the Region.

As Table 1 shows, levels of dental caries diminished in countries with salt fluoridation programs. Except for Jamaica, data derive from the second post-fluoridation evaluation. All country programs are fully sustainable.

Table 2 indicates Decayed Missing Filled Teeth (DMFT) levels and salt fluoridation program status in selected countries. Survey data show continued reduction in caries levels throughout the Region. However, not all programs are consolidated or sustainable. Countries that are having difficulty sustaining their programs need support, as do those countries that have expressed interest in establishing similar programs. Because the past five years of experi-

TABLE 1. Reduction of decayed, missing, and filled teeth (DMFT) in five countries with salt fluoridation programs.

| Country | Baseline studies | | Follow-up studies | | Caries reduction | Compound annual reduction (%) |
|------------|------------------|---------|-------------------|---------|------------------|-------------------------------|
| | Year | DMFT-12 | Year | DMFT-12 | | |
| Colombia | 1980 | 4.8 | 1998 | 2.3 | 52.1 | 4.0 |
| Costa Rica | 1988 | 8.4 | 1999 | 2.5 | 70.6 | 10.4 |
| Jamaica | 1984 | 6.7 | 1995 | 1.1 | 83.9 | 15.1 |
| Mexico | 1987 | 4.6 | 1996 | 2.5 | 45.7 | 6.6 |
| Uruguay | 1992 | 4.1 | 1999 | 2.4 | 41.5 | 7.4 |



ence and program analyses indicate that the key to program sustainability is the salt industry's proficiency in salt fluoridation technology, PAHO has requested major funding in order to carry out programs to strengthen the salt industries' capacity in this area.

Table 3 shows that fluorosis is not a problem in the countries listed. Fluorosis has not worsened or become a problem due to salt fluoridation programs, and these seem to be delivering the correct amount of fluoride to the population. Surveillance systems are in place and working well.

PASB provided technical cooperation to the Bahamas, El Salvador, Grenada, Guatemala, and Peru to put in place epidemiological surveillance systems for salt fluoridation programs. These countries initiated salt fluoridation programs or, in the case of Peru, consolidated an existing program. The epidemiological profile of dental caries in the Region has changed recently, due mainly to the effects of fluoridation programs. Now that the benefits of these programs are being felt in the Region, the countries must focus on the other goal of PAHO's Regional oral health strategy: cost-effective oral health services aimed at eliminating disparities in treatment. Pre-program training was carried out in Mexico, and many other countries expressed great interest in salt fluoridation.

TABLE 2. Decayed, Missing, and Filled Teeth (DMFT) indicators and the status of salt fluoridation programs in Latin America and the Caribbean.

| Country | DMFT-12 | National salt fluoridation program |
|--------------------|--------------------|------------------------------------|
| Belize | 0.63 (1999) | In progress |
| Bolivia | 4.67 (1995) | Yes |
| Colombia | 2.30 (1998) | Yes |
| Costa Rica | 2.47 (1999) | Yes |
| Cuba | 2.90 (1989) | Projected |
| Dominican Republic | 4.31 (1997) | In progress |
| Ecuador | 2.94 (1996) | Yes |
| Granada | 5.52 (1991) | Projected |
| Guatemala | In progress (1999) | In progress |
| Guyana | 1.33 (1995) | Projected |
| Honduras | 3.7 (1997) | In progress |
| Jamaica | 1.08 (1995) | Yes |
| Mexico | 1.39 (1999) | Yes |
| Nicaragua | 2.81 (1997) | In progress |
| Panama | 3.61 (1997) | Yes |
| Paraguay | 3.89 (1999) | Yes |
| Peru | 3.09 (1990) | Yes |
| Uruguay | 2.40 (1999) | Yes |
| Venezuela | 2.12 (1997) | Yes |

Health technology assessment

A worldwide survey conducted between 1995 and 1996 revealed that of 103 public and private institutions and organizations devoted to health technology assessment (HTA) in 24 countries, only one was located in Latin America or the Caribbean; today it is no longer active. In April 1998, the II Summit of the Americas included HTA as a specific mandate in its Plan of Action. However, in June 1999, 10 out of 19 countries polled had no groups or organizations actively engaged in HTA. The other nine countries—

TABLE 3. Dental fluorosis in selected Latin American and Caribbean countries, according to Dean's index, using the maximum score in the six upper anterior teeth in 12-year-old children.

| Country | <i>n</i> | None | Questionable | Very mild | Mild | Moderate | Severe |
|----------------------|----------|-------|--------------|-----------|------|----------|--------|
| Belize | 323 | 66.3% | 10.8% | 14.8% | 5.3% | 1.2% | 1.5% |
| Bolivia | 287 | 58.5% | 23.7% | 15.7% | 1.7% | 0% | 0.0% |
| Dominican Republic | 192 | 68.8% | 8.3% | 11.5% | 8.9% | 1.0% | 0.0% |
| Honduras | 307 | 92.1% | 5.6% | 1.3% | 0.0% | 0.7% | 0.3% |
| Nicaragua | 365 | 82.7% | 9.9% | 4.9% | 1.9% | 0.6% | 0.0% |
| Paraguay | 348 | 57.8% | 26.4% | 11.2% | 3.4% | 0.6% | 0.6% |
| Uruguay ^a | | | | | | | |
| Venezuela | 1,055 | 84.5% | 10.0% | 4.0% | 0.8% | 0.8% | 0.0% |

^a No fluorosis was detected in anterior teeth and only seven cases of mild fluorosis were found in one city.

Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, and Panama—had at least one institution or group exclusively or partially devoted to HTA, the majority of them recently established.

In light of this situation, PAHO sought to consolidate national HTA experiences and, at the same time, to work towards starting HTA in other countries by promoting partnerships. The Organization sought ways to foster assessment preparation and priority setting in the countries through access to full-text HTA reports, fellowships for training and long distance learning, cooperation for joint HTA exercises, and peer review mechanisms. It also stressed the practical application of HTA in order to avoid its being perceived as a speculative or theoretical activity.

Since mid-1996, PAHO's technical cooperation has taken several approaches. The Organization has promoted HTA through the distribution of the bilingual brochures *Developing Health Technology Assessment in Latin America and the Caribbean* (1998) and *Health Technology Assessment in Latin America and the Caribbean: A Collection of Cases* (1999). It has strived to create a group of professionals familiar with HTA methodologies, work closely with decision-makers in the countries, ensure appropriate access to international information resources in the field, and support HTA units in several Member States. PAHO also developed two Regional HTA seminars, one in Havana for Cuba and the English-speaking Caribbean, and another in Quito, Ecuador. PAHO also has promoted networking and information sharing through a mailing list of more than 300 Latin American HTA professionals and an interactive HTA website, and has facilitated partnerships between Member States and appropriate international actors. With the help of WHO collaborating centers in the Region, PAHO has developed joint seminars with the International Society for Technology Assessment in Health Care and the International Network of

Agencies for Health Technology Assessment. These seminars represent the first steps towards a formal, medium-term joint initiative between the International Society for Technology Assessment in Health Care and PAHO, which will be presented to the Canadian International Development Agency and other potential international donors for funding.

Human resources

Human resources in the health services deliver technical and social services, although their role also deals with other key economic, organizational, or political considerations. Accordingly, human resources are often referred to as the cornerstone of health services. Despite the fact that in many places human resources are seldom assigned very high priority, sector reforms are helping to ensure that they receive more attention.

PASB has analyzed human-resource management trends and methodologies as part of an effort to respond effectively to the countries' needs in this area. Considering the new methodological and technological options available and the need to include human resources in local strategic planning and decentralization, the Bureau has defined the following substantive lines of action and proposals for cooperation.

In June 1999, a Regional initiative was formally launched in cooperation with the Economic Commission for Latin America and the Caribbean (ECLAC) and ILO; it created the Observatory Project for Human Resources in the Health Sector and Change in the Management of Human Resources in Health Services. A cooperative network of governmental, nongovernmental, academic, research, and service agencies and institutions has thus been set up to produce and exchange information and knowledge that is useful in the definition of human resource policies and the implementation of management actions.

Under the initiative, activities have been carried out to optimize the use of information systems, conduct comparative studies, train management personnel, promote dialogue on human resource policies, and disseminate information. The Bureau has also cooperated in in-service training and the development of national capabilities for distance education. As part of the reform effort, training has become a strategic function of service management and of staff productivity and good performance. However, in-service training has undergone a major change in terms of the objectives pursued, the management methods adopted, and the educational, methodological, and technological models used. In response to this change, the Bureau has

strongly promoted ongoing training in the health services, an idea that has been broadly accepted and used throughout the Region. Proposals have also been formulated for cooperation in distance education, with emphasis on boosting the capacity of service and educational establishments to generate quality programs that respond to educational needs.

PASB has also taken part in cooperation activities to enhance the quality of professional education for health personnel; devise frameworks and tools to regulate professional training and practice; include educational institutions in health services and reform; and update educational models to ensure that they respond to communities' needs and, as a priority, ensure that professional training reflects the new care models and core functions of public health. Medicine, nursing, public health, and health journalism and social communication are some of the fields covered under this undertaking. The Bureau has also been involved in the development of international health as a major course of study.

PASB fostered staff development through its scholarship, textbook, and instructional materials programs. It also supported decision-making with its human resource information and documentation systems.

Information systems in decision-making

Health sector reform places new demands on the countries' information systems. Information is needed on the features, functions, and interaction of the various public- and private-sector players vis-à-vis the sector's objectives and their effect on the population. Information on such issues as financing, quality, effectiveness, efficiency, and equity in health services takes on special importance for decision-makers charged with financial, administrative, and care-related matters.

With the separation of functions and decentralization taking place in the health systems and services, there is a need to integrate information into care networks that are able to pool both public and private resources. At the same time, sources must be integrated through a set of shared standards and criteria so that the information will be useful at the various action and decision-making levels.

The countries of the Americas have very heterogeneous health systems, ranging from highly sophisticated and costly to virtually nonexistent. This means that national and subnational information systems must rely on tech-

nologies that are appropriate to each setting, from primary care to complex high-technology centers.

Given the limited resources available for addressing the population's health needs, health systems have turned to monitoring and evaluation as a means of guaranteeing optimal service quality. Many countries are currently developing or perfecting their national and subnational information systems, usually under the auspices of the health authorities.

Although some countries have specific policies in place for health information systems, effective progress usually hinges on management changes, especially if the system is undergoing reform. Reform involves controlling, monitoring, and evaluating how systems manage information on financing, national accounts, the detection of inequities in service access and use, and the evaluation of care quality, as well as other considerations, such as outcomes.

The health sector reform initiative calls for technical cooperation to be provided for information systems. In 1999, PASB worked to develop indicators to identify useful national data for planning, management, and evaluation processes as well as technical support documentation. A report on the establishment of information systems included a menu of options that professionals from various action and decision-making spheres could use to identify the specific kind of support information systems could provide. Work is also under way on a database of indicators that pursues the same objective and will contribute to the various processes and levels of management.

The Bureau has also launched a series of initiatives and projects that support the use of information in decision-making, including the monitoring and evaluation system for health sector reform, the WINSIG management information system, the Inventory of Hospitals in Latin America and the Caribbean, the Tools for Health Human Resources Management, the Observatory Project of Human Resources in the Health Sector, and a number of databases on essential drugs and other health technologies.

Health care quality: status and prospects

Despite the efforts made by governments and private providers to improve health care quality, some countries still register considerable dissatisfaction in this regard among both providers and users. Globalization and State reforms have forced politicians and health authorities to seek ways of meeting the demands of increasingly better informed users. As



the public demands more effective and efficient services, service providers try to cut costs. Accordingly, the countries are striving to improve service quality so as to reduce costs while keeping users satisfied. One of the mandates that emanated from the 1994 Summit of the Americas meeting in Miami was that the fight against poverty must necessarily include providing equitable access to basic, quality health services for all.

Historically, hospitals have designed and implemented their own quality programs, and results have for the most part been unsatisfactory. The lack of a clear definition of the concept of quality both by the countries and by co-operation agencies was always a limiting factor. Progress was also hindered by the absence of standards, indicators, and incentives to promote quality. Argentina, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Jamaica, Mexico, and Peru now have programs under way to ensure health care quality. Some of these programs have already yielded promising results, while others are still in their very early stages.

Progress in this area can be summarized in five Regional trends: (1) measuring and demonstrating service quality; (2) shifting towards an evaluation of services; (3) combining of different quality management strategies; (4) emphasizing care processes and patient outcomes; and (5) shifting from hospitals to health systems and networks.

In May 1999, PASB organized a meeting of international experts on health service quality in Bogota, Colombia. Areas for technical collaboration with the countries were identified, and a project was launched with Germany's Heidelberg University and the German Technical Cooperation Agency (GTZ) to develop tools for external supervision and evaluation of services and cross-sector coordination as a means of improving quality.

A project was launched with ECRI to locate bibliographic material and draft a guide for health institutions to use to establish standards of quality. Under a joint initiative with the Hospital Management Center of Colombia, a set of 20 hospital-care quality indicators was prepared according to level of complexity. This work is being coordinated by USAID's Quality Assurance Program.

Also with collaboration from the Quality Assurance Program, the Bureau prepared another set of indicators to measure the impact of health reforms, decentralization, and financial changes on service quality. A document was also drafted to ask cooperation agencies to include service quality considerations in their lending portfolios for the countries.

PASB held a series of seminars and workshops to identify and share information on country activities and outcomes. These experiences were disseminated through printed and electronic media. At these events, managers of

quality improvement and assurance programs received training to enable them to interpret findings and take corrective action.

With regard to research on quality, an updateable inventory was drawn up of programs, experiences, experts, and projects, describing the location, type of activity conducted, results, applicability, research under way, persons responsible, and the amount and sources of financing. A tool was also designed for evaluating quality-related conditions and problems detected in the countries' health services, together with a methodology for defining the most useful policies and strategies for improving those services. Lastly, the Bureau also supported the preparation of protocols and technical guidelines for health care.

Health of indigenous populations

The Region of the Americas has an indigenous population of some 43 million, comprising more than 400 different ethnic groups and contributing to the Region's multicultural, multiethnic, and multilingual character. Describing more precisely the conditions and lifestyles of indigenous groups—and their health status as a result and expression of these conditions—continues to be of paramount importance in order to identify, analyze, and address the broad gaps and inequities that exist between these peoples and the rest of society.

The Region's indigenous peoples live mainly in remote, rural communities; they are younger and have higher fertility and birth rates than the national averages. For most age groups, mortality is higher than for the general population. However, these rates tend to be lower among the group aged 55 and over. The principal causes of death include conditions that are easily preventable, such as gastrointestinal infections, nutritional deficiencies, and diseases preventable by immunization. Overall, indigenous populations face a set of geographic, economic, and cultural barriers that block their access to basic health services (Figures 1 and 2).

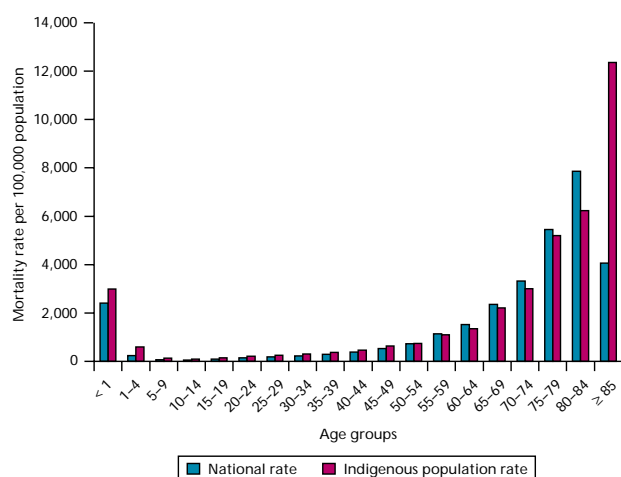
The Health of the Indigenous Peoples Initiative was launched in 1993 to support the goal of health for all in the year 2000 as a joint effort of the governments, nongovernmental organizations, and indigenous peoples and organizations of the Americas. PAHO's Member States have ratified the five principles of the initiative, which are: (1) the need for a holistic approach to



ADVANCING THE PEOPLE'S HEALTH

Pan American Health Organization

FIGURE 1. Mortality rates of the indigenous population, by age group, Mexico, 1993.



Source: Secretaría de Desarrollo Social, Instituto Nacional Indigenista. La salud de los pueblos indígenas en México. México, D.F.: INI; 1993.

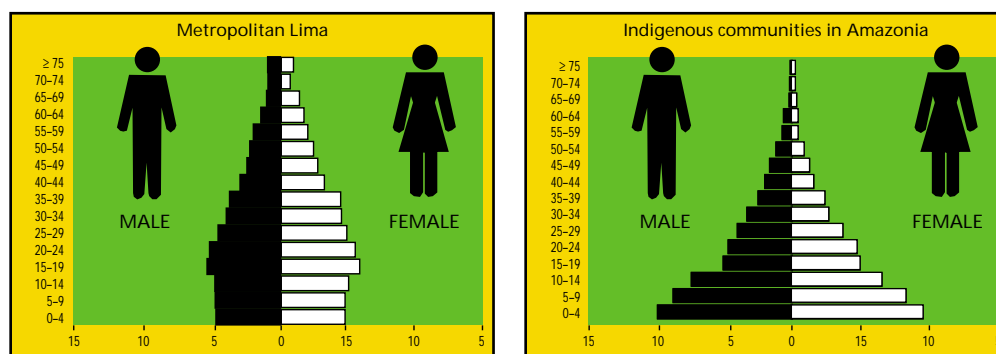
health; (2) the right to self-determination of indigenous peoples; (3) the right to systematic participation; (4) respect for and revitalization of indigenous cultures; and (5) reciprocity in relations.

In 1997, the Directing Council of PAHO reaffirmed the commitment of the Member States to detect, monitor, and eliminate ethnically determined inequities and other barriers to access to health care.

Pursuant to these resolutions, in 1999 health activities were undertaken for indigenous populations in four areas of work: strategic planning and management; priority programs; organization and delivery of health services in multicultural communities; and production and dissemination of scientific and technical information. The systematization of indicators made it possible to improve the quality of information on indigenous peoples in terms of their demographic, socioeconomic, and epidemiological profiles as well as their access to health care and service coverage.

Within the framework of the guiding principles of health sector reform, activities were carried out to promote an intercultural approach in health care. This strategy fosters equitable access to quality care for the entire population and, in particular, for the indigenous population. It acknowledges the importance of respecting diversity and calls for a population's sociocultural charac-

FIGURE 2. Comparison of the age structure of the population in metropolitan Lima with that of Indigenous communities in Amazonia, Peru, 1997.



Source: Instituto Nacional de Estadística e Informática, UNICEF. La población de las comunidades indígenas de la Amazonia. Lima: INEI-UNICEF; 1997.

TABLE 4. Health services in indigenous settlements, by zone, Bolivia, 1995.

| Zone | Settlements (n) | With health services (%) | Without health services (%) | No data available (%) |
|----------|--------------------|-----------------------------|--------------------------------|--------------------------|
| Chaco | 367 | 17 | 39 | 44 |
| Oriente | 345 | 24 | 66 | 10 |
| Amazonia | 380 | 16 | 75 | 9 |

Source: Pan American Health Organization. HSP/HSO. Situación de salud de los pueblos indígenas de Bolivia. Junio 1998. Anexo 4.

teristics to be taken into account when formulating strategies and methodologies for the development of human resources and care models.

From this perspective, indigenous medicine constitutes an important community resource. According to the census of lowland indigenous populations conducted in 1994 in the Bolivian regions of Oriente, Chaco, and Amazonia, between 52% and 85% of residents in areas with high percentages of indigenous population preferred traditional medicine. PASB is continuing to study this attitude by gathering and disseminating information on traditional health systems in Latin America and the Caribbean (Table 4).

A study of nine countries concluded that traditional medicine is an accepted fact—it is a cultural manifestation of indigenous peoples, it is closely linked with society, and it is passed down from one generation to the next. It is interesting to note that many traditional practitioners are women who possess an in-depth knowledge of the various uses of medicinal plants. The relationship between traditional medicine and the government is, however, contradictory. On the one hand, legislation is enacted protecting this medicine, and on the other, its practice is restricted. That notwithstanding, the rural population continues to seek out traditional practitioners because of their cultural familiarity and their distrust of government-run health centers. Economic and cultural reasons also explain the use of traditional medicine and home remedies.

In view of the lessons learned in implementing the Initiative and the renewal of the commitment by the Member States, three priority lines of action have been set for future work: strategic planning and formation of partnerships among stakeholders; the establishment of care models and frameworks; and the gathering of information that will make it possible to detect and monitor inequities. Pursuing the goal of equity in the Region continues to be a major challenge.

Disease Prevention and Control

PAHO works to strengthen its Member States' capabilities to eradicate, eliminate, prevent, and control disease.



In order to attain its goals in disease prevention and control, the Organization has established programs for communicable diseases, HIV/AIDS and sexually transmitted infections, noncommunicable diseases, and veterinary public health. Two specialized centers—INPPAZ in Argentina, which focuses on food protection, and PANAFTOSA in Brazil, which addresses zoonoses and the eradication of foot-and-mouth disease—contribute to veterinary public health activities. The Caribbean Epidemiology Center (CAREC), located in Trinidad, provides technical cooperation to the English-speaking countries of the Caribbean.

This chapter highlights the major accomplishments in disease prevention and control during 1999–2000.

Communicable diseases

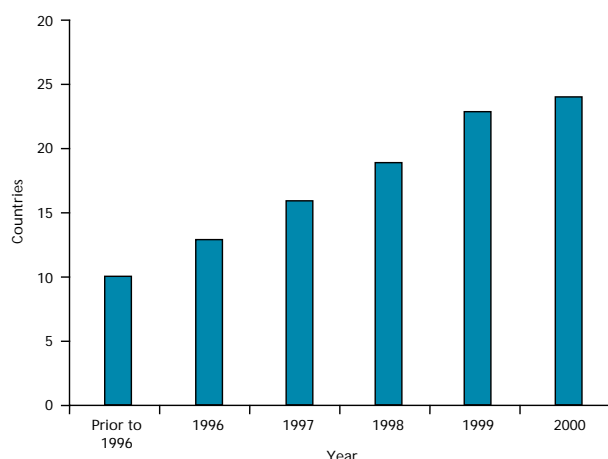
Tuberculosis

Tuberculosis remained as a health problem for the Region of the Americas in 1999. Approximately 250,000 cases are reported annually, but the true figure is estimated to be about 400,000. In some parts of the Region, tuberculosis is linked to poverty, inequities in health service coverage and unequal access to control measures, growth of marginal populations, and migration as people search for better lives.

PAHO/WHO recommends that the countries use Directly Observed Treatment, Short Course (DOTS), which is the most effective way of controlling the disease. The number of countries using this strategy has increased from only 10 in 1996 to 24 as of the end of 1999 (Figure 1). During the last year, DOTS was adopted by Colombia, Costa Rica, the Dominican Republic, and Panama, all of which have designated pilot areas where it will be applied.

The difference between the countries that use DOTS and those that do not became evident in 1999, when the outcomes of treated and untreated tuberculosis cases originally reported in 1997 were examined. Countries using DOTS reported 62,211 cases and were able to evaluate 94% of them. The review showed that treatment had been successful in 80% of the cases and the dropout rate had been only 5%. The countries that had not used DOTS reported 65,826 cases, and they only succeeded in evaluating 50% of these. Treatment was successful in 36.1% of the cases evaluated and the proportion of patients abandoning therapy was 15.4%.

FIGURE 1. Number of countries that apply the Directly Observed Treatment, Short Course (DOTS), Region of the Americas, 1996-2000.



Source: Annual reports of the national tuberculosis programs, Ministries of Health.

The countries that have successfully used DOTS over the last decade are sharing their experiences with those that have begun to use it only recently. During 1999, under agreements between PASB and the countries, Peru's national tuberculosis team provided advisory services for the Dominican Republic, Ecuador, and Paraguay, while Cuba shared its experience with Guatemala, Honduras, and Panama.

Malaria

With the spread of the global malaria control strategy in the Region, malaria-specific mortality rates have dropped significantly. In 1994, the first year for which comparable records were available, the crude mortality rate from *Plasmodium falciparum* malaria

was 8.3 per 100,000 exposed population. By 1998, this rate had plummeted to 3.0 per 100,000 exposed population, for a 63% decrease.

Health sector reforms in the Region's countries have brought about structural changes that have curtailed the political and economic support needed to maintain a fully operational global malaria control strategy. However, progress made with the "roll back malaria" initiative will serve to guide the full implementation of the global control strategy. The function of the "roll back malaria" initiative has evolved, and today it works more as a broker, promoting the assessment of needs in the countries and procuring partners that will invest in meeting them. Politically, the initiative has helped to sensitize high-level decision makers to focus on malaria control in endemic countries such as Brazil, Ecuador, and Venezuela.

Diseases preventable by immunization

Successful partnerships in immunization to benefit the health of children

Important new partnerships were forged with the World Bank, the Centers for Disease Control and Prevention, the Gates Foundation, and the March of Dimes Foundation for immunization efforts that will benefit the health of children in the Americas. These organizations have joined USAID and the Gov-

ernment of Spain in their support for the the development and strengthening of national immunizations programs. PAHO is playing a catalytic role in leveraging their contributions. In each country, joint discussions on priority interventions are taking place under the umbrella of interagency coordinating committees, which were established by PAHO during the successful initiative to eradicate poliomyelitis.

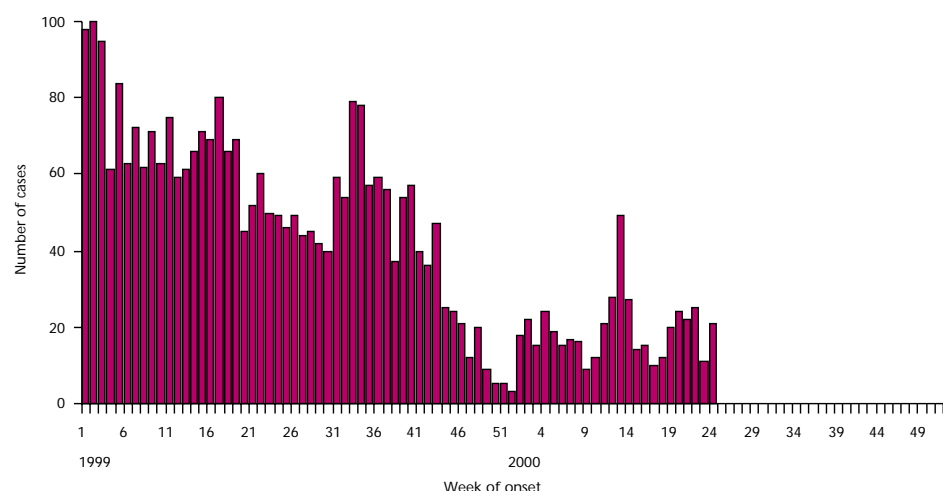
The Organization is working with the World Bank in Bolivia, Peru, and, more recently, in Paraguay, in the immunization component of the Bank's health sector reform projects. The collaboration in Bolivia is part of a 10-year project that seeks to expand coverage and improve the quality of health service networks, empower communities to improve their health, and strengthen local capabilities to respond to health needs. A specific line item has been established in the national budget to cover vaccines and syringe costs for national immunization programs and progress has been made in introducing the pentavalent and the measles/mumps/rubella vaccines, as well as the yellow fever vaccine in endemic areas. Bolivia also allocated US\$ 2 million towards its immunization program in 1999, up from US\$ 53,000 in 1998.

The CDC's support has been critical in complementing national efforts to establish a surveillance infrastructure for rubella control. Regional efforts to control rubella also have been reinforced with the support from the March of Dimes Foundation. A grant from the Gates Foundation is further facilitating the establishment of national surveillance systems and the development of sustainable financing mechanisms to consolidate the introduction of vaccines against *Haemophilus influenzae* type b and to prepare the Region for introduction of pneumococcal and rotavirus vaccines.

Measles eradication

The Region of the Americas is on the verge of achieving the eradication of indigenous transmission of measles by the end of the year 2000. Reaching this goal will protect the health of children in the Western Hemisphere from a disease that particularly affects children under 1 year of age. Confirmed measles cases in the Americas have declined 95%, from a high of 53,661 cases in 1997, to 2,803 cases in 1999. See Figure 2 for the most recent data on confirmed measles cases at the time of this publication.

Attention has centered on progress achieved towards measles eradication in the four remaining countries that still have infected areas. These countries are implementing a dual strategy of intensive measles vaccination of municipalities that fail to reach $\geq 95\%$ coverage (mop-up), combined with bimonthly active searches of measles cases. Bolivia has been the most affected by measles,

FIGURE 2. Confirmed measles cases by week of onset, Region of the Americas, 1999-2000.^a**Source:** Country Reports^a Data as of 17 June 2000: 487 confirmed measles cases.

with approximately 50% of all 1999 reported cases in the Region occurring in the country, mainly due to large areas of under-immunized populations. Measles virus transmission initially clustered in urban centers, subsequently spreading to some selvatic regions. With PAHO's technical and financial support and financial assistance from the World Bank, the Inter-American Development Bank, UNICEF, and local nongovernmental organizations, health authorities launched an aggressive plan of action to stop the outbreak and interrupt virus transmission. The Ministry of Health also issued a Ministerial Resolution, supporting the implementation of a comprehensive national vaccination campaign conducted in December of 1999.

In response to a similar situation in the Dominican Republic, PAHO organized a task force with the country's health authorities, to ensure the effective control of measles virus transmission. In February 2000, a five-year plan of action for immunization developed by the Ministry of Health with PAHO's technical input received US\$ 13 million from PAHO, the World Bank, and the Japanese International Development Agency. In Brazil, most states are showing a decrease in transmission, despite intense surveillance by the 27 additional epidemiologists hired as part of the special task force. Remaining cases are primarily clustered in the state of Pernambuco. A follow-up measles campaign was carried out in June 2000. The Government has pledged to renew the task force's financing. Progress also is evident in Argentina, which reported most of its cases in 1998. Argentina rejoined the PAHO Revolving Fund for

Vaccine Procurement and requested that an evaluation of the national immunization program be undertaken in April.

The Organization has intensified its collaboration with Member States to ensure that sufficient resources are allocated to maintain adequate stocks of measles vaccines, other vaccines, and necessary supplies. These measures are critical to support the implementation of routine immunization services, for mop up vaccination activities, and to quickly execute control measures in the event of an outbreak. The CDC also has provided critical support for measles eradication, which is being channeled to improve surveillance in key target countries; strengthen and expand the capabilities of national laboratory staff for diagnosis and virus isolation; and enhance the countries' ability to effectively prevent, respond, and appropriately investigate measles outbreaks.

Making quality vaccines available at affordable prices

The PAHO Revolving Fund for Vaccine Procurement was established by the Pan American Health Organization in 1979 to purchase vaccines, syringes and needles, and cold-chain equipment for Latin American and Caribbean countries. It was set up as a way to provide participating countries with the means of assuring a smooth and constant flow of vaccines and related supplies for the implementation of immunization programs. Through a system of bulk purchasing, the fund secures the supply of high quality vaccines for national immunization programs at affordable prices, while allowing for the orderly planning of immunization activities. Between 1979 and 1999, the value of vaccines purchased through the Fund grew from US\$ 2 million to US\$ 135 million.

One of the major benefits of the PAHO Revolving Fund for Vaccine Procurement has been keeping vaccines affordable. Studies carried out by PAHO in the early 1980s show that various manufacturers charge widely differing prices for the same vaccine. Competitive procurement through the Fund has kept price increases for vaccines under contract at a minimum. At the same time, PAHO's ongoing dialogue with vaccine manufacturers has allowed them to make long-term production plans and decisions on capital investments.

Another major benefit lies in the Fund's role as a means of delivering technical cooperation. Through it, the Organization has established a direct line of communication with health authorities that make decisions on immunization programs. Issues discussed include vaccine requests according to the size of the population, evidence of disease burden, universal versus high risk factors, financial sustainability, and cost-benefit aspects, particularly with new vaccines. The criteria for participating in the Fund also includes the availability of a specific line item within the national budget to cover recurrent costs



of vaccines and syringes; formulation of a comprehensive and achievable national plan of operations covering at least a 5-year period and conforming to general policies of the national immunization program; as well as the appointment of a national program manager with the authority to develop and implement the country's immunization program.

Countries also have benefited from the Fund's continuous supply of vaccines that meet PAHO/WHO biological standards, as well as from the assurance of vaccine availability on short notice, which is critical during disease outbreaks. Throughout 1999 and part of 2000, however, the Region experienced a shortage of some vaccines due to an increase in demand, such as that for the oral polio vaccine as part of the accelerated effort to eradicate the disease worldwide. This added demand has outstripped some of the vaccine manufacturers' installed capacity to produce the basic vaccines for the Expanded Program on Immunization. Moreover, some suppliers faced quality control problems that further exacerbated the shortage of vaccines in some countries.

The Fund is currently playing an instrumental role in the rapid introduction of new or additional vaccines at affordable prices, such as the vaccines against *Haemophilus influenzae* type B (Hib); measles, mumps, and rubella (MMR); hepatitis B; and yellow fever. If the introduction of new and additional vaccines is to be sustained, certain issues must be addressed, such as the development or expansion of the national epidemiological infrastructure and strategies that countries and the international community should follow to shorten the time between a vaccine's developmental research and its widespread and cost-effective utilization. The high cost of some vaccines has slowed down the introduction of important vaccines in the Region. The price of measles, mumps, and rubella vaccines has been dramatically cut as a direct result of economies of scale derived from bulk purchasing through the Revolving Fund. The widespread use of these three vaccines in routine immunization programs only occurred as recently as 1998. In 1996, only two countries were using Hib vaccine. However, by 2000, more than 90% of children born in the Americas will have this vaccine administered as part of their routine immunization schedule. In 1997, Hepatitis B vaccine use was limited to risk groups and risk areas, but now it is included in most regular immunization programs.

Sexually transmitted infections and HIV/AIDS

By the end of 1999, training in the syndromic management of sexually transmitted infections (STIs) had been completed, with all PAHO countries partic-

ipating. By request, training at the primary health care level was offered in Argentina, El Salvador, Haiti, and Paraguay. In addition, a Regional workshop held in April 1999 reviewed and endorsed second-generation STI surveillance guidelines. These will serve as a practical tool to improve STI surveillance in the Americas.

Second-generation HIV/AIDS surveillance and subregional networks

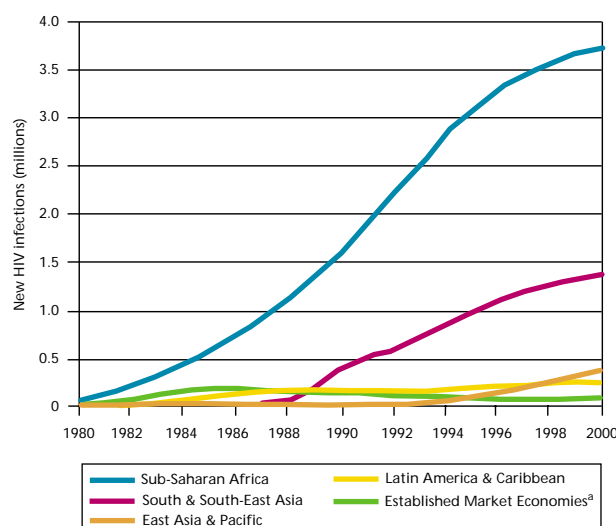
By the end of 1999 there were 1.6 million estimated cases of HIV infection in Latin America and the Caribbean, and close to one million in North America (see Figure 3). In terms of epidemiology, efforts concentrated on implementing second-generation HIV/AIDS surveillance. Behavioral components as well as STIs and molecular surveillance were added to the existing AIDS case reporting system and HIV sentinel surveillance.

During 1999, subregional networks were established in the Southern Cone, the Andean Area, and Central America, and plans for a Caribbean network were begun. The regional and subregional EpiNetworks address epidemiological issues by establishing common goals, producing a unified plan, and exchanging experiences among countries and other partners working on surveillance.

Joint planning

In 1999, PAHO played a leading role in coordinating the Integrated Planning in Support of the National Response to HIV/AIDS that is part of the Joint United Nations Programme on HIV/AIDS (UNAIDS). Because the participation of national governments in this process is so critical, PAHO worked closely with ministries of health and other key players such as international and bilateral agencies, universities, nongovernmental organizations, and community-based organizations to encourage their countries' commitment and cooperation. During 1999, integrated interagency planning took place in the Central American countries and in Chile, Colombia, Jamaica, and Mexico, and meetings of the Caribbean Task Force on HIV/AIDS were held in June 1999 in Antigua and in March 2000 in Trinidad to develop the Pan Caribbean Regional Strategic Plan for HIV/AIDS/STI, for 1999–2004.

FIGURE 3. Estimated annual number of new HIV infections, by region, 1980–2000.



^a Western Europe, North America, Australia, New Zealand, Japan.

Models of care

In 1999, the "building block framework" for HIV/AIDS comprehensive care was completed. This framework is another example of a successful joint planning effort, as it was developed in collaboration with WHO, UNAIDS, and the International Association of Physicians in AIDS Care (IAPAC). The framework depicts three scenarios for providing HIV/AIDS care, including providing antiretroviral drugs; it also outlines a series of steps to be followed, according to available resources and skills, to build a comprehensive care network for persons living with HIV/AIDS.

Mother-to-child transmission

During 1999, several countries began developing programs to reduce mother-to-child transmission of HIV. Belize, for example, has put in place a national strategy to control mother-to-child transmission and test pilot interventions, such as providing antiretroviral medication to infected mothers before wider country implementation. Jamaica has started a pilot project to assess the feasibility of preventing mother-to-child transmission of the virus. Honduras, Mexico, and several other Central and South American countries have requested technical guidance from the Organization in planning, developing, and executing similar interventions.

Social communication and HIV prevention

Countries must apply appropriate communication strategies to bring about public awareness of the HIV epidemic and to provide information and support to individuals who need to change risk behaviors. In 1999, PAHO's Director made a special commitment to renew regional efforts to promote social communication and marketing strategies that elicit behavioral changes for the adoption of safer sex practices, especially among young people. Prevention activities have continued to address the needs of vulnerable groups, including homosexual and bisexual men, women, commercial sex workers, and, especially, young people.

CAREC's response to HIV/AIDS

CAREC's Special Program on STIs is carried out in close collaboration with the PAHO/WHO Country Offices and with other agencies such as the University

The Honduran Experience

One of the countries most seriously affected by the HIV epidemic is Honduras. Studies in the San Pedro Sula area show HIV prevalence rates of almost 4% among pregnant women. However, during the last 15 years notable progress has been made in developing expertise in all areas related to HIV/AIDS prevention and control and in preparing multisectoral strategic plans to guide the national response.

During 1999, Honduras spearheaded the coordination of the Central American Congress on Sexually Transmitted Diseases and AIDS. Honduras has actively participated in the Horizontal Technical Cooperation Group, a group of directors of national AIDS programs who have come together to promote technical cooperation among countries, as well as in many multicountry activities with PAHO, UNAIDS, the Central American Project for Action on AIDS (PASCA) and other agencies and institutions; these activities have allowed the country to share its experiences in various forums. These activities also have served to solidify technical cooperation among countries. Nonetheless, Honduras must continue strengthening its efforts to address the country's growing HIV/AIDS epidemic, especially through activities directed to young people, populations on the move, ethnic minorities, and women.

of the West Indies, CARICOM, and the Caribbean Regional Network of People with HIV/AIDS, as well as five international financing partners.

In 1999, the key achievements and impact of CAREC's work included increased political commitment to fight HIV/AIDS in several Caribbean countries, with active support for public health interventions and a larger budget for national HIV/AIDS programs. Several countries have put in practice policies on an expanded response to HIV, syndromic management of STIs, and reduction of mother-to-child HIV transmission. Alliances with national and subregional media houses were strengthened as a way to develop public education and information programs cost-effectively. At the same time, vulnerable groups such as young people and sex workers were reached by participatory, peer-based, and other information and skills-building interventions that fostered safe sexual behavior.

Emerging and reemerging diseases

Although communicable diseases continue to be a major source of illness and death in developing countries, industrialized countries also are at risk from

many new and reemerging diseases. During 1999 alone, the Region was affected by unexpected outbreaks of hantavirus pulmonary syndrome, yellow fever, cholera, dengue hemorrhagic fever, leptospirosis, West Nile encephalitis, and *Escherichia coli* 157 H7. Following Hurricane Mitch, a state of alert was declared in Central America for outbreak detection and response.

PAHO's three-pronged approach to deal with these threats is to strengthen national surveillance of emerging and reemerging infectious diseases or syndromes, including related laboratory capacity and electronic means of notification; to detect outbreaks and train multidisciplinary teams to respond to outbreaks; and to monitor the status of antimicrobial resistance and follow with evidence-based interventions. Subregional surveillance networks put in place for the Southern Cone and the Amazon Basin countries constitute powerful mechanisms to acquire laboratory-based knowledge of infectious diseases, institute the use of syndromic reporting, and collaborate in standardizing quality control protocols.

In Central America, the Organization sponsored training for multidisciplinary outbreak response teams. As a result, more than 10 field investigations of outbreaks were conducted in 1999.

Elimination and eradication of diseases

The elimination of leprosy as a public health problem has progressed well in the Americas—only Brazil, Paraguay, and Suriname have yet to reach this goal.

The population at risk for onchocerciasis has been much more accurately estimated through standardized epidemiological evaluations jointly developed by PAHO and its partners. In the six endemic countries of the Americas—Brazil, Colombia, Ecuador, Guatemala, Mexico, and Venezuela—the at-risk population was dramatically reduced from 4,700,000 in 1995 to 659,618 in 1999. Since treatment with ivermectin is the backbone of the onchocerciasis elimination strategy, this drop will translate into considerable savings in drug costs. Evidence suggests that transmission may have been interrupted in some areas of the Americas, such as the focus in Mexico.

Activities also are under way to eliminate Bancroftian filariasis. The Organization prepared a preliminary Regional Plan of Action in collaboration with CDC, and both the Dominican Republic and Guyana are considering a multidisease approach that incorporates intestinal helminth control into the plan to eliminate Bancroftian filariasis.

The persistence of Chagas' disease in some South American countries is attributed to poor housing conditions that favor intimate contact between the vector and the human host. *Triatoma infestans* is the main vector of *Try-*

panosoma cruzi in the Southern Cone countries. Its elimination, the crux of the strategy to reduce the burden of this disease, is based on spraying, housing modifications, and public education. Using these measures, Uruguay interrupted the vectorial transmission of *T. cruzi* in 1997; Chile did so in 1999.

Venezuela: Health Care in Indigenous Populations

In recent years, PASB has supported the Indigenous Communities Health Care Program (ATSAI) in the state of Bolívar, Venezuela, which strives to improve the living conditions of communities that are beyond the reach of the official health system. Because these communities are scattered in remote locations, they cannot receive primary health care. Hence, ATSAI aims to provide them with basic medical care through a program of health team visits. The teams are made up of physicians, dentists, and health workers and assistants who have been trained in the control of endemic diseases, especially malaria, and who write up clinical histories of the community members and offer general medical consultations. The program also includes well-baby checkups; pregnancy monitoring and the detection of high-risk cases; screening for cervical cancer; systematic immunizations; administering of several tests (blood smears, fecal samples, sputum smear microscopy, biopsy for leishmaniasis); and other necessary functions, including emergency medical care.

In the course of their visits to 303 indigenous communities, ATSAI teams regularly perform epidemiological surveillance and vector control for the Malaria Service. These activities include active searching for febrile cases; taking of blood samples from patients; examination and diagnosis; treatment; spraying of dwellings with residual-action insecticides; and, when necessary, misting with appropriate insecticides.

Between 1995 and 1999, the malaria annual parasite index (API) in the indigenous communities fell from 230 per 1,000 population to 19 per 1,000, and the number of cases dropped from 2,865 in 1995 to 290 in 1999. The parasite formula has remained the same throughout the project, from 1995 through 1999, with *Plasmodium vivax* being the predominant species. During 1998, more than 55,000 medical consultations and more than 15,000 dental consultations were conducted, and the following samples were examined: more than 15,000 slides, resulting in the diagnosis of 913 cases of malaria; 269 sputum smears, of which 15 were positive for tuberculosis; 67 skin biopsies, resulting in the detection of 29 cases of leishmaniasis; and more than 13,000 fecal samples. For the control of vector-borne diseases, a total of 26,749 dwellings were sprayed.

In addition to the program of direct health care for the indigenous community, a pilot project was carried out for improving the sanitary condition of homes. All this was done using indigenous technology and labor, as well as materials native to the locale. The success of this project shows that it is possible to provide medical care for small, widely scattered indigenous populations in remote areas that are difficult to reach.

Integrated management of childhood illnesses

The strategic and programmatic orientations (SPOs) for 1999–2002 call for the Bureau to focus its cooperation program along priority areas. One of these, the Strategy for the Integrated Management of Childhood Illnesses (IMCI), targets the groups of diseases and condition that have been dubbed “prevalent childhood illnesses,”¹ which are responsible for most of the deaths among the Region’s children. In response, PAHO’s Executive Committee voted unanimously to support the strategy at its meeting in June 1999. In September, the 41st Meeting of the Directing Council adopted Resolution CD41.R5, which calls on Member States to implement IMCI and move forward with the process so that the entire population in the Americas can soon benefit from this strategy. The highest levels in the respective governments were urged to support the strategy. The subject was presented at the Meeting of Presidents’ Wives held in Ottawa, Canada, as a way to elicit interest in getting the strategy adopted and seeing that it is applied promptly to the most vulnerable population groups. See Figure 4 for additional details on deaths from prevalent childhood diseases.

The Bureau also launched the initiative “Healthy Children: The Goal for 2002,” which will rely on IMCI to prevent 100,000 deaths in children under 5 years of age by the year 2002. This achievement would represent a 40% reduction in childhood mortality, which is one of the goals envisaged in the SPOs.

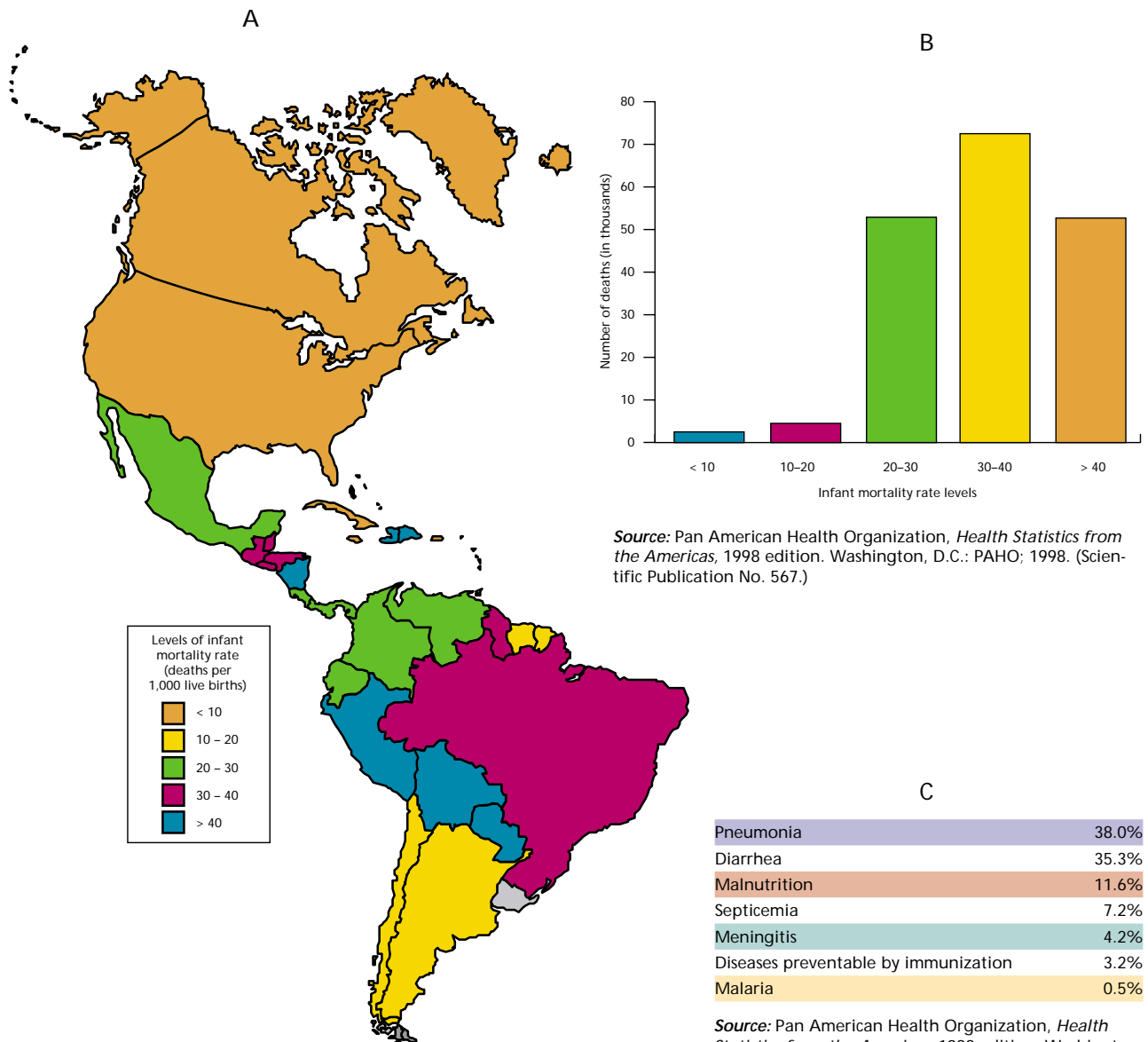
Initiatives along these lines were launched in the Region’s countries, especially in those that have high rates of infant mortality, where reductions can make a significant contribution toward attainment of the goal. IMCI was introduced in El Salvador during 1999, and in Bolivia, Brazil, the Dominican Republic, Honduras, and Paraguay at the beginning of 2000, confirming the countries’ commitment to the goals proposed by PAHO and WHO. The strategy has been adopted at the national level in 19 countries of the Americas, especially in areas with high rates of infant mortality. It also promoted efforts to identify localities where the strategy could produce results most quickly in terms of reducing the mortality gap between population groups and contributing to greater equity in child health.

PASB continued to support the countries in the training of human resources. Already there are more than 10,000 health workers who can apply the strategy. Regional support was also given for activities designed to encourage universities and schools of medicine, nursing, and nutrition to include the teaching of IMCI in their undergraduate and graduate courses.

During 1999, particular progress was made in developing IMCI’s community component within the SPO framework of health promotion and protection.

¹ Prevalent childhood illnesses include acute respiratory infections, diarrheal diseases, diseases preventable by immunization, nutritional deficiencies, and in some areas, malaria.

FIGURE 4. Countries grouped according to infant mortality levels (A); number of deaths from causes targeted by IMCI in countries with more than 10,000 births per year, grouped by level of infant mortality (B); and distribution of those deaths by causes covered under IMCI (C), Region of the Americas, 1995–2000.



Source: Pan American Health Organization, *Health Statistics from the Americas*, 1998 edition. Washington, D.C.: PAHO; 1998. (Scientific Publication No. 567.)

Source: Pan American Health Organization. *Health Situation in the Americas: Basic Health Indicators 1999*. Washington, D.C.: PAHO; 1999.

The Bureau fostered intersectoral coordination for strengthening the capacity of families and the community to take better care of their children, apply preventive measures, and promote child and family health. In addition, it disseminated the strategy's basic elements and technical tools so that health services and their staff would be better able to apply the strategy effectively within the SPO of health systems and services development. In this regard, the Region served as a world test-bed for the methodology proposed for evaluating IMCI at the national level.

Noncommunicable diseases

Deaths from noncommunicable diseases represent almost two-thirds of the Region's overall mortality. Noting the growing importance of those diseases and their relevance for the international political agenda, the Organization has advocated policies that would foster integrated action on those diseases, institutionalize surveillance and evaluation systems for decision-making, implement cost-effective preventive interventions for reducing risk factors, and improve the quality of care for widespread health problems.

Cervical Cancer

Prevention and control of cervical cancer was a top priority during 1999. This is a highly preventable condition that affects disproportionate numbers of low-income women in the Region. In Latin America and the Caribbean, a woman dies from cervical cancer every 15 minutes. Health care providers see most of these women only at a late stage when little can be done to save their lives; moreover, cancer treatment may often be unavailable.

In 1999, the Bill and Melinda Gates Foundation awarded a five-year, US\$ 50 million grant to the Alliance for Cervical Cancer Prevention, a group of five international organizations, including PAHO. The Organization will lead the work with other partners in the Americas to assess innovative approaches to screening and treatment, improve service delivery systems, ensure that community perspectives and needs are incorporated into program design, and heighten awareness of cervical cancer and effective prevention strategies.

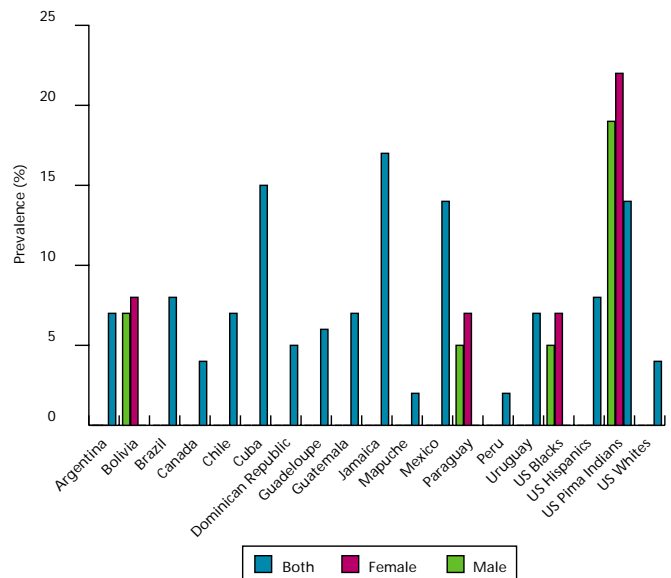
This initiative will build on ongoing efforts to improve women's awareness of the need for cervical cancer screening and to upgrade the quality of laboratory diagnosis. PAHO has organized a Pan American cytology network (Red-PAC) to provide external quality assurance. Thirty-eight cytology laboratories



from Chile, Costa Rica, Ecuador, Mexico, and Venezuela, which annually process more than one million samples, benefit from this program; other countries will soon be joining them. Two institutions that collaborated with the Organization in this scheme were instrumental in its success—the School of Medicine of the University of Chile, which served as the international reference laboratory, and Mexico's Instituto Nacional de Diagnóstico y Referencia Epidemiológica (INDRE), which supported the sharing of experiences and fostered consensus for standards of performance.

PAHO supported several studies to assess women's attitudes and perceptions towards prevention and screening services and to identify social constrictions surrounding cervical cancer. These studies are helping countries to develop strategies to reach middle-aged women.

FIGURE 5. Prevalence (%) of diabetes in the adult population, by gender, Region of the Americas.



Diabetes mellitus

As the countries' health profile has changed, diabetes has gathered importance as a health concern. As can be seen in Figure 5, the prevalence rates for the disease in the Americas varies greatly from country to country, with highs of 22.9% for women among the Pima Indians of Arizona (USA) in 1978 and of 17.9% for both sexes in Jamaica in 1995. In 1999, as a way to reduce the economic and human suffering burden posed by the disease, PAHO launched the Diabetes Initiative for the Americas. And, because well-educated patients are the cornerstone of effective disease management, one of the initiative's main goals is to improve the knowledge of the disease among diabetes patients in Latin America and the Caribbean.

The CARMEN project

The project known as CARMEN aims to prevent and reduce the prevalence of risk factors for noncommunicable diseases through an integrated approach with a gender and equity perspective at the community level. The CARMEN network has just celebrated its second birthday with Canada, Chile, Costa Rica, Cuba, and Puerto Rico as full members. Argentina, Brazil, Colombia, and Uruguay are preparing their national protocols and will soon join.



Through the CARMEN project, Chile and Costa Rica introduced noncommunicable disease prevention into their policy agenda and created a favorable climate to design policies and to apply them with the support of various institutions and communities. CARMEN also has served to promote clinical prevention by training primary health care workers so that they can provide counseling on preventing and controlling noncommunicable disease risk factors. In this respect, CARMEN has contributed to reorient the present service structure towards a comprehensive approach.

All countries implementing CARMEN have community-based interventions to reduce the prevalence of a sedentary lifestyle, smoking, unhealthy diets, and hypertension. In the community of Valparaíso, Chile, a demonstration site for CARMEN, the population participates in moderate physical activity while outreach activities improve the detection of persons with hypertension.

In Puerto Rico, shopping outlets have started to provide consumer education related to fat consumption. In Costa Rica and Cuba, CARMEN has enlisted schools and factories in modifying risk behaviors related to tobacco, nutrition, and physical activity. All CARMEN countries have initiated community-based smoking cessation programs.

Violence

Obtaining reliable and timely information on intentional injuries is a basic ingredient for establishing sensible policies to prevent violence. PAHO has cooperated in designing surveillance systems for countries where the problem is greatest. Colombia, Ecuador, El Salvador, Guatemala, Honduras, and Nicaragua have taken decisive steps: first, to create intersectoral partnerships that support the various institutions involved in producing data and, second, to create the capacity and infrastructure for surveillance.

The Example of Quito, Ecuador

The mayor of Quito supported the creation of a permanent technical committee on information of violent acts. In 1999, a pilot test produced information about injuries treated at health centers, domestic violence cases, and crimes against property reported to the police.

In 1999, Colombia and Ecuador signed a technical cooperation agreement. As a result, officials from Ecuador visited prevention and surveillance programs in Cali and Bogotá and, later, experts from these cities went to Quito to give advice and support local initiatives.

In 1999, several of these countries began to produce accurate information. The Ministries of Health and of Security of Honduras for the first time began to integrate their respective information systems and, as a result, they estimated a more accurate and realistic homicide rate for Honduras. With 45 homicides per 100,000 inhabitants, this country is the third most violent in the Americas, after Colombia and El Salvador. Better information has in turn triggered a broader and more intense commitment to prevent violence.

Veterinary public health

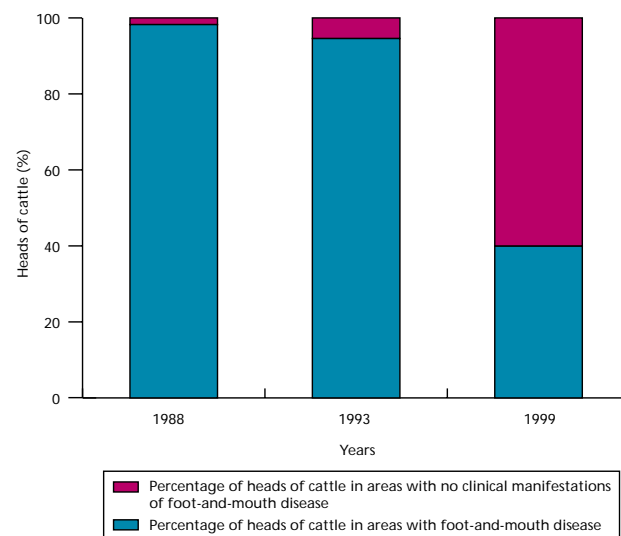
XI Inter-American Meeting, at the Ministerial Level, on Animal Health

The XI Inter-American Meeting, at the Ministerial Level, on Animal Health (RIMSA XI), the only forum in which the health and agricultural sectors collaborate at the highest political level, was held in April 1999 at PAHO Headquarters. On this occasion RIMSA's name was changed to Inter-American Meeting at the Ministerial Level on Health and Agriculture and congratulations were extended to the Bureau on the fiftieth anniversary of the Program of Veterinary Public Health.

Foot-and-mouth disease

Thanks to the countries' political will, the strategy of joint public- and private-sector action has led to several major achievements in the eradication of foot-and-mouth disease. The countries in North America, Central America, and the Caribbean are now free of the disease, and in South America it has been eliminated in Chile and Uruguay, in the Patagonian region of Argentina, and along Colombia's Atlantic coast. The International Office of Epizootics is currently considering Argentina's application to be recognized as a disease-free

FIGURE 6. Percentage of heads of cattle in areas with no clinical manifestations of foot-and-mouth disease and percentage of heads of cattle in areas with foot-and-mouth disease, South America 1988, 1993, and 1999.



Source: Pan American Foot-and-Mouth Disease Center (PANAFTOSA).

country without vaccination. It is also considering recognition of the central and western states of Brazil as disease-free with vaccination—the same status that was previously granted to the states of Rio Grande do Sul and Santa Catarina and also to Paraguay.

To date, the areas of South America that have not reported any cases of foot-and-mouth disease for two or more years cover a land area of 7.2 million km² (41% of the total), which has 2.9 million livestock-raising establishments (60%) and 171.5 million head of cattle (60%) (Figure 6).

As progress is being made in the eradication of foot-and-mouth disease, PASB continues to cooperate with the countries, through the Pan American Foot-and-Mouth Disease Center (PANAFTOSA), on strengthening their epidemiological surveillance systems, their response to public health emergencies, and risk analysis procedures, so that they can maintain and expand their disease-free areas. Special emphasis has been placed on strengthening comprehensive animal health programs in areas near international borders, diagnostic and reference services, and the quality control of foot-and-mouth-disease vaccine.

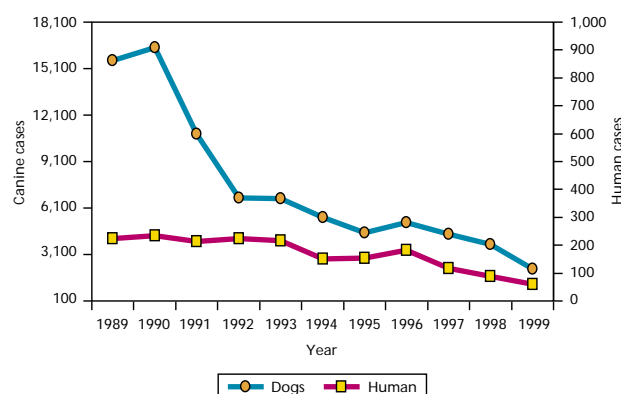
Rabies

During the last decade the countries made an all-out effort to attain the final objective of the regional program for the elimination of human cases of rabies transmitted by dogs, which are the main reservoir of the disease in Latin America. The following figures attest to the disease's steady downward trend.

In 1999, 59 human deaths due to rabies were reported—a reduction of 77% relative to the 255 deaths reported in 1989 and 33% vis-à-vis the figure of 88 in 1998. A similar effect has been observed in the dynamics of canine rabies: the 2,155 cases reported in 1999 represented a reduction of 86% relative to the 15,610 cases in 1989 and a 42% drop with respect to the 3,736 reported in 1998 (see Figure 7). In 1999, 72% of the human cases were attributed to canine transmission, but in recent years bat-transmitted rabies has taken on increasing importance.

Participants at the Seventh Meeting of Directors of National Rabies Programs in the Americas, convened by the Director of the Bureau in December 1998, evaluated the subregional and national programs and defined a set of strategic commitments relating essen-

FIGURE 7. Cases of human and canine rabies, Region of the Americas, 1989 to 1999.



Source: Pan American Foot-and-Mouth Disease Center (PANAFTOSA).

tially to epidemiological surveillance and the risk analysis necessary for the final stage of elimination of the disease. The Bureau also provided technical advisory services on standardizing the use of monoclonal antibodies for the characterization of the rabies virus in the Latin American and Caribbean countries.

Brucellosis and bovine tuberculosis

Since PANAFTOSA took on cooperation in the area of zoonoses in May 1998, the Center has supported the national sanitary services for the control of brucellosis and bovine tuberculosis, two diseases that are serious economic and public health problems in the countries. See Figure 8 for the distribution of *Brucella abortus* in the Region of the Americas. Its work has included development of a survey of the programs devoted to combating brucellosis and tuberculosis due to *Mycobacterium bovis* in 24 countries. The results of the survey have helped to identify priority lines of international cooperation and technical advisory services geared basically to promoting the organization of programs for zoonosis control and eradication. These programs will be executed using a strategy of joint action by the health and agriculture sectors.

FIGURE 8. Distribution of *Brucella abortus* in animal species according to the most recent identification in surveyed countries, Region of the Americas, 1999.



Source: Pan American Foot-and-Mouth Disease Center (PANAFTOSA).

Epidemiological surveillance of equine encephalitides and other emerging zoonoses

Equine encephalitides

Every week, PANAFTOSA receives reports from Brazil, Colombia, Ecuador, Honduras, Mexico, Panama, and Venezuela of outbreaks of laboratory-confirmed syndromes compatible with the equine encephalitides and other emerging

zoonoses. A review of the information available during the 1997–1998 biennium revealed low viral activity of equine encephalitides.

Bubonic plague

During 1998–1999, the Bureau continued to cooperate with Peru and Ecuador to break the cycle of transmission of bubonic plague from rodents to humans through community intervention aimed at reducing rodent infestations in dwellings. In addition, a laboratory-supported surveillance system was created, and guidelines were prepared on the treatment of human cases.

Leptospirosis

The incidence of leptospirosis increased in Central America in the areas affected by Hurricane Mitch. Technical cooperation activities focused on the utilization and improvement of diagnostic capability as part of epidemiological surveillance, and programs were implemented for the control and prevention of this zoonosis.

Primate conservation and development of human vaccines

The Peruvian Primatology Project has been operating for 25 years with technical cooperation provided by PASB. It is viewed as a model project for the conservation of endangered neotropical primate species by reproducing these animals in captivity and raising them on islands. The periodic, controlled harvest of these primates has provided animals for the development of human vaccines against hepatitis A and B.



Food protection

During 1999, 22 countries submitted reports to the regional system for the epidemiological surveillance of food-borne diseases. Since 1995, information has been collected on 3,577 outbreaks affecting 113,349 persons and causing 210 deaths, which gives the Region a database that allows for a better understanding of the epidemiological profile of food-borne diseases and to orient programs for preventing them. This information also provides an important foundation for applying approaches based on risk

analysis. Most of the countries still need to improve their reporting systems so that these systems can become an important component of PASB technical cooperation.

The information that flows through a regional electronic network makes it possible to know about the various species of *Salmonella* and the enterotoxin *Staphylococcus aureus*, which is responsible for 69% of the reported outbreaks caused by bacterial agents. Food of animal origin is associated with almost 60% of these outbreaks of bacterial origin, and 41% of them occur in homes (Figure 9).

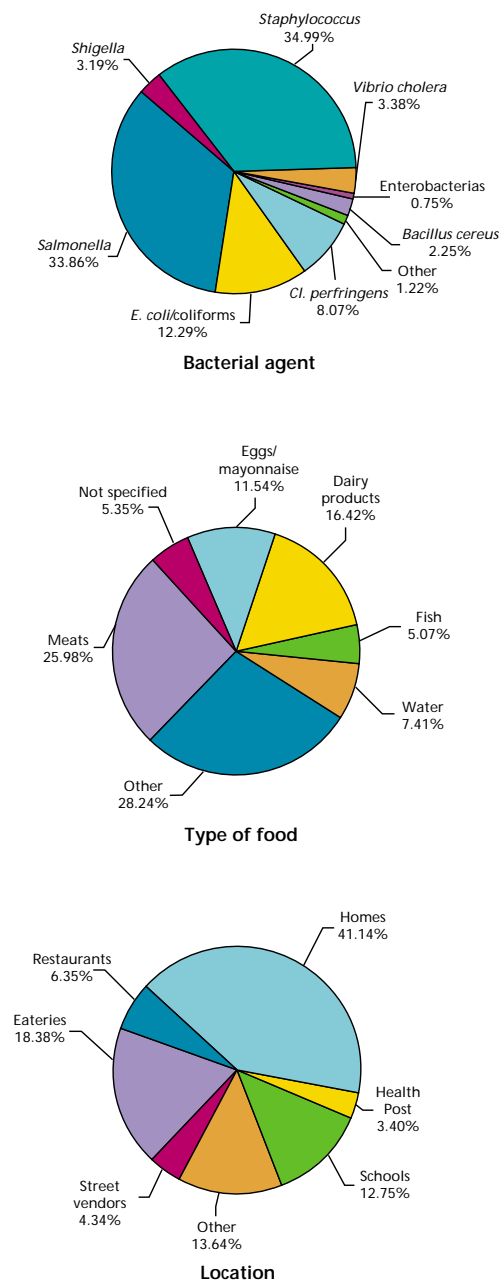
To encourage technical cooperation among countries, the Bureau continued to maintain its registry of laboratories in the Inter-American Network of Food Analysis Laboratories created in 1997. At the end of 1999, 39 laboratories in 19 countries of the Region were registered, and Uruguay and Venezuela had each taken steps to create a national laboratory network.

In response to the growing demand for methods to detect food contaminants, 80 technicians from laboratories in the Region were given training in rapid microbiological methods. Also during the year, 19 laboratories in 11 countries participated in an interlaboratory quality control test for chemical contaminants. The countries that took part in this exercise were Argentina, Barbados, Chile, Colombia, Costa Rica, the Dominican Republic, Jamaica, Panama, Paraguay, Trinidad and Tobago, and Uruguay.

In support of subregional initiatives to integrate and globalize food markets, an information system was incorporated into the management of food regulations in Argentina, Chile, Guatemala, Mexico, Paraguay, and Uruguay. This measure will make it easier to update and standardize food regulations in the Region. There was also collaboration in this area with FAO, Inter-American Institute for Cooperation in Agriculture, and the United States Department of Agriculture and Food and Drug Administration, and assistance was given to the countries of the Caribbean and to the Andean Community in the organization and strengthening of national committees on the Codex Alimentarius. Seminar-workshops on this subject were held in Puerto Rico and Colombia.

Work continued on the development of a project for modernizing food inspection and control systems, with training given to 445 officials from Argentina, Brazil, Mexico, Paraguay,

FIGURE 9. Outbreaks of food-borne diseases, by bacterial agent, type of food, and location, Latin America and the Caribbean, 1995–1999.



Source: Pan American Institute for Food Protection and Zoonoses (INPPAZ).

Peru, Uruguay, and the countries of the English-speaking Caribbean. In addition, to promote the reorientation of health professionals and the continuing education of health workers, standardized training programs were developed on the application of Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP), and Sanitation Standard Operating Procedures (SSOP), which have become institutionalized in universities in Argentina, Mexico, and Peru. In addition, support was given to adoption of the IMCI strategy through the compilation of a bibliography on food-borne diseases for use in continuing education for medical personnel in the countries.

CAREC's services to the English-speaking Caribbean countries

In 1999, the Caribbean Epidemiology Center (CAREC) marked its 25th year of operation, and in 2000, its 25th anniversary of public health service to member countries. In response to its members' evolving needs, CAREC has grown from a fairly focused technical institution with 18 members and a staff of 40, to the Caribbean's major public health agency, with a widening range of health promotion and disease prevention programs. Currently, CAREC has 21 member countries, a staff of 120, an annual budget of US\$ 5 million, and 12 major financial partners. Partnership has been and continues to be a valuable strategy for the Center, as can be seen by the list of financial and other partners in the box opposite.

During the 1990s, the health situation in the Caribbean became increasingly complex, both in terms of the emergence of new health problems, diseases, and risks, and of sweeping changes in the health sector, consequent upon widespread reforms. A major plus was that the subregion maintained its polio- and measles-free status. Nevertheless, emerging and reemerging diseases of concern included dengue and dengue hemorrhagic fever, malaria clusters in previously malaria-free countries, expanding tuberculosis, food- and waterborne diseases, and increases in HIV/AIDS. Violent acts also have become more frequent and have gained in importance as a cause of death during the last decade, with an adverse impact on the health of local populations and on tourism-dependent economies. Mortality rates due to diabetes also rose in the 1990s, an increase that is linked to the growing epidemic of overweight and obesity, high-fat diets, and more sedentary lifestyles.



CAREC: Core Structure and Partners

Core Structure

Member States
 PAHO/WHO
 Caribbean Community (CARICOM)
 University of the West Indies
 Caribbean Health Research Council
 Staff

Financial Partners

Caribbean Action for Sustainable Development
 Caribbean Hotel Association
 Centers for Disease Control and Prevention (USA)
 Canadian International Development Agency (Canada)
 Department for International Development (UK)
 Emory University (USA)
 French Technical Cooperation
 German Technical Cooperation Agency
 Inter-American Development Bank
 International Development Research Center (Canada)
 National Institutes of Health (USA)
 Netherlands Leprosy Relief Association
 Walter Reed Army Institute of Research (USA)
 World Bank

Other Partners

Association of Caribbean States
 Association of Trinidad and Tobago Insurance Companies
 Caribbean College of Family Physicians
 Caribbean Development Bank
 Caribbean News Agency/Caribbean Broadcasting Union
 Caribbean Forum of ACP States
 Caribbean Public Health Association
 Communicable Disease Surveillance Center
 Caribbean Environmental Health Institute
 Caribbean Food and Nutrition Institute
 Center for Regional Epidemiology (France)
 Caribbean Regional Drug Testing Laboratory
 Caribbean Regional Network of People with HIV/AIDS
 Caribbean Tourism Association
 Economic Commission for Latin America and the Caribbean
 European Union
 Laboratory Center for Disease Control (Canada)
 Medical Research Council (Trinidad and Tobago)
 Regional Initiative for the Prevention and Control of HIV/AIDS and
 Other Sexually Transmitted Infections in Latin America and the
 Caribbean
 United Nations

In response to these changes in the health situation, in 1999 CAREC modified its strategies to make greater use of the health promotion approach, including advocacy to governments and to private sector partners such as the tourism and insurance industries. Meanwhile, it continued to provide in-country assistance with the management of outbreak and emergency situations.

Building Caribbean surveillance systems

As part of an agreed partnership strategy, the Center and its 21 member countries operate a subregional Caribbean surveillance system (CARISURV), as a way to jointly strengthen national epidemiologic and laboratory capacities. Protocols and procedures are agreed upon at approximately annual meetings of national epidemiologists and laboratory directors. In 1999, country capacity in surveillance was strengthened through the development of a new Caribbean Surveillance Manual to be put into effect in 2000 as a foundation piece for CARISURV. Similarly, the development of a new version of the mortality surveillance system, MORTBASE, which includes the International Classification of Diseases, 10th revision, will enhance health monitoring capacity.

Tourism, health, and resource conservation

The Caribbean is the most tourism-dependent region in the world. With nearly 30 million arrivals in 1998, tourism provided one of every five jobs in the Caribbean. It generated \$33 billion in commercial activity, and produced 31% of the gross domestic product and most of the hard currency earnings.

The Caribbean Tourism, Health and Resource Conservation Project is a joint venture between PAHO/CAREC and the Caribbean Hotel Association/Caribbean Alliance on Sustainable Tourism (CAST). It aims to develop and establish Caribbean-wide standards and systems designed to ensure healthy, safe, and environmentally sensitive products and services, and to implement marketing and sustainability strategies. This project is initially being implemented in Trinidad and Tobago, Barbados, Jamaica, and Bahamas.

The project illustrated many aspects of a health promotion approach: advocacy to sensitize hotel and tourism industry leaders and to enlist their commitment for the joint programs of "clean" and "green" concerns in relation to this vital industry; the development of health settings such as "healthy hotels" as a concept and reality; and the building of alliances with national, subregional, and international agencies in pursuit of the same objective.

Supporting the Delivery of Technical Cooperation: The Secretariat

"We have an excellent staff. . . . relatively few to deal with the major challenges that must face an organization with mandates like ours, but I can attest to the remarkable capacity to respond, often under circumstances that are not optimum."

George A. O. Alleyne



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hen he began his second term as Director in February 1999, Dr. George Alleyne reaffirmed his commitment to the principles of equity and Pan-Americanism in the pursuit of health for all and outlined various new managerial approaches to increase the Bureau's effectiveness and efficiency. The Special Program on Vaccines and Immunization was converted into a technical division (HVP), and the new Special Program for

Health Analysis (SHA) was created to bolster the function of monitoring health trends, especially the development of better tools for measuring health inequities and for maintaining databases on health situations and trends. The technological and managerial functions in the Information Systems Program were separated and each function was incorporated into a pertinent program within the Division of Health Systems and Services Development.

As a way to sharpen PASB's strategic focus, the Director tightened the coordination of all planning and programming functions. Technical resources in the Office of Analysis and Strategic Planning were expanded to enhance institutional development and evaluation. The former seeks to ensure that the Organization's structure, functions, and administrative processes conform to an established strategic technical and managerial vision. The evaluation component analyzes trends revealed by a wide range of assessments conducted throughout the Organization, which then are integrated into the planning process.

Strengthening health collaboration in the Americas

A shared agenda for health cooperation

Dr. Alleyne has successfully advocated a shared agenda for health in the Americas with other institutions. He persuaded IDB and the World Bank that relying on a collaborative approach in health development would be more likely to address the Region's health priorities more effectively, while maximizing the efforts and investments of all agencies concerned. During 1999, an interagency coordination group completed a shared agenda of collabo-

rative action in four leadership areas: national health accounts, pharmaceuticals, disease surveillance, and the environment. This agenda was formally signed by the three agencies in June 2000.

Supporting inter-American summits

PASB continued to play an important role in coordinating health issues at the Summits of the Americas, including the 1994 Summit's (Miami, Florida, USA) initiative on Equitable Access to Basic Health Services and the 1998 Summit's (Santiago, Chile) initiative on Health Technologies Linking the Americas.

PASB prepared a Regional progress report on the achievement of Summit health goals, which was discussed at different forums, including the OAS General Assembly (Guatemala, June 1999). The Bureau also participated in meetings of the Summit Implementation Review Group, and has begun to advocate the inclusion of health as a major topic in the 3rd Summit of the Americas, scheduled to take place in Canada in 2001. The Secretariat keeps the ministries of health abreast of developments regarding this summit.

PASB supported the 1999 First Ladies Conference, held in Ottawa, Canada, and presented progress reports on measles eradication, decreases in maternal mortality, health promoting schools, reduction of violence against women, and the Integrated Management of Childhood Illnesses (IMCI). The Office of External Relations gave a keynote presentation on the status of women's health in the Americas at the conference.

The Bureau also took part in the Ibero-American Health Ministerial Conference (Havana, October 1999), highlighting child and adolescent health,

The 41st Meeting of the Directing Council

For the first time in 21 years and the second time in its history, the Directing Council held its meeting away from PASB Headquarters in Washington, D.C.: the 41st Meeting of the Directing Council was held in San Juan, Puerto Rico in September 1999. Close collaboration between the Secretariat and the Government of Puerto Rico in planning the meeting resulted in a successful and productive work week. During the meeting, the Member Countries approved the budget for the 2000–2001 financial period; adopted amendments to the Constitution of the Pan American Health Organization regarding the Director's term of office and the interval between Sanitary Conferences, which will take effect in 2002; and considered a wide range of health challenges affecting the countries of the Americas.

reproductive health, the health of indigenous peoples, communicable diseases, and health as an integral part of development and equity.

Supporting cooperation at the subregional level

In 1999, PASB monitored progress and supported health-related activities of the four major subregional integration frameworks in the Americas—CARICOM, SICA, the Andean Integration System, and MERCOSUR.

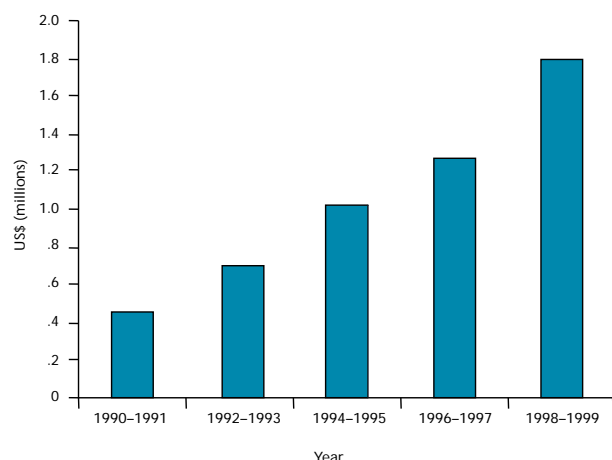
The Caribbean. The Caribbean Program Coordination (CPC) office collaborated with CARICOM to complete and publish *New Vision for the Caribbean Cooperation in Health*, which covers phase II of the Caribbean Cooperation in Health Initiative. In addition, the CPC supported a workshop that focused on the challenges of implementing health sector reforms in the smaller Eastern Caribbean countries. PAHO centers in the Caribbean—CAREC and CFNI—as well as the CPC, are effectively collaborating with CARICOM in the implementation and monitoring of this phase of the initiative.

Central America. The newly appointed Technical Secretary to SICA's Social Integration Council visited Headquarters to learn about the various forms of technical cooperation offered by the Bureau. In addition, PASB assisted the Central American countries most affected by Hurricane Mitch in their preparations for the consultative group meeting, held in Stockholm in May 1999, to mobilize rehabilitation and reconstruction resources for Central America.

The Andean Subregion. The Bureau cooperated with the Governments of Ecuador and Peru in the preparation of joint health projects to be submitted to the consultative group that met in May 2000 in New Orleans, Louisiana. The Bureau also supported the publication of the official bulletin of the Hipólito Unanue Agreement.

The Southern Cone. PASB supported Paraguay and Uruguay in the fulfillment of their responsibilities as Secretariat *pro tempore* of the Working Subgroup No. 11-Health (SGT-11-Salud-MERCOSUR). The Bureau conducted a workshop on negotiation techniques for the Paraguayan team and assisted Uruguay in designing five projects, two of which were approved by the Common Market Group.

FIGURE 1. Increase in funds allocated for technical cooperation among countries between 1990 and 1999.



Source: PAHO/WHO, Office of the Assistant Director, Biennial Evaluations, 1998-1999.

Supporting technical cooperation among countries

Since its inception, PASB has promoted disease prevention measures in and among the countries of the Americas and has entered into a wide range of health-related agreements with international institutions and cooperation agencies. The Bureau's work has involved nearly a century of building Regional solidarity to improve health for all and to develop health systems.

In the 1988-1989 biennium, PAHO established financing mechanisms for the promotion, support, and monitoring of technical cooperation among countries (TCC) projects. As shown in Figure 1, the use of TCC funds by the countries has grown steadily since 1990. For the 1998-1999 biennium, nearly US\$ 1.8 million were allotted for over 75 TCC projects, with nearly all countries participating in at least one such project.

Administrative practices

During 1999, PASB continued to improve its operating efficiency by fine-tuning managerial practices, introducing cost-saving measures, and maximizing its use of technology, particularly the Internet. New human resource management approaches increased accountability and facilitated timelier, high standard work production. Other highlights of administrative improvements are noted below.

- The Government of Brazil expressed its satisfaction with PASB's Department of Procurement's (APO) services by requesting that it assist the Ministry of Health in procuring critical public health supplies. A new revolving fund for strategic public health supplies such as certain insecticides and drugs for AIDS, leishmaniasis, malaria, and tuberculosis was established and is being tested in Brazil. The funds managed by the Bureau for reimbursable procurement of vaccines and other products on behalf of Mem-

ber States should surpass by more than 50% the US\$ 178 million managed in 1999.

- Translation software developed by PASB has increased the output of formal translation services by 10% since 1998. This has, in turn, contributed to the greater use and more effective sharing of documents by technical programs at Headquarters and in the field.
- New electronic procedures for procurement and for accounting transactions with other institutions and banks have greatly reduced the time needed to perform these functions.
- PASB's corporate information systems entered the new millennium with no Y2K-related problems. Remote access to e-mail allowed staff to continue to monitor programs and respond to communications when on duty travel or at home. The introduction of orientation programs to familiarize new employees with the Bureau's standards, policies, and access to information technology helped to reduce user support costs.
- With the completion of the computerized Personnel Administration System's recruitment module, PASB vacancies can now be accessed worldwide. The Bureau also has implemented a database system to recruit qualified candidates in any field of expertise.
- A new performance planning and evaluation system (PPES) was established throughout the Organization to foster greater objectivity in the appraisal process and more effective and continuous dialogue between the staff and their supervisors. Specific, measurable, attainable, realistic, and time-bound (SMART) objectives link the staff's work to the plans for executing technical cooperation. The continuous dialogue fostered by this new process has led the Bureau as a whole to pursue a developmental approach in human resource management.

Budget and finance

During 1999, the Bureau had approximately US\$ 272 million available for all its activities and administrative expenses—contributions from Member States and earnings from Bureau investments accounted for 53%; extrabudgetary sources, for 47%. Of these funds, 88% went towards the Bureau's in-country activities; 32% of the total went towards multi-country activities. (See Figure 2 for a breakdown of funds by type of activity and Figure 3 for a breakdown of funds by strategic and programmatic orientation and by Governing Bodies and administrative activities.)



Resource mobilization

To respond to the Organization's mandates and to the health priorities in individual Member States, PASB mobilized more than US\$ 50 million in 1999—more than 40% of the total budget executed—to supplement the financial resources provided through regular quota contributions (Table 1). The Bureau extended some existing agreements and signed new ones with various donors,

as well as with UNDP and UNFPA. Sweden committed almost US\$ 20 million, to be disbursed to PASB over the next three years. An umbrella agreement to support sector-wide aid was negotiated with the Netherlands, and the Dutch government also agreed to allocate Associate Professional Officers directly to PASB. The Kellogg Foundation continued to be an important partner from the nonprofit private sector.

New partners collaborated with the Bureau to bring resources for health to the Americas. Health and tourism benefited from a joint venture between PAHO/CAREC and the Caribbean Alliance for Sustainable Tourism, a subsidiary of the Caribbean Hotel Association. This collaboration facilitated access to private sector funds available through IDB and the Caribbean Development Bank.

The Bill and Melinda Gates Foundation donated US\$ 10 million for the control of cancer of the cervix. PASB also entered into partnerships with such private sector firms as Eli Lilly, Johnson & Johnson, Merck, Bayer, Siemens, and Philips.

FIGURE 2. Total funds, by type of activity, 1999.

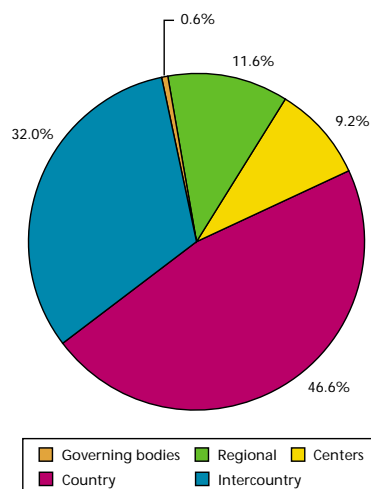


TABLE 1. Major resource mobilization, 1998–1999.

| Donor | Amount (US\$) |
|-----------------------------|---------------|
| United States of America | 13,808,000 |
| Sweden | 11,536,000 |
| International organizations | 4,145,000 |
| The Netherlands | 3,721,000 |
| Spain | 3,710,000 |
| Canada | 2,873,000 |
| Denmark | 2,245,000 |
| Norway | 1,584,000 |
| Private and public sectors | 1,506,000 |
| United Kingdom | 1,430,000 |
| Germany | 648,000 |
| Switzerland | 199,000 |
| Italy | 25,000 |
| Finland | 10,000 |

Increased information for clients

Providing the latest information on health-related topics to our clients in a timely and user-friendly manner remains a critical part of PAHO's work to advance the cause of human health. Not only are health professionals seeking state-of-the art knowledge, but people themselves also are seeking information to

help them protect their health, especially as the health-related information market expands exponentially to meet the demand.

Scientific and technical publications

Many new titles on topics related to the Organization's strategic and programmatic orientations were published during 1999–2000 (Figure 4) and were increasingly offered in full text online. Partnerships with the World Bank, the World Health Organization, and Harvard University, among others, resulted in books on tobacco and AIDS; the world health situation; and gender, health, and equity issues. (For a detailed list of publications issued in 1999–2000, see Table 2.) Sales were expanded by improving and increasing electronic commerce, re-vamping PASB's online bookstore, and increasing access through other online bookstores, including Amazon.com, Barnes&Noble.com, Borders.com, and their affiliate stores (Figure 5).

The monthly periodical, *Revista Panamericana de Salud Pública/Pan American Journal of Public Health*, was published on time; a double issue on violence was produced. The journal was made available in full-text electronic format both to individuals and institutions through the PAHO web, SciELO, and Ovid.

The PAHO Website

PASB continued to improve its online services to enhance response to the growing need for health information, and now provides additional interactive Web/Intranet services to users. This leading-edge technology enables the Bureau to communicate its public health activities more effectively and efficiently. New content on the Organization's sites includes the health data page, PASB databases, full-text books, an online bookstore, radio broadcasts, employment

FIGURE 3. Breakdown of funds by strategic and programmatic orientation and by administrative and Governing Bodies activities, 1999.

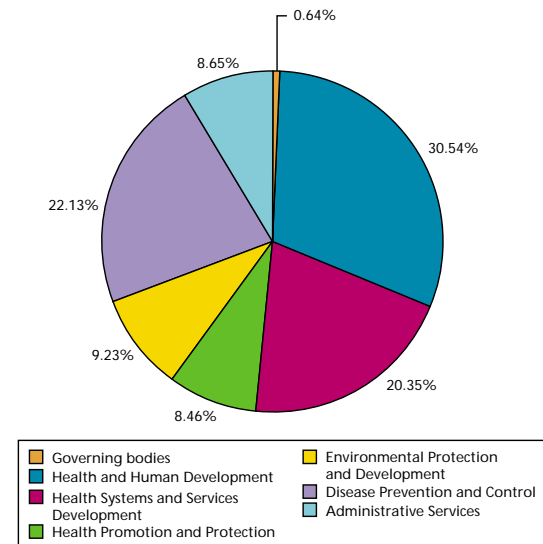


FIGURE 4. Titles issued by PAHO's Publications Program, by strategic and programmatic orientation, 1999–2000.

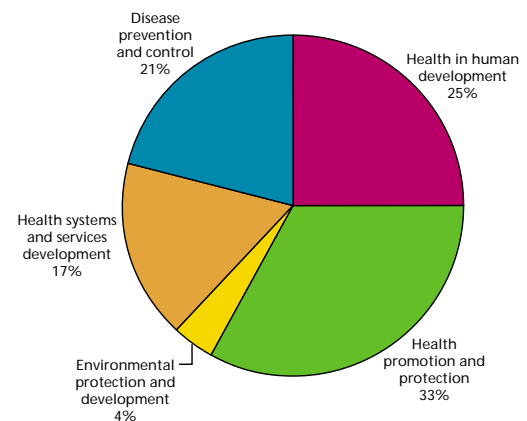


TABLE 2. Titles issued by PAHO's Publications Program, 1999–2000.

| Series No. | Series and Title |
|--------------------------------|---|
| Scientific Publications | |
| 570 | Hacer frente al sida. Prioridades de la acción pública ante una epidemia mundial. Edición revisada |
| 571 | Enfermería en las Américas/Nursing in the Americas/Enfermagem nas Américas |
| 572 | La salud y el ambiente en el desarrollo sostenible |
| 573 | El cuidado del enfermo terminal. Ética clínica y recomendaciones prácticas para instituciones de salud y servicios de cuidados domiciliarios |
| 574 | La salud y los derechos humanos. Aspectos éticos y morales |
| 575 | Los desastres naturales y la protección de la salud |
| 575 | Natural Disasters: Protecting the Public's Health |
| 576 | La obesidad en la pobreza: un nuevo reto para la salud pública |
| 576 | Obesity and Poverty: A New Public Health Challenge |
| 577 | La epidemia de tabaquismo. Los gobiernos y los aspectos económicos del control del tabaco |
| 578 | Ciencia en pro de la salud |
| 579 | Tobacco-free Youth: A "Life Skills" Primer |
| Official Documents | |
| 291 | Strategic and Programmatic Orientations for the Pan American Sanitary Bureau/ Orientaciones Estratégicas y Programáticas para la Oficina Sanitaria Panamericana/Orientações Estratégicas e Programáticas para a Repartição Sanitária Pan-Americana/Orientations Stratégiques et Programmatiques pour le Bureau sanitaire panaméricain—1999–2002 |
| 293 | Información para la salud. Informe Anual del Director, 1998 |
| 293 | Information for Health. Annual Report of the Director, 1998 |
| Technical Papers | |
| 41 | La erradicación del sarampión. Guía práctica |
| 41 | Measles Eradication: Field Guide |
| 47 | Hantavirus en las Américas. Guía para el diagnóstico, el tratamiento, la prevención y el control |
| 47 | Hantavirus in the Americas. Guidelines for Prevention, Diagnosis, Treatment, and Control |
| Occasional Papers | |
| 1 | El Código Sanitario Panamericano: hacia una política de salud continental |
| 1 | The Pan American Sanitary Code. Toward a Hemispheric Health Policy |
| 2 | Domestic Violence: Women's Way Out |
| 3 | El género y la reforma del sector salud |
| 4 | Comprender la salud de los hombres. Un enfoque relacional y sensible al género |
| 5 | La medición del estado de la salud. Género, carga de morbilidad y establecimiento de prioridades en el sector salud |
| 6 | Violencia contra la mujer. Género y equidad en la salud |

TABLE 2. (continued)

| Series No. | Series and Title |
|---|--|
| Other Publications | |
| • | Fiftieth Anniversary of the World Health Organization. Commemorative Speeches, Region of the Americas—21 September 1998/Cincuentenario de la Organización Mundial de la Salud. Discursos conmemorativos, Región de las Américas—21 de septiembre de 1998 |
| • | Inauguration of Sir George Alleyne as Director of the Pan American Sanitary Bureau. Commemorative Speeches—8 February 1999/Toma de posesión de Sir George Alleyne como Director de la Oficina Sanitaria Panamericana. Discursos inaugurales—8 de febrero de 1999 |
| • | Informe sobre la salud en el mundo 2000 |
| Electronic Publications | |
| Resoluciones de los Cuerpos Directivos/Governing Body Resolutions | |
| Periodical Publications | |
| Revista Panamericana de Salud Pública/Pan American Journal of Public Health (monthly) | |

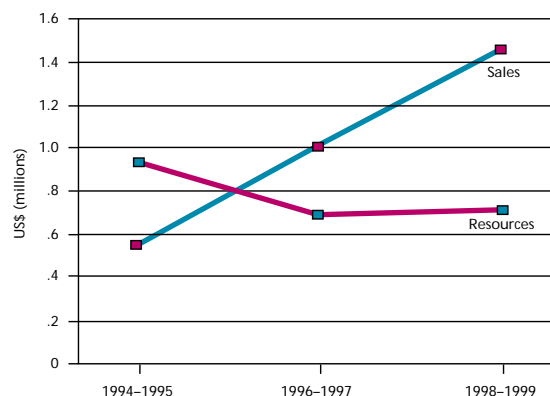
opportunities, and user profile surveys. Hits to the PAHO Web homepage increased by more than 300% between 1997 and 1999. In March 2000, the Institute for Scientific Information (ISI), USA, recognized PASB for the quality of its website.

Major strides were made in developing the full-text online institutional memory and its services to users. The public now has direct access to the proceedings and resolutions of PAHO's Governing Bodies, as well as to key historical documentation.

Public information

PASB produced coordinated public relations packages featuring graphics, news releases, photos, and videos for distribution throughout the Region, targeting a variety of audiences. These multimedia packets were highlighted during annual events such as World Health Day, World AIDS Day, World No-Tobacco Day, the Washington Walk for Health, and Governing Body meetings. Disasters such as the floods in Venezuela called for special efforts to inform potential donors of the extent of human losses and infrastructural damages. The Bureau played a key role in keeping journal-

FIGURE 5. Biennial publications sales, and resources available to the Publications Program, 1994–1999.



ists informed about the evolution of the disasters and about relief efforts, as well as educating them about the myths and realities of relief needs.

During 1999, the Bureau prepared some 200 press releases, media advisories, and background materials in English and Spanish, and distributed them to thousands of journalists throughout the Hemisphere. Many interviews for key PASB personnel were arranged with CNN, the *New York Times*, and key national newspapers and TV stations throughout the Region. The Bureau also stepped up its efforts to reach the general public—in addition to the public health community, partners, financial collaborators, and policy-makers—via the Speakers Bureau, journalists' forums, and public service announcements on television and in newspapers and magazines throughout the Americas.

After two years on the air, PAHO's one-minute Spanish language radio series "Salud siempre" can now be heard on more than 2,000 stations in Latin America and the United States. At the close of 1999, "Salud siempre" was launched over the Internet through the PAHO Web.

The Secretariat also produced and distributed a half-hour weekly television news magazine, "Perspectives in Health," which highlights key contemporary public health issues.

Three issues of the *PAHO Today* newsletter and two of *Perspectives in Health* magazine were published and widely distributed to both the Region's decision-makers and the general public. The magazine's mission—to present "the human face of public health"—aims to make key public health issues more easily grasped and understood, thereby encouraging people everywhere to care more about health. Readers ranging from Peace Corps volunteers, staff members from CDC and Health Canada, and Latin American physicians and scientists praised the newsletter and the magazine.

Acronyms and corresponding agencies or programs

| | |
|---------|---|
| AMPES | American Region Planning, Programming, Monitoring, and Evaluation System (PAHO) |
| BIREME | Latin American and Caribbean Center on Health Sciences Information |
| CAREC | Caribbean Epidemiology Center (PAHO) |
| CARICOM | Caribbean Community |
| CARMEN | Strategies to reduce multifactor non-communicable diseases |
| CDB | Caribbean Development Bank |
| CDC | Centers for Disease Control and Prevention (USA) |
| CEPIS | Pan American Center for Sanitary Engineering and Environmental Sciences (PAHO) |
| CFNI | Caribbean Food and Nutrition Institute (PAHO) |
| CIDA | Canadian International Development Agency |
| CIOMS | Council for International Organizations of Medical Sciences |
| CPC | Caribbean Program Coordination |
| ECLAC | Economic Commission for Latin America and the Caribbean |
| ECRI | Emergency Care Research Institute |
| EPA | Environmental Protection Agency (USA) |
| EPI | Expanded Program on Immunization |
| FAO | Food and Agriculture Organization |
| FDA | Food and Drug Administration (USA) |
| GTZ | German Technical Cooperation Agency |
| IAEA | International Atomic Energy Agency |
| IBRD | International Bank for Reconstruction and Development (World Bank) |
| ICCIDD | International Council for Control of Iodine Deficiency Disorders |
| IDB | Inter-American Development Bank |

| | |
|-----------|--|
| IDRC | International Development Research Center (Canada) |
| ILO | International Labor Organization |
| IMCI | Integrated Management of Childhood Illnesses |
| INCAP | Institute of Nutrition of Central America and Panama (PAHO) |
| INPPAZ | Pan American Institute for Food Protection and Zoonoses (PAHO) |
| ISCA | Central American Health Initiative |
| MASICA | Environment and Health in the Central American Isthmus program (PAHO) |
| MERCOSUR | Southern Common Market |
| NAFTA | North American Free Trade Agreement |
| OAS | Organization of American States |
| OECD | Organization for Economic Cooperation and Development |
| PAHEF | Pan American Health and Education Foundation |
| PAHO | Pan American Health Organization |
| PANAFTOSA | Pan American Foot-and-Mouth Disease Center (PAHO) |
| PASB | Pan American Sanitary Bureau |
| PLAGSALUD | Occupational and Environmental Aspects of Exposure to Pesticides in the Central American Isthmus |
| REPAMAR | Pan American Environmental Waste Management Network |
| RESSCA | Meeting of the Health Sector of Central America |
| RESSCAD | Meeting of the Health Sector of Central America and the Dominican Republic |
| SICA | Central American Integration System |
| UNAIDS | Joint United Nations Program on HIV/AIDS |
| UNDP | United Nations Development Program |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| USAID | United States Agency for International Development |
| USDA | United States Department of Agriculture |
| WHO | World Health Organization |
| WTO | World Trade Organization |