AN OVERVIEW OF REGIONAL HEALTH

Since the inception of the Pan American Health Organization in 1902, the governments of the Americas have jointly addressed their concerns regarding health and the environment, committing to collective action and defining strategies to respond to emerging challenges. From the beginning, the collection, analysis, and dissemination of health information has been a primary function of the Organization. Starting in 1924, health conditions and trends reported by countries were a main feature of annual reports of the Director. In 1954, the Secretariat of PAHO produced the first separate report on health conditions in the Americas, thus launching an uninterrupted quadrennial, now quinquennial, publication of information on health in the Region.

This 2007 edition of *Health in the Americas* presents a broad picture of the regional situation and that of all the countries with regard to health and human development; specific disease conditions and risk factors; environmental health, and the evolution of health systems and services. In addition, it considers and discusses progress made regarding the global commitment, expressed in the United Nations Millennium Development Goals (MDGs), to tackle extreme poverty, hunger, disease, lack of water and sanitation, inadequate housing, and social exclusion and to promote gender equality, education, and environmental sustainability. That expression of countries' collective commitment to social equity informs the text throughout this publication.

HEALTH IN THE CONTEXT OF DEVELOPMENT

In the Region of the Americas, human development and health have advanced over the past quarter-century, as shown by selected indicators in Table 1. Population growth has slowed, dropping in 2006 to a rate of 1.2% per year—ranging from 0.4% in the non-Latin Caribbean to 2% in Central America. Urbanization has expanded from 68.6% in 1980 to 78.9% in 2006. Coverage of basic services is on the increase for the

TABLE 1. Improvements in health and development in the Americas, selected indicators, 1980–2010.

Indicator[1]	1980–1985	1990–1995	2005–2010
Life expectancy at birth (years)	68.8	71.1	74.9
Total fertility rate (children/woman)	3.1	2.6	2.6
Infant mortality (per 1,000 live births)	37.8	22.5	16.5
Urban population (%)	68.6	72.8	79.1
Indicator[2]	**1980–1984**	**1990–1994**	**2000–2004**
Mortality from communicable diseases (rate/100,000 inhabitants)	109	62.8	55.9
Mortality from diseases of the circulatory system (rate/100,000 inhabitants)	280	256.2	229.2
Indicator[3]	**1980**	**1990**	**2005**
Literacy rate (%)	88	87.6	93.8
Immunization coverage (%): DPT3	45	76.8	93
Immunization coverage (%): Measles	48	82.5	93
Access to drinking water (%)	76	80	93
Access to sanitation services (%)	59	66	84
Nurses per 10,000 inhabitants	23.1	37.9	30

Sources:

[1]United Nations, Department of Economic and Social Affairs, Population Division (2005). World Population Prospects: The 2004 Revision. CD-ROM Edition Extended Dataset. U.N. Publications Sales No. 05.XIII.12.

[2]PAHO/Health Analysis and Statistics Unit (HA). Mortality Database System. 2004.

[3]PAHO, *Health Situation in the Americas: Basic Indicators, 2006.* Washington, D.C.; *Health Conditions in the Americas, 1994 Edition* and UNESCO for 1985–1994; PAHO, Evaluación Regional de Agua y Saneamiento, Washington, D.C. 2000; and http://stats.uis.unesco.org/unesco/TableViewer/tableView.aspx?ReportID=201.

most part, although less so in rural areas: the general population has better access to education, water and sanitation services, primary health care, cost-effective technologies, and immunizations. This increased coverage has enabled measurable progress toward preventing and controlling numerous communicable diseases that heretofore represented a significant burden. At the same time, life expectancy at birth has increased by an average of six years, and the incidence of infant mortality has decreased by one-half (*1*). The slowing of population growth, the lengthening of life spans, and the stemming of deaths from communicable diseases and perinatal conditions are among the foremost advances in health in the Region.

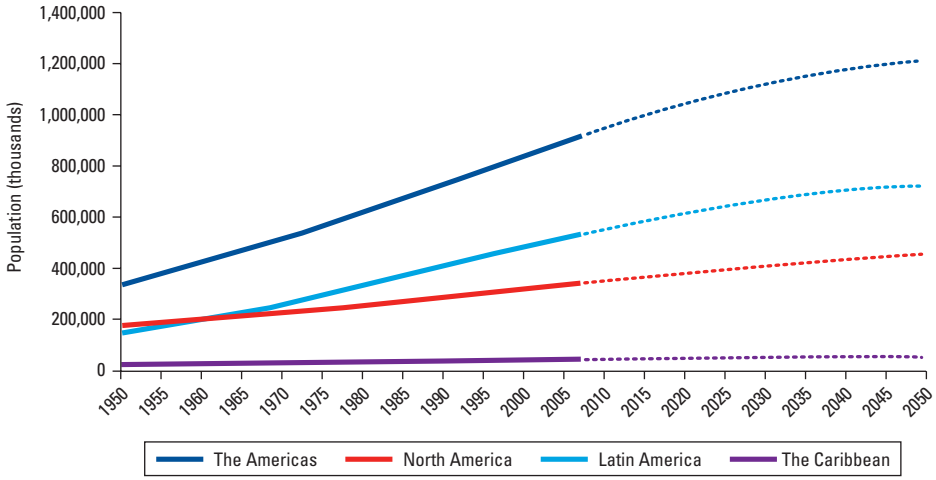
Notwithstanding these important gains in regional health, many major challenges remain: communicable diseases such as HIV/AIDS, malaria, and tuberculosis; various chronic noncommunicable diseases and conditions such as obesity, hypertension, cardiovascular diseases, diabetes, and cancer; and accidents and violence. Those health problems, in turn, stem from risk factors related to various demographic, social, and economic shifts in the Americas, including the aging of the population; changes in diet and physical activity as well as the consumption of tobacco, alcohol, and drugs; and the deterioration of social structures and supports.

The Millennium Development Goals set markers of progress in terms of human development and, at the same time, are indicators of the effectiveness of health systems. Having brought investment in people's health to the core of the global development agenda, the MDGs afford new opportunities for the health sector and health organizations to gain wide support for the health agenda.

The greatest share of health problems is attributable to broad social determinants—the "causes behind the causes" of ill-health: poverty, malnutrition, unemployment, lack of access to education and health services, the social exclusion of certain population groups, among others. These social determinants are analyzed in depth in Chapter 1 of this publication, "Health in the Context of Development," which covers the economic, political, social, and environmental contexts of health. Some of the salient factors impacting on health in the Americas are presented summarily in the paragraphs that follow.

Demographics. The Region of the Americas continues to experience three major demographic shifts: population growth, urbanization, and aging. Since 1950, the regional population has almost tripled, reaching 900.6 million inhabitants in 2006, according to the latest United Nations population revision (*2*). Under a mid-fertility variant scenario, this population is projected

FIGURE 1. Total population trends and projections by main geographic subregion, Region of the Americas, 1950–2050.



Source: United Nations Population Division. World Population Prospects: The 2006 Revision. New York. 2007.

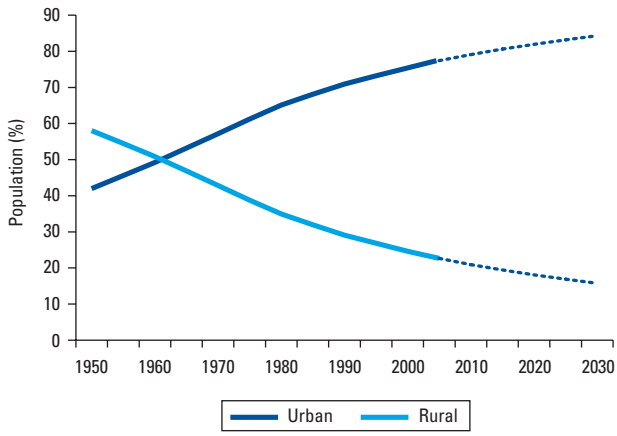
to surpass the mark of 1 billion people, more than 600 million of them in Latin America and the Caribbean, in 2016 (Figure 1).

Social and economic disadvantages in rural areas and smaller population centers have led people, both worldwide and in the Americas, to migrate toward urban areas in search of employment and better living conditions, and urbanization is indeed a prominent feature of regional demographic change. Considerable differences exist among subregions, however: the urban population in the non-Latin Caribbean is 46.3%; in Central America, 54.8%; in the Latin Caribbean, 67.4%; in the Andean Area, 75.8%; in North America, 81%; and in the Southern Cone, 86.8%. Nearly 20% of the total population is now concentrated in only 20 of the Region's largest cities. In Latin America and the Caribbean, migration has spawned large, sprawling cities with marginalized areas that breed poverty, unemployment, violence, insecurity, pollution, and poorly distributed basic services. Since 1950, when rural population represented 58% of the total population, urban population has been growing, reaching 77.4% in 2005. If that trend persists unaltered, in 2030 the urban population in Latin America and the Caribbean is projected to reach almost 85%, as shown in Figure 2 (*2*).

The two population groups with the fastest growth in the Americas are the 60 and older and the 80 and older age groups. In North America, where the population-aging process began earlier, people 60 years of age and older went from representing 12.4% of the total population in 1950 to 16.7% in 2005; it is projected that this population group will increase to 20.1% of the total population in 2015 and to 27.3% in 2050. In Latin America and the Caribbean, on the other hand, the 60 and older age group comprised 5.6% of the 1950 population, increasing to 9.0% in 2005; it is projected to reach 11.3% of the total population in 2015 and 24.3% in 2050. The proportion of the total population represented by the 80 and older age group jumped from 1.1% in 1950 to 3.5% in 2005 in North America (and is projected to reach 3.7% in 2015), and from 0.4% to 1.2% in Latin America and the Caribbean (projected to increase to 1.7% in 2015). As the population ages, the ratio of productive adults to elderly individuals shrinks, as does potential funding of support for the elderly (Figure 3).

Economic growth, income, and employment. The Region's economy has undergone a series of shifts from low to high growth rates. After a period of declining growth and persistent

FIGURE 2. Urban and rural population trends and projections in Latin America and the Caribbean, 1950–2030.



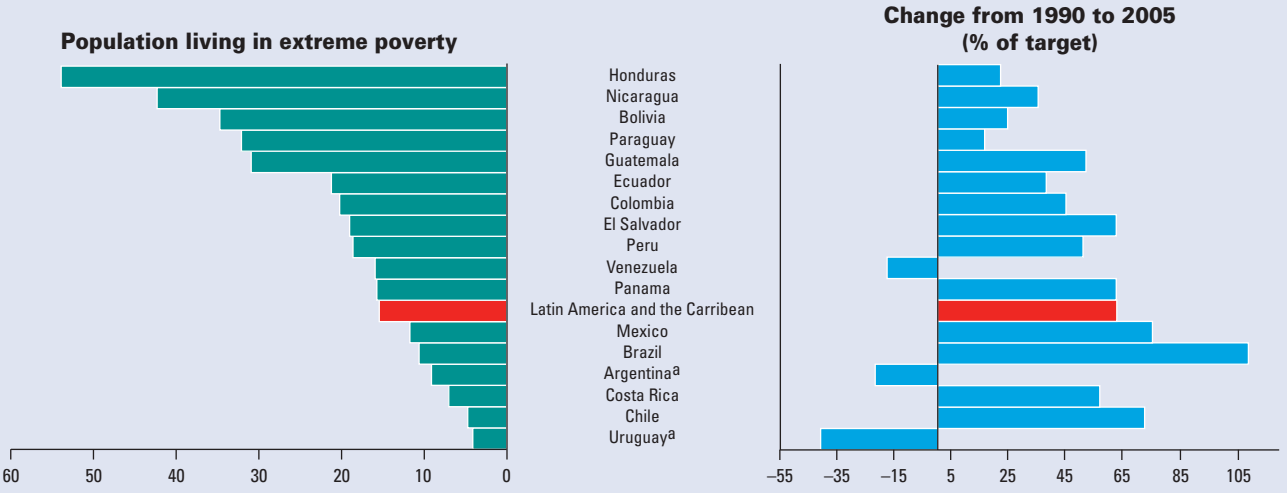
Source: United Nations Population Division. World Population Prospects: The 2006 Revision. New York. 2007.

The Millennium Development Goals

GOAL 1. ERADICATE EXTREME POVERTY AND HUNGER

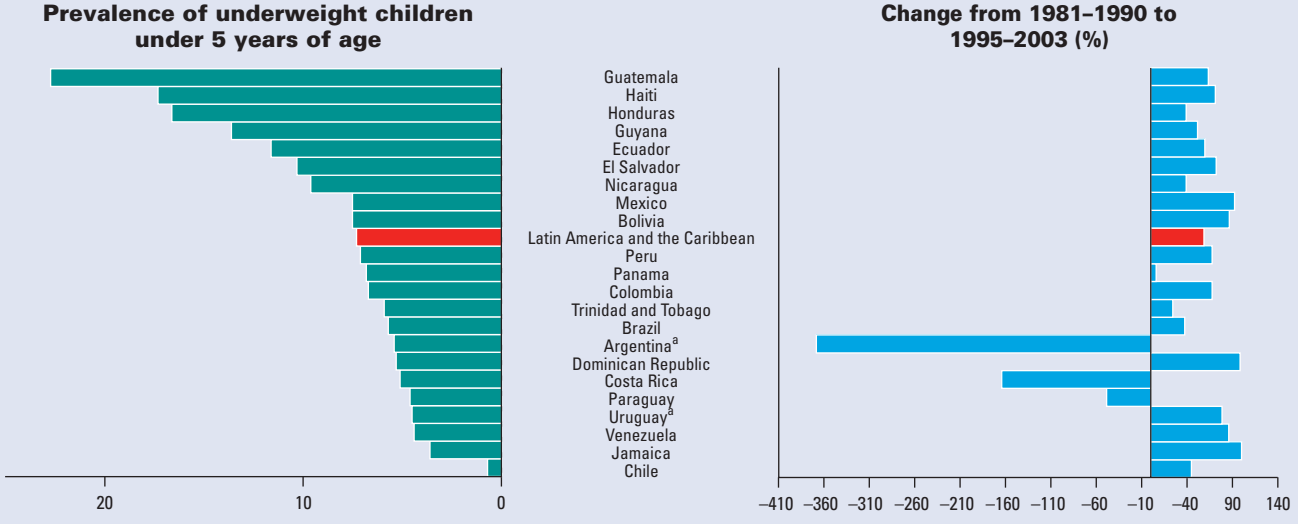
TARGET: HALVE, BETWEEN 1990 AND 2015, THE PROPORTION OF PEOPLE WHOSE INCOME IS LESS THAN US$ 1 A DAY.

Population living in extreme poverty (%), in Latin America and the Caribbean, 2005.



TARGET: HALVE, BETWEEN 1990 AND 2015, THE PROPORTION OF PEOPLE WHO SUFFER FROM HUNGER.

Underweight children under 5 years of age (%), in Latin America and the Caribbean, 1995–2003.



[a] Numbers refer to urban areas.

Note: The absence of bars means no change.

Sources: Economic Commission for Latin America and the Caribbean (ECLAC). The Millennium Development Goals: A Latin American and Caribbean Perspective. Produced in collaboration with the Pan American Health Organization; International Labor Organization; Food and Agricultural Organization of the United Nations; United Nations Educational, Scientific, and Cultural Organization; United Nations Development Program; United Nations Environment Program; United Nations Children's Fund; United Nations Population Fund; World Food Program; United Nations Human Settlements Program; United Nations Development Fund for Women. Santiago, Chile: ECLAC; 2005.

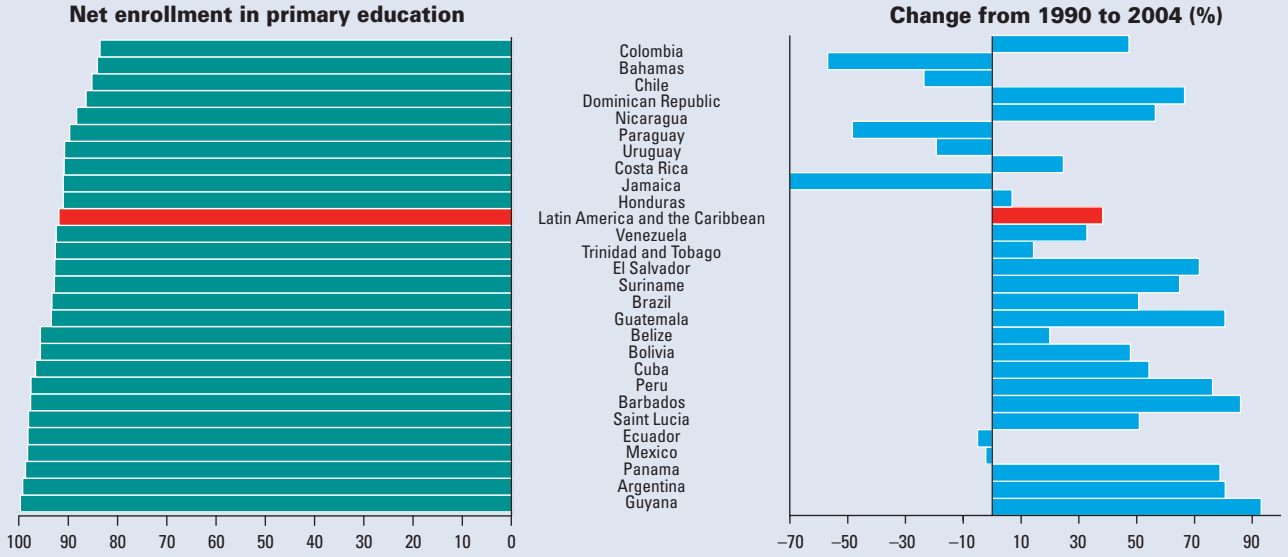
United Nations Statistical Division online database: http://millenniumindicators.un.org/unsd/mispa/mi_goals.aspx; and ECLAC Statistics and Economic Projections Division online database: http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1.

in Latin America and the Caribbean

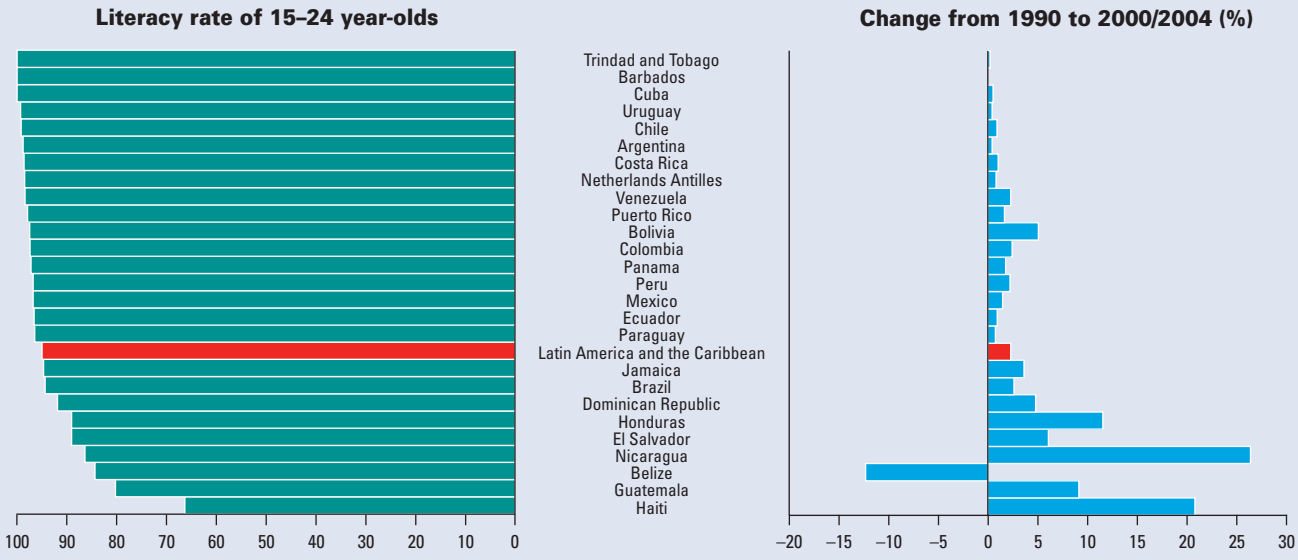
GOAL 2. ACHIEVE UNIVERSAL PRIMARY EDUCATION

TARGET: ENSURE THAT, BY 2015, ALL CHILDREN EVERYWHERE, BOYS AND GIRLS ALIKE, WILL BE ABLE TO COMPLETE A FULL COURSE OF PRIMARY SCHOOLING.

Net enrollment in primary education (%), in Latin America and the Caribbean, 2004.



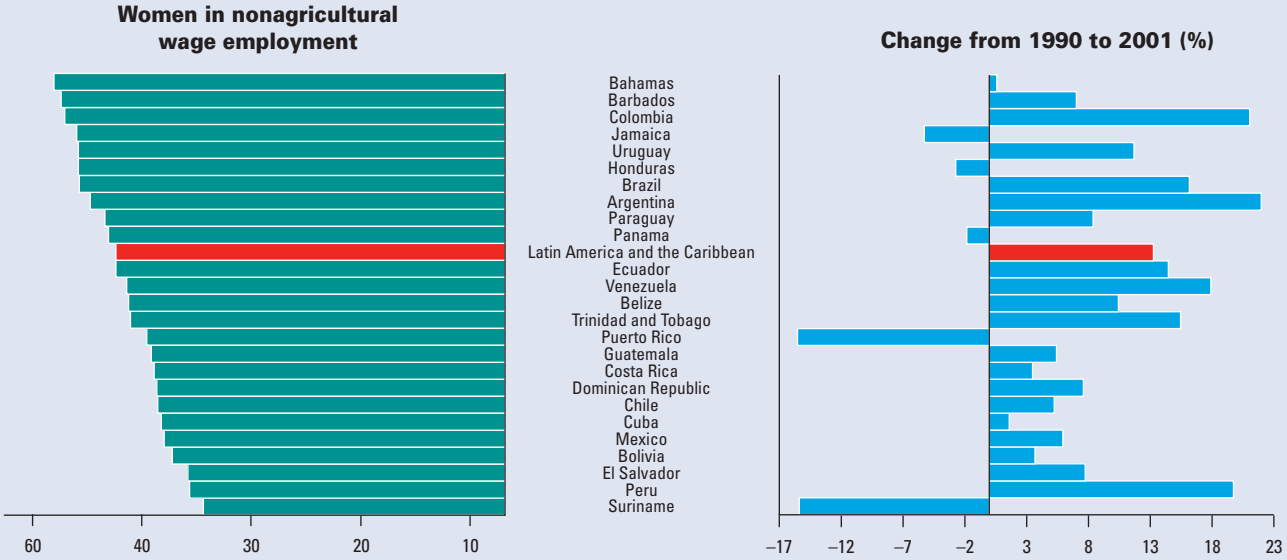
Youth literacy rate (%), in Latin America and the Caribbean, 2000/2004.



GOAL 3. PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

TARGET: ELIMINATE GENDER DISPARITY IN PRIMARY AND SECONDARY EDUCATION, PREFERABLY BY 2005, AND IN ALL LEVELS OF EDUCATION NO LATER THAN 2015.

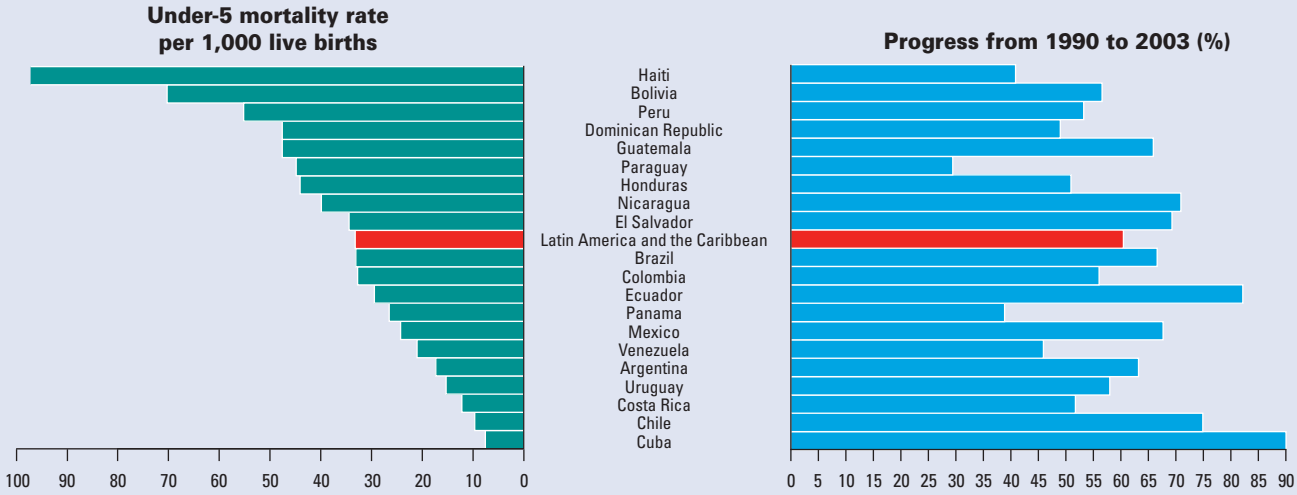
Share (%) of women in nonagricultural wage employment in Latin America and the Caribbean, 2001.



GOAL 4. REDUCE CHILD MORTALITY

TARGET: REDUCE BY TWO-THIRDS, BETWEEN 1990 AND 2015, THE UNDER-5 MORTALITY RATE.

Under-5 mortality rate per 1,000 live births, in Latin America and the Caribbean, 2003.



Note: The absence of bars means no change.

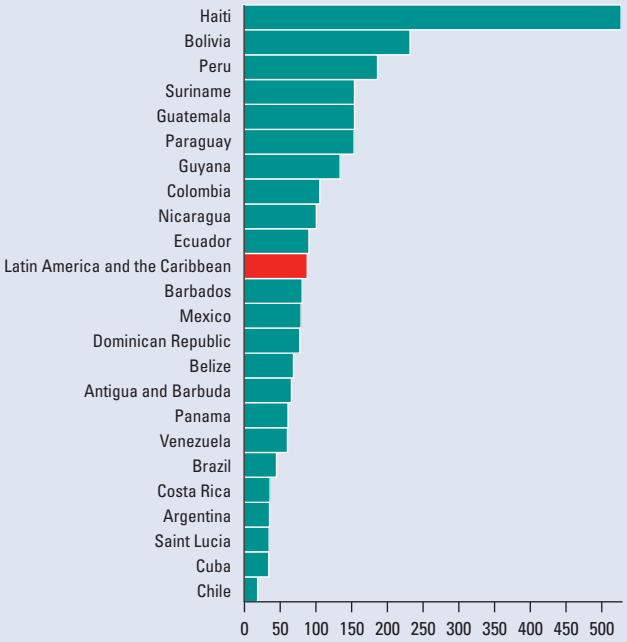
Sources: Economic Commission for Latin America and the Caribbean (ECLAC). The Millennium Development Goals: A Latin American and Caribbean Perspective. Produced in collaboration with the Pan American Health Organization; International Labor Organization; Food and Agricultural Organization of the United Nations; United Nations Educational, Scientific, and Cultural Organization; United Nations Development Program; United Nations Environment Program; United Nations Children's Fund:; United Nations Population Fund; World Food Program; United Nations Human Settlements Program; United Nations Development Fund for Women. Santiago, Chile: ECLAC; 2005.

United Nations Statistical Division online database: http://millenniumindicators.un.org/unsd/mispa/mi_goals.aspx; and ECLAC Statistics and Economic Projections Division online database: http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1.

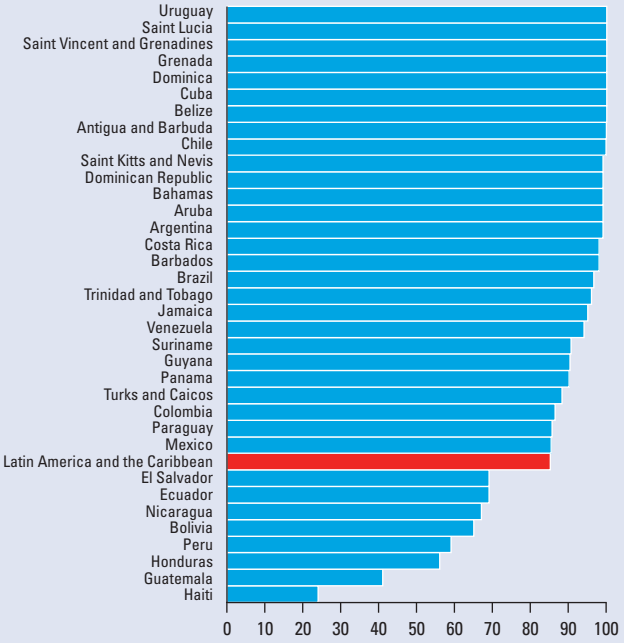
GOAL 5. IMPROVE MATERNAL HEALTH

TARGET: REDUCE BY THREE-QUARTERS, BETWEEN 1990 AND 2015, THE MATERNAL MORTALITY RATE.

Maternal mortality rate per 100,000 live births, Latin America and the Caribbean, 2000.



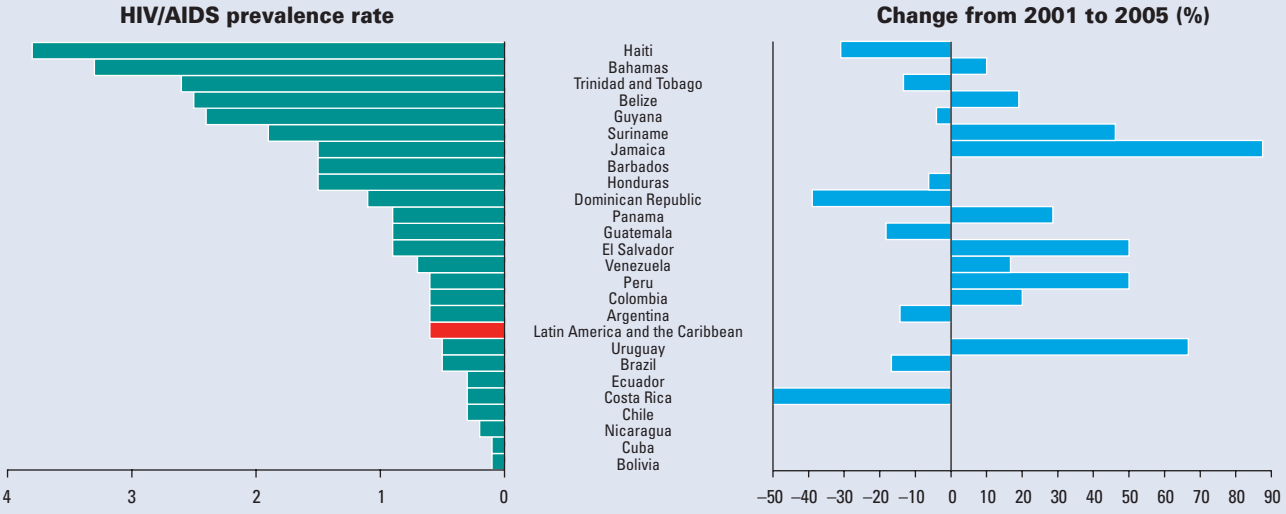
Proportion (%) of deliveries attended by skilled health personnel, Latin America and the Caribbean, 2000.



GOAL 6. COMBAT HIV/AIDS, MALARIA, AND OTHER DISEASES

TARGET: HAVE HALTED, BY 2015, AND BEGUN TO REVERSE THE SPREAD OF HIV/AIDS.

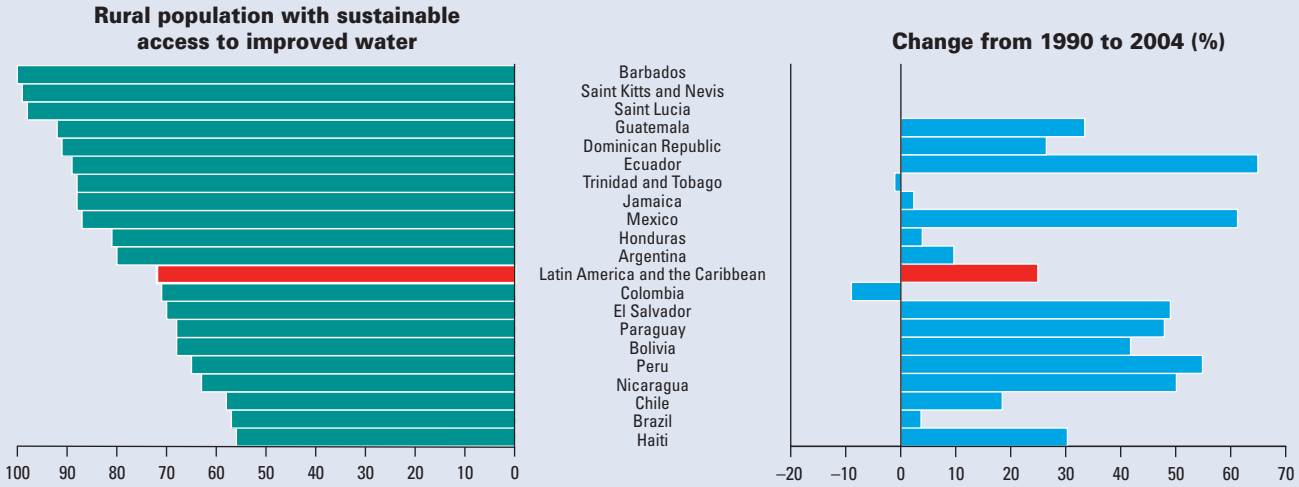
HIV/AIDS prevalence rate (%) among 15–49 year-olds, in Latin America and the Caribbean, 2005.



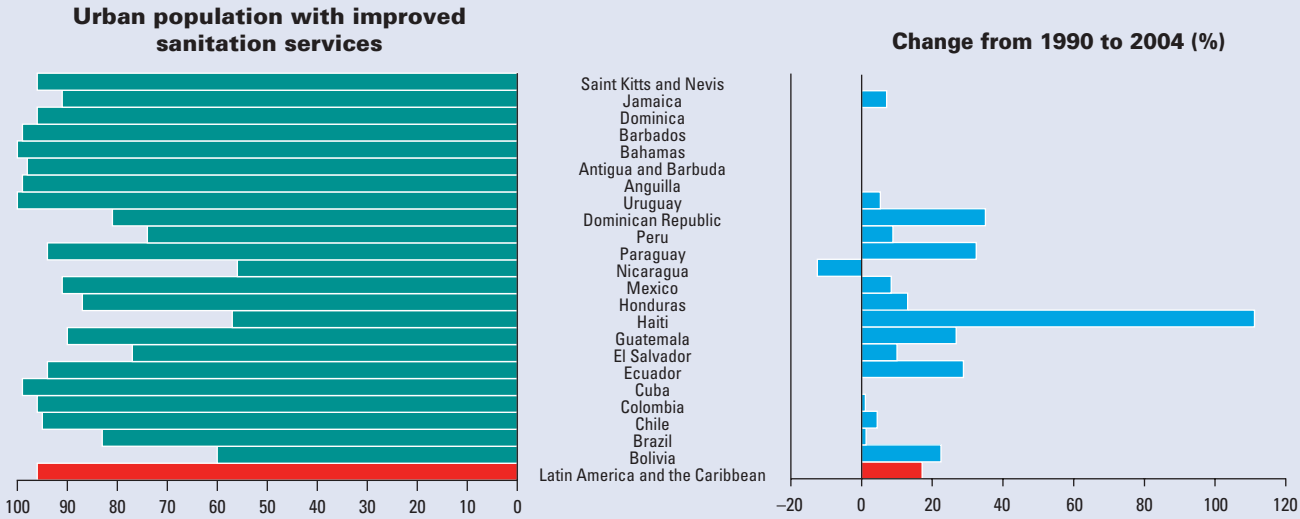
GOAL 7. ENSURE ENVIRONMENTAL SUSTAINABILITY

TARGET: HALVE, BY 2015, THE PROPORTION OF PEOPLE WITHOUT SUSTAINABLE ACCESS TO SAFE DRINKING WATER AND BASIC SANITATION.

Proportion of the rural population with sustainable access to an improved water source (%), in Latin America and the Caribbean, 2004.



Proportion of the urban population with improved sanitation services (%), in Latin America and the Caribbean, 2004.



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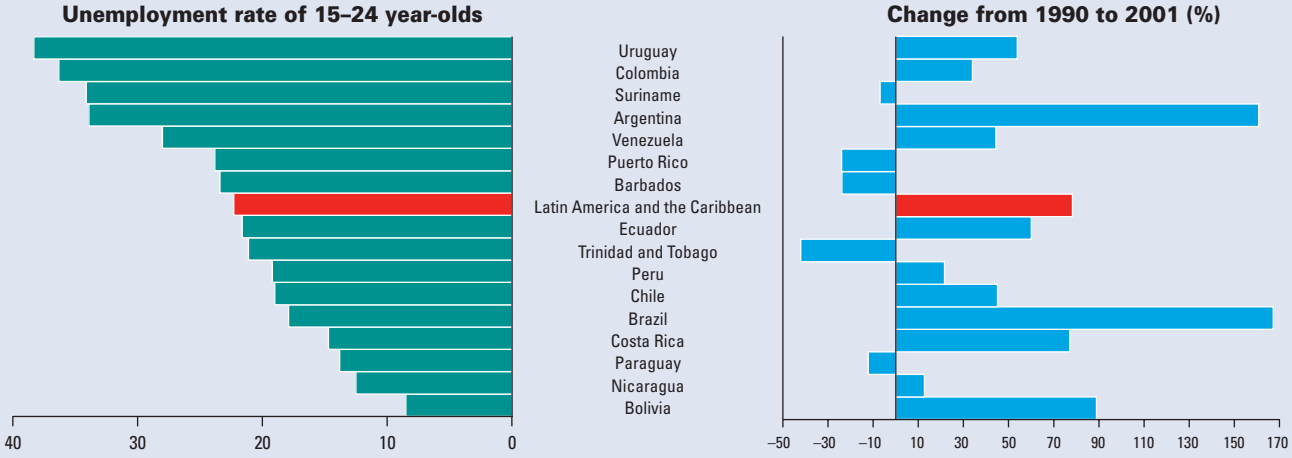
United Nations Statistical Division online database: http://millenniumindicators.un.org/unsd/mispa/mi_goals.aspx; and ECLAC Statistics and Economic Projections Division online database: http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1.

GOAL 8. DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT

TARGET: IN COOPERATION WITH DEVELOPING COUNTRIES, DEVELOP AND IMPLEMENT STRATEGIES FOR DECENT AND PRODUCTIVE WORK FOR YOUTH.

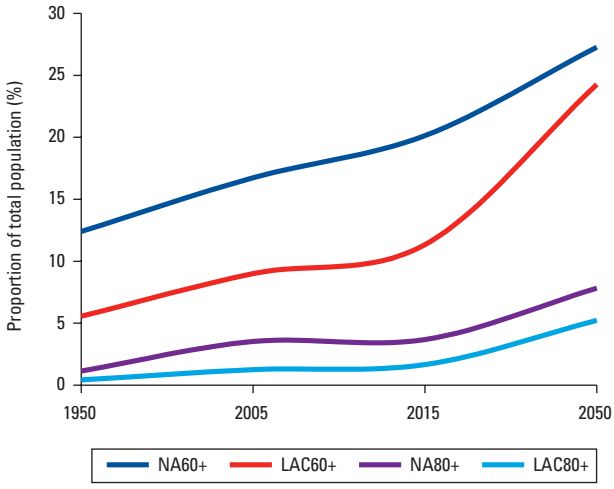
Unemployment rate (%) of young people aged 15–24 years, both sexes, in Latin America and the Caribbean, 2001.



Health at the Core of Development

The Millennium Development Goals reflect the outcomes of decades of consensus-building within the United Nations system and of numerous global gatherings, starting with the International Conference on Primary Health Care in 1978 and including the World Summit for Children in 1990. Through the Millennium Declaration adopted by 189 countries in 2000 and the outcomes of the International Conference on Financing of Development in 2002, the world community reconfirmed agreements reached at earlier United Nations summits and reinforced them through the 2015 target date. The key challenge of the MDGs is not technical but political: never before had the community of nations set for itself such a focused common agenda, calling on governments, civil society, the private sector, and international organizations to give priority to poverty reduction and to redress inequalities in access to key determinants of development. The Millennium Declaration gives a new sense of urgency and provides a framework that transcends individual sectors; now, within the context of the MDGs, education, health, and the environment are understood, together as an indivisible package, as prime investment areas for poverty reduction and human development. At the same time, because three of the eight MDGs refer explicitly to health and all of them relate in some measure to health, the world community has made clear its collective recognition of the crucial role of health at the center of economic and social development.

FIGURE 3. Trends and projections in aging, North America and Latin America and the Caribbean, 1950–2050.



Source: United Nations Population Division. World Population Prospects: The 2006 Revision. New York. 2007.

downturns in the 1980s, the countries began to experience sluggish growth—averaging around 1.4% per year in the 1990s. Between 2000 and 2003, another crisis produced a new decline in economic growth. Growth resumed in 2004, however, reaching a regional average of 6%; in 2005, around 4%; and in 2006, a projected 3–5.5% increase in most of the countries.

Although advances have been scored in poverty reduction in recent years, in 2005 40.6% of the population of the Americas (almost 213 million persons) continued to live in poverty and 16.8% (88 million persons) in extreme poverty; furthermore, despite overall regional economic growth, the gap in wealth between the richest and the poorest countries, far from narrowing, widened between the late 1970s and the early 2000s—a trend that, if current conditions persist, is projected to continue (*3*).

Unemployment precludes subscription in the social security system and, consequently, limits access to health care. Informal employment and child labor further complicate the situation. As regards women, their entry into the paid labor force over the past two decades, while augmenting family income and purchasing power, has overburdened many of them, as women continue to be the principal homemaker—a role that, paradoxically, is increasingly neglected; yet even when they hold jobs traditionally held by men, women tend to be paid less. As for the younger generation, the eighth MDG—the aim of which is to forge a global partnership for development—targets the promotion of decent and productive work for youth, whose unemployment rates in Latin America and the Caribbean have worsened since 1995.

Education. In the Americas, progress in education has been significant over the past quarter-century, as measured by the regional literacy rate, which has increased from 88% in the 1980s to around 94% in 2006. Notwithstanding, educational progress has not been uniform across all population groups: women still have lower literacy rates than men; rural residents have lower rates than their urban counterparts; and the poor are less literate than the rich. Still, access to education is improving throughout Latin America and the Caribbean, as indicated by the increase in net enrollment in primary education for boys and girls alike, from 86% in 1990 to 95% in 2004.

Environment. Historically, human health has been shaped by the interaction of diverse environmental, biological, economic, social, political, and cultural determinants, which can result in unsatisfactory living conditions, environmental risks and hazards, lifestyle and behavioral changes and, ultimately, in illness, disability, and death. A 2004 WHO report found that, of the 102 major diseases, 85 were partially caused by exposure to environmental risks and that environmental causes contributed to about one-fourth of disability-adjusted life years lost and one-fourth of associated deaths (*4*).

In the Americas, socioeconomic deterioration—characterized by poverty, rapid urbanization, and social fragmentation—has contributed to greater inequalities and unhealthier environments, particularly affecting rural agricultural and traditional indigenous populations. Other environmental inequalities are observed in marginal urban areas where housing conditions and access to drinking water and sanitation are poor and people are more exposed to noise, chemical contamination, and violence. These conditions are worsening in some countries; for instance, 60% of the urban population in Haiti had access to drinking water in 1990, whereas by 2004 only 58% did. Chapter 3 discusses these environmental issues in detail.

In addition, violence resulting from unhealthy social environments in marginal urban areas is taking a deadly toll. Official registries show that in the last 10 years 110,000–120,000 homicides and 55,000–58,000 suicides occurred in the Region (*5*). Governments and the health sector in a number of Latin American countries are growing increasingly concerned about juvenile violence, which is leading to the formation of gangs that conduct such transnational operations as kidnapping, human trafficking, and weapon and drug smuggling.

Urban growth results in increased needs for transportation, which in turn leads to greater risks of injuries and more air pollution. Every year in the Americas an estimated 130,000 people die, more than 1.2 million suffer injuries, and hundreds of thousands become disabled as a result of traffic-related injuries. Low-income countries in Latin America are more affected because of the use of poorly maintained vehicles, the wide variety of public road users (pedestrians, cyclists, and motorcyclists), less safety education, and lack of adequate regulations (Chapter 3).

Urban air pollution, intensified by rapid urbanization and industrialization and the associated increase in fossil fuel use and

carbon dioxide emissions, also affects human health and is reported to contribute to climate change and global warming. The 2001 report of the United Nations Intergovernmental Panel on Climate Change (IPCC) showed that over the course of the 20th century the global temperature had increased 0.2–0.6º Centigrade and that the sea level had risen 10–20 cm. The IPCC projected a global warming of 1.4–5.8ºC by 2100. As a result, along with other regions of the world, the Americas will experience periods of intense precipitation, hurricanes, and flooding that will severely affect human health and well-being. Four countries of the Americas are among the world's largest carbon-dioxide emitters: the United States, Canada, Brazil, and Mexico (*6*). The 2007 report of the IPCC confirmed that human activity is warming the planet at a potentially disastrous and irreversible rate (*7*).

Globalization. The world's increasing connectivity, integration, and interdependence in the economic, social, technological, cultural, political, and ecological spheres—a process generally referred to as "globalization"—is one of the greatest challenges confronting the health sector. The world's changing economic and social structures are imposing competitive conditions and raising the risk of economic crises. Countries, institutions, and individuals are having to adapt to these changes to assure their place in the local and global scenarios. At the same time, globalization is creating opportunities that transcend national borders. In the Americas, this phenomenon has resulted in connectivity and collaboration among countries, as expressed in various international summits to advance the human condition throughout the hemisphere, and in the formation of subregional economic blocs (Chapter 1).

Science and technology. Scientific and technological advances, industrialization, socioeconomic development, improved communication, better hygiene and increased food intake have contributed to increasing life expectancy and reducing mortality rates throughout the world. In the last 50 years many technological developments have led to new diagnostic and therapeutic possibilities in medicine, such as imaging technologies, materials for internal or external prosthesis, laser technology and biosensors. Vaccine research has produced numerous successes, among them vaccines for hepatitis B and *Haemophilus influenzae* type B as well as ongoing development of vaccines for cholera, malaria, tuberculosis, and HIV/AIDS. Many state-of-the-art technologies—such as genetic engineering, microsurgery, and custom-designed drugs—are becoming increasingly available. As a result of breakthroughs in DNA technology, specific, highly sensitive diagnostic tests have been developed for field use in tropical countries, giving rise to more precise surveillance and tracking of microorganisms and diseases. Transgenic animals are being bred to produce drugs, vaccines, hormones, and other substances of value to the pharmaceutical industry; transgenic pigs have been bred as a source of organs and tissues for transplantation, raising concerns about the possibility of the transmission of viruses or other pathogens to humans. The introduction of gene manipulation techniques has also led to bigger crop yields and better food quality, by providing resistance to pests and weeds; however, concerns that engineered organisms in nature might alter native ecosystems or even harm people's health is resulting in demands for ethical standards for genomics, cloning, and genetic engineering.

> *"There is in our societies a persistently high degree of stigma and discrimination. This, coupled with a lack of true political participation in each country's development plans, makes the situation unsustainable. The permanent denial of fundamental rights has led to the marginalization of the indigenous population, leading to alarming poverty rates, lack of land, low earnings, high unemployment, high rates of illiteracy especially among women, high rates of school dropouts, and an epidemiological profile with high rates of illnesses and premature death where preventable causes are predominant. The communities and municipalities with the highest percentage of indigenous population are those furthest from the goals set by the Millennium Declaration."*
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> **Mirta Roses, 2006**

Regional health information systems have improved significantly in recent years. Although the collection of comprehensive information about priority diseases in different geographic, demographic, and social segments of a community is difficult even in developed countries, virtually enabled advances, such as geographic information systems and collaborative work methods, are reducing the cost and improving the quality of health information.

Today the scientific and public health communities confront the challenge of making the benefits of science and technology available to the maximum number of people so as to improve, equitably, the quality of their lives. Currently, Latin America and the Caribbean trail more developed countries in the numbers of scientific and technological programs. Research productivity in the region is still low compared to developed countries, as expressed in the fact that only 3% of the 1.1 million scientific papers included in MEDLINE during the period 2000–2003 were authored by Latin American and Caribbean investigators (*8*).

One of the main constraints to the advancement of science and technology has been the low allocation of resources towards that end. As a percentage of GDP, the allocation for research and development in Latin America and the Caribbean was 0.5% in 1990 and rose to 0.6% in 2002, while in the United States the comparable allocation was about 2.6%, a proportion that remained constant throughout the period 1990–2002. Moreover, Latin America and the Caribbean have 0.7 investigators per 1,000 population as compared to the international benchmark of 6–10 per 1,000 (*9*).

TACKLING THE UNFINISHED AGENDA

Almost three decades have passed since the signing of the Declaration of Alma-Ata at the International Conference on Primary Health Care (Alma-Ata, Kazakhstan, September 1978), and in the Americas much progress has been made towards realizing the agenda it set forth (for more in that regard, see the section below on "Protecting Health Gains"). The countries of the Region have placed primary health care policies and programs at the center of their national health systems so as to meet the goal of health for all. The number of people living in extreme poverty (less than $1 a day) fell by about 3 million from 1990 to 2005. The Region is close to achieving universal primary education—some 97% of children are completing primary school, although regional averages disguise the situation in countries that lag behind. The youth illiteracy rate has fallen by 12% in 30 years. And life expectancy is nearly 20 years longer, on average, than it was 50 years ago (*10*).

Notwithstanding, work towards realization of the primary health care agenda remained unfinished at the start of the new millennium: in some countries and in many within-country areas, diseases and conditions have persisted that hamper attainment of health for all. Despite the availability of cost-effective solutions and simple interventions, a scenario of disparities prevails in which a "tyranny of averages"—that is, excessive reference to the middle value—hides the continuing presence of priority health problems. In many countries and within-country areas, the "unfinished agenda" means the persistence of problems resolved elsewhere, including:

- Extreme poverty and hunger
- High mortality in children under 5
- Lack of improvement in maternal health
- Inadequate prevention and control of HIV/AIDS, tuberculosis, and malaria
- Limited access to essential drugs
- Insufficient access to water and sanitation
- Barriers to improving health of indigenous people
- Neglected diseases in neglected populations

Addressing inequities. The benefits of improvements in regional social and health indicators have not reached all groups and populations alike, resulting in inequitable disparities in morbidity, mortality, and access to health services. Income, ethnicity, and education continue to matter. In many of the countries in the Region, health conditions remain unacceptably—and unnecessarily—poor. Poor health translates into grief, misery, stalled economic growth, and thwarted efforts to reduce poverty. Those most hurt are children in low-income countries, women, indigenous people, the uneducated, rural dwellers, migrant workers, sex workers, street children, and the elderly. Geography also matters: the situation with regard to mortality rates in Central America and the Latin Caribbean in 2005, for instance, is closer to the regional average of the early 1980s. These inequities in health are expressed as large disparities in health status, differential access to health care, and disproportionate exposure to health risks—unsafe water and sanitation, malnourishment, pollution, and exposure to climatic and geographic threats.

Health inequities in the Americas are extensive and profound, as expressed in countless examples, including among others:

- The greatest share of maternal mortality takes place in the poorest countries of Latin America and the Caribbean.
- Life expectancy at birth ranges from a minimum of 68.8 years in Central America to a maximum of 77.9 years in North America (2005).
- Differences in life expectancy among countries are even more dramatic, particularly the gap between the richest and the poorest, which has widened to nearly 20 years.
- Although women have a life expectancy at birth that is on average six years greater than that of men, the social status of many women compromises the quality of their lives.
- The differential distribution of newly emerging health threats and their risk factors have further exacerbated health inequalities in the countries.
- Some 218 million people are without protection against disease risk because they lack social security coverage in health; and 100 million are without access to health services due to geographic location, economic barriers, or the lack of health service facilities near their homes or workplaces.

The status of women. One of the main constraints to completing the primary health care agenda is the status of women. While women represent over two-fifths of the labor force in Latin America and the Caribbean, their economic advancement is curtailed because they have difficulty securing paid jobs, earn less, are kept out of some occupations, and work disproportionately in the informal sector. Thus, despite the international community's commitment to gender equality, the lives of millions of women and girls throughout the Region are compromised by discrimination, disempowerment, poverty, and violence. Attainment of the third MDG—promoting gender equality and empowering women—will reap the "double dividend" of bettering the lives of both women and children (*11*).

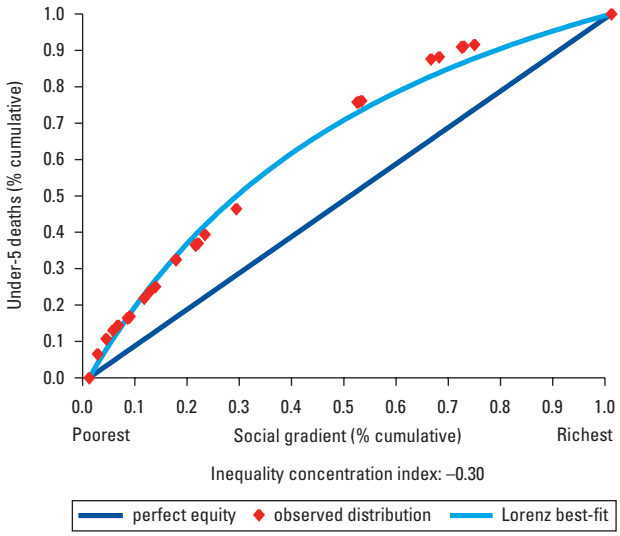
The status of ethnic groups. In the Americas today, between 45 and 50 million people belong to more than 400 unique ethnic groups—around 7% of the regional population; 40% of the rural population in Latin America and the Caribbean; and over 40% of the total population in Peru, Guatemala, Bolivia, and Ecuador. The incidence of poverty is higher among indigenous groups in the Americas, and they experience higher levels of illiteracy,

greater unemployment, and less access to health care services—including vaccination against preventable diseases. They suffer disproportionate rates of maternal and infant mortality, malnutrition, and infectious diseases (*12*). "In Mexico, there are an estimated 96.3 doctors per 100,000 people nationally, but only 13.8 per 100,000 in areas where indigenous people make up 40% or more of the population" (*13*). One of the principal problems for indigenous people is the lack of official documentation. In any country, birth registration is important because it gives an individual an official identity as a member of society and may be needed for access to services later in life. Latin America and the Caribbean have among the highest rates of birth registration in the developing world: 92% in urban areas and 80% in rural areas. But indigenous children are less likely to be registered at birth: "in the Amazonian region of Ecuador only 21% of under-fives have a birth certificate, compared with the national average of 89% . . . [and] more than 85% of Bolivians living in rural indigenous communities lack the official documentation that would allow them to inherit land, register their children in school, or vote" (*14*).

Infant and child health. Despite significant improvements in child survival in the Americas since the "health for all" initiative was launched in 1978, a profound inequality in its attainment has persisted unabated. The distribution of the risk of dying before age 5, as reflected by child mortality rates, in the population of the Americas—ranked from poorest to richest according to their country's national gross income per capita (purchasing power parity-adjusted)—shows an inequality concentration index of –0.3, which means that the poorest 20% (quintile) of the regional population concentrates almost 40% of the total number of child deaths, whereas the richest 20% accounts for only 8% of child deaths (Figure 4).

The Region of the Americas has made huge progress in reducing infant and child mortality rates. Notwithstanding the achievements in reducing mortality in the very young, differences in child mortality continue to prevail among countries as well as within them. In countries with high child mortality rates (e.g., Bolivia, Peru, Guatemala, and Brazil) but also in others with relatively low rates (e.g., Colombia and Belize), significant internal inequalities persist. Three of the many critical determinants of health inequalities among infants and children are ethnic group, geographic location, and education. In Bolivia, Ecuador, Guatemala, Mexico, and Panama, which have collected information on ethnic group and mother's area of residence (i.e., urban vs. rural), infant mortality rates are consistently higher among rural indigenous populations than among their non-indigenous rural peers as well as among urban indigenous populations (see Chapter 2). Similarly, an analysis of inequalities in mortality of children under 5 in relation to maternal education in Bolivia, Brazil, Colombia, the Dominican Republic, Guatemala, Haiti, and

FIGURE 4. Inequalities in child survival: under-5 mortality concentration curve and index, the Americas, around 2005.



Source: Pan American Health Organization. Health Situation in the Americas. Basic Indicators 2006.

Peru indicates that child mortality level and mother's educational level are inversely related; moreover, the same analysis shows that, although overall mortality dropped greatly between the late 1980s and the early years of the present century, the size of the mortality gaps among the educational segments remained practically unchanged (*15*).

What are the constraints that must be overcome to achieve the fourth MDG—that is, to reduce child mortality by two-thirds? Principal among them are the lack of safe water to drink, exposure to disease-bearing mosquitoes, lack of immunization, and poor nutrition. The great majority of childhood deaths could be prevented with the proven technologies of the child survival revolution—breastfeeding, vaccinations against the main childhood diseases, clean water sources, oral rehydration therapy, and bed nets to prevent malaria. In fact, the interventions needed to prevent and treat the causes of death in children that could lead to a two-thirds reduction in child mortality are available, "but they are not being delivered to the mothers and children who need them" (*16*).

The children most at risk are those in the poorest countries and in the most deprived communities within countries; those who are discriminated against because of gender, race, or ethnicity; those affected by HIV/AIDS; those lacking good nutrition; those who have been orphaned, many as a result of AIDS, and end up responsible for themselves and often for their siblings; those subjected to violence, abuse, or exploitation; those who have to work for a living; and, in general, those who lack access to essential

goods and services. For instance, in Latin America and the Caribbean in 2003, of all children under age 18, 6.2% were orphans; and, during the period 1999–2004, 8% of females and 11% of males in the 5–14 year age group were involved in child labor. The persistence of inequalities in health are further confirmed by the ranking of perinatal disorders and malnutrition among the 10 leading causes of death in several Latin American countries and in subnational areas of others—information that reflects a high proportion of childhood deaths, as most occur in the first years of life.

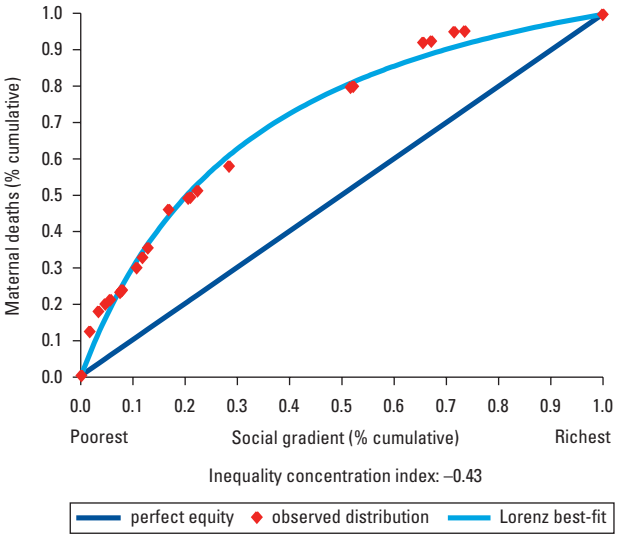
Maternal health. Many public health scholars consider that, in addition to life expectancy, a country's health status can best be judged by its maternal survival "marker": "if the maternal mortality rate drops, it can be assumed that a population's other health problems are also improving; if, on the other hand, maternal mortality remains the same, other attempts to improve the population's health will ultimately have little effect on its well-being" (*17*). Each year, more than 22,000 women in Latin America and the Caribbean die from complications of pregnancy and childbirth. Most of those deaths would be preventable if appropriate interventions and care were available throughout pregnancy, childbirth, and the postnatal period (*18*). And, although maternal mortality has declined significantly in the Region in recent decades, in five countries the maternal mortality rate exceeds the rate registered 60 years ago in the United States. The Americas still had a rate of 70 deaths per 100,000 live births in 2006, and if only Latin America and the Caribbean are considered the rate rises to 91.1, with Haiti registering the highest rate at 523 and Chile the lowest at 17.3 (*1*). Figure 5 reflects the magnitude of the inequality in maternal mortality in the Americas: the poorest 20% of the regional population concentrates 50% of the maternal deaths, whereas the richest quintile only accounts for 5% of those deaths (inequality concentration index = –0.43). Pregnancies among adolescents, for the most part unplanned, have reached 20% of total pregnancies in many countries, a situation implying evident challenges for those future mothers and their children.

As expressed in the fifth MDG, the world community has committed to reducing maternal mortality by three quarters. Toward that end, the Regional Strategy for Maternal Mortality and Morbidity Reduction in the Americas is founded on firm convictions:

> Maternal death is preventable; effective interventions are known; and investment in safe motherhood will not only reduce maternal and infant death and disability, but will also contribute to improved health, quality of life, and equity for women, their families, and communities. Safe motherhood interventions are among the most cost-effective in the health sector, particularly at the primary care level (*19*).

Persistent inequalities in access to health services and resources are at the core of child and maternal survival in the Americas (Figure 6). Paramount health indicators such as availability of physicians per population, proportion of deliveries attended by skilled personnel, low birthweight prevalence, and public health expenditure as a proportion of the gross domestic product are unequally distributed along the income quintiles of the Region's population, where the more socioeconomically disadvantaged are the ones with disproportionately higher health risks. It bears noting, however, that the percentage of births attended by skilled health personnel in the Americas compares favorably with the rest of the world: in 2004, seven of eight deliveries in the Americas were attended by skilled personnel.

FIGURE 5. Inequalities in maternal health: maternal mortality concentration curve and index, the Americas, around 2005.

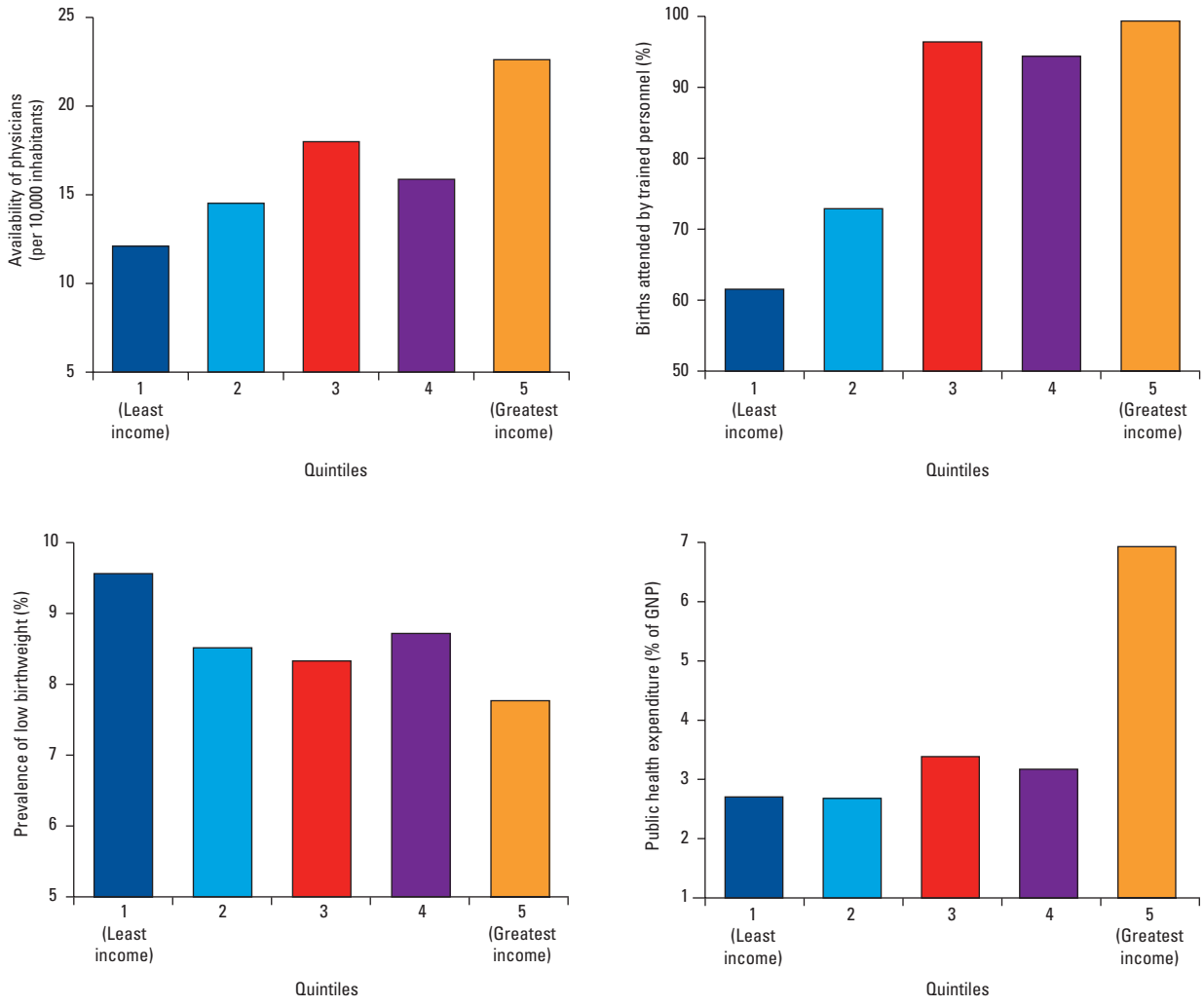


Source: Pan American Health Organization. Health Situation in the Americas. Basic Indicators 2006.

Nutrition. An important indicator of a country's nutritional status is the proportion of newborns with low birthweight—i.e., <2,500 g. Birthweight largely depends on the nutritional status of the mother during pregnancy and prior to conception. In that regard, birthweight also becomes an indirect indicator for evaluating maternal nutrition and, up to a point, for predicting the future development of the child.

Of the two forms of child growth failure, length and weight, that of length—or stunting—is three to six times more prevalent in Latin America and the Caribbean. Since underweight can be reversed but stunting is permanent, children with stunted growth are at risk of becoming overweight, thereby putting them at an increased risk of developing chronic diseases in adulthood. It is in the first two years of life both when stunting can occur and when efforts to prevent it through good nutrition are most op-

FIGURE 6. Inequalities in health services resources and access, by income quintiles, the Americas, around 2005.



Source: Pan American Health Organization. Health Situation in the Americas. Basic Indicators 2006.

portune. In general, the trend data show very slowly declining prevalence of stunting. Brazil is the country with the most significant reduction, 60% in 10 years, followed by Colombia and the Dominican Republic, with declines of slightly more than 40% during roughly the same period. Notwithstanding, it is troubling that, as of 2000, the growth of one in every two children in Guatemala and one in every three children in Bolivia, Honduras, and Peru was stunted (Chapter 2).

Preventing and controlling local endemic diseases. Despite a reduction in its incidence, **malaria**, a disease that is preventable, continues to constitute a significant public health problem. More than one million people—most of them children under 5—die each year from the disease, and in the Americas malaria is the cause of 0.4% of deaths among children under 5 (*20*). Malaria transmission still occurs in 21 countries of the Americas, and an estimated 250 million people live in zones at risk for transmission, 40 million of which reside in moderate- and high-risk areas. Of the approximately one million cases reported annually, three-fourths are caused by the principal parasite, *Plasmodium vivax* (*21*).

In recent years, **dengue** has been on the rise, increasing from almost 400,000 cases in 1984 to over 430,000 cases in 2005 (*1*). Carried by the *Aedes aegypti* mosquito, dengue flourishes in areas with poor sanitation and high precipitation; there is no vaccine or cure for the disease, and people can best deal with it by keeping their homes free of breeding places for the mosquito. In January 2007, Paraguay declared an epidemiological alert as new

"Hypertension, or high blood pressure, is a silent but dangerous disease affecting an estimated 140 million men and women of all ethnic backgrounds in the Americas."

Mirta Roses, 2003

cases of dengue began to emerge; by early February some 9,000 cases had been reported, including 40 cases of dengue hemorrhagic fever, prompting the declaration of a national emergency. As a result, health authorities in Paraguay, Argentina, Brazil, and Bolivia stepped up prevention in border areas, including intensified surveillance and control measures.

An ongoing health priority throughout the Americas, **tuberculosis** afflicts over 350,000 people, and 50,000 die of the disease every year. The regional disease rate was 26.8 per 100,000 in 2004, with Latin Caribbean and Andean Area countries reporting rates as high as 61.5 and 55.5 per 100,000, respectively. This situation is aggravated by TB/HIV coinfection and the resistance of tuberculosis to multidrug therapy, which jeopardizes attempts to control the disease throughout the Region.

The so-called **neglected tropical diseases**—which can cause excruciating pain, disfigurement, and disability—vary in distribution, but are directly associated with poverty, malnutrition, lack of schooling, and unemployment. Their burden is substantial among the 568 million people living in Latin America and the Caribbean, where the estimated currently infected populations (and, where relevant, the percentage of the total population in 2005) are, respectively:

Chagas' disease: 18 million (3.2%)
Trichuriasis: 99 million (17.6%)
Ascariasis: 82 million (14.6%)
Schistosomiasis: 3 million cases in Brazil (1.6% of the country's total population)
Leprosy: 86,652 cases
Hookworm infection: 34 million (6%)
Leishmaniasis: 60,000 cases of the cutaneous form of the disease were reported in Brazil in 2003, and 3,500 cases of the visceral form in 2004
Onchocercosis: 63 new cases reported in 2004 from Colombia, Ecuador, Mexico and Guatemala combined (0.3%)
Lymphatic filariasis: 720,000 cases, principally in Haiti (8.4% of the country's total population)
Trachoma: of 150,000 cases examined in Brazil in 2004, 10,000 were found to be positive.

Lack of routine epidemiological surveillance and data collection for the neglected diseases in almost all countries in Latin America and the Caribbean make it very difficult to accurately estimate disease burden, with the exception of leprosy (*22*).

Safe water and basic sanitation. Availability of drinking water has improved in the Americas since 1990, but that improvement has not grown at an even pace throughout the hemisphere. By 2002, 93% of the population in the Americas used improved sources of drinking water, while coverage in the North American region (the United States and Canada) was 100%, in Central America was 83%, and within that subregion, in Guatemala the proportion of the population using improved sources of drinking water was only 75%. The differences are greater between urban and rural populations. In Brazil, for example, the proportion of the urban population using improved sources of drinking water reaches 96%, while the rural population having service is only 58%. Basic sanitation services reach even less of the regional population, 84%, and in addition to the marked differences between urban and rural access, the total (urban and rural) coverage in Central America and the Latin Caribbean is much lower relative to other subregions—63% and 66%, respectively (Figure 7). The situation is critical in rural areas of a few countries like Guatemala, Belize, Haiti, and Bolivia, where coverage of improved sanitation facilities in rural areas is between 17 and 23%. The relationship between coverage of water and sanitation services and levels of health and human development is described in Chapter 3. Among other examples of that relationship, the regional child mortality rate due to diarrheal diseases was 3.7% and as high as 7.8% in the Andean subregion in 2000–2005.

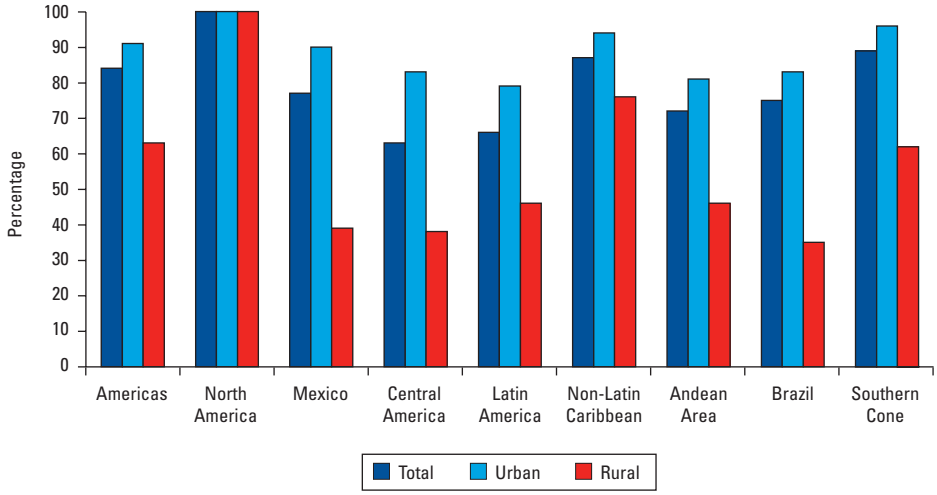
In summary, while great advances are underway in science and technology, not all of humankind is benefiting from them. A gap still exists between the targeted (2015) and recent (2005) rates of reduction in child mortality, while within each country there are further gaps in the rates. Although progress has been extraordinary—diseases have been eradicated or eliminated and the public health infrastructure has been strengthened—it has been uneven. Some countries still have a significant proportion of their populations living in districts where vaccination coverage remains below 95%. Sporadic outbreaks of diphtheria and pertussis still occur because of an accumulation of susceptibles missed by routine national programs. This accumulation also puts countries at risk for large measles outbreaks when importations of the measles virus occur, as recently happened in Venezuela (2001–2002), Colombia (2002), and Mexico (2003–2004). Thus, although progress has been scored toward attainment of the goal of health for all, the agenda remains unfinished.

PROTECTING HEALTH GAINS

Improvements in human health in the Americas for over a century have been profound, extensive, and unprecedented.

After 1840, the upward trend in life spans proceeded at a surprisingly sustained and uniform rate of increase of 2.5 years

FIGURE 7. Proportion of the total, urban, and rural populations using improved sanitation facilities, Region of the Americas, main subregions, and large countries, 2002.



Source: Pan American Health Organization. Health Situation in the Americas. Basic Indicators 2006.

per decade for the next 160 years. . . . Even though life expectancy in high-income countries exceeds that in developing regions, convergence is notable. In 1910, for example, a male born in the United States could expect to live 49 years, but had he been born in Chile, his life expectancy would have been only 29 years. By the late 1990s, in contrast, U.S. life expectancy had reached 73 years and that of Chile had reached 72 years (*23*).

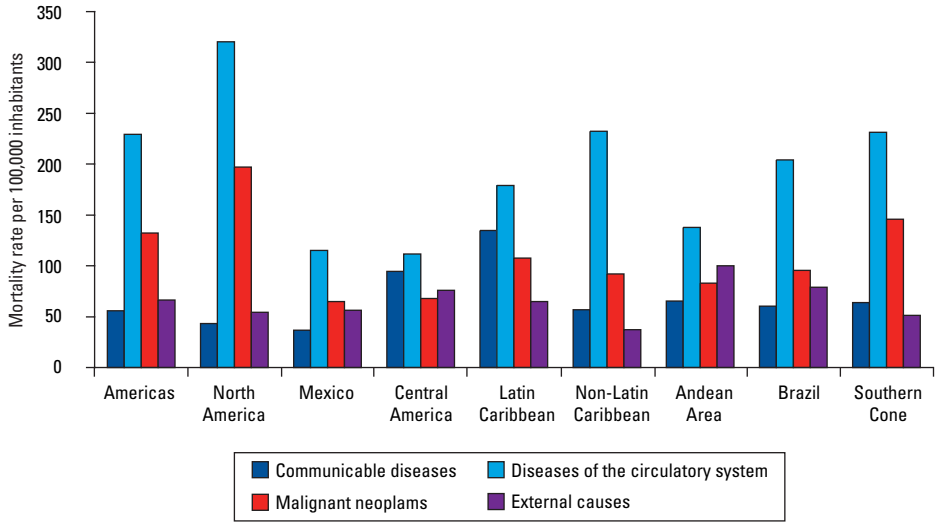
And gains have continued since the 1990s. Infant and child mortality have fallen significantly: the under-5 mortality rate decreased from 54 per 1,000 live births in 1990 to 25 per 1,000 live births in 2005—a 54% drop. The infant mortality rate decreased from 42 to 19 per 1,000 live births (from 2001 to 2005, depending on the country). Diseases that at one time could wipe out entire populations and leave survivors disfigured and crippled—smallpox, poliomyelitis, measles, and tuberculosis—no longer do. Life expectancy has lengthened from 56 years of age in 1960 to almost 75 years in 2006.

These gains can be attributed to a mosaic of variables, among them: changing demographics, improved economic productivity, greater urbanization, with more access to health services; increased food supplies; advances in medical science; more and better sanitation services; strengthened institutions, especially technical progress in the application of simple treatments such as oral rehydration therapy, preventive care such as better hygiene and vaccination, innovative treatment methods for some communicable diseases, such as the directly observed treatment strategy (DOTS); institutional and managerial innovations in public health services, training and epidemiological surveillance; increases in financing of health interventions; social security; greater agricultural productivity, infrastructure, education; and social changes such as improvements in the status of women. As countries have taken advantage of technical advances, they have experienced proportionately significant progress in health.

Certainly, one of the major reasons for the breathtaking improvements in child survival in the Americas is the success of national immunization programs (for an in-depth analysis of the situation with regard to immunizable diseases, see Chapter 2). Of all the regions of the world, the Americas was the first to eradicate smallpox and poliomyelitis and to eliminate measles and neonatal tetanus by attaining high levels of immunization coverage. Thanks to those efforts, the peoples of the Americas now live free of indigenous polio and measles; neonatal tetanus, diphtheria, and pertussis have been well controlled; protection coverage against rubella has increased significantly, and new vaccines, have been added to national immunization programs and their application has been sustained. Countries' efforts to reduce child and infant mortality rates have resulted in avoiding the deaths of millions of children. The focus now is on sustaining immunization achievements and reaching the people who have not benefited from existing and new vaccines.

To protect the gains achieved, countries will have to persist in their efforts to extend the coverage rates of their national immunization programs. Health gains are not necessarily cumulative and permanent. Their underlying causes must be managed and maintained. Otherwise, the progress that has been achieved in health can stop and even reverse. Outbreaks of diseases preventable by

FIGURE 8. Estimated mortality rates due to broad groups of diseases, Region of the Americas and main subregions, 2002–2004.



Source: Pan American Health Organization. Health Situation in the Americas. Basic Indicators 2006.

immunization have occurred in some countries due to reduced vaccination coverage. Economic crises can result in malnutrition among the general population. Furthermore, sustained health progress can be threatened with reductions in investments in health, natural disasters, war, violence, and other forms of social unrest, and the emergence of new diseases and risks. The focus must be on the strengthening of national institutions that will ensure that accomplishments in health in the Americas continue and are scaled to the entire Region. To protect the gains attained, it will be necessary to:

- Strengthen and expand vaccination programs
- Sustain DOTS for tuberculosis
- Provide safe blood
- Ensure food security and food safety
- Keep free from foot-and-mouth disease
- Mitigate the impact of emergencies and disasters
- Produce core health data
- Improve epidemiological surveillance systems
- Monitor and analyze health inequities
- Share health data, information, and knowledge

CONFRONTING EMERGING CHALLENGES

The epidemiological profile in the Americas has undergone significant changes in recent decades as many of the old public health problems have been solved, while new ones emerge and old ones reemerge. Over the next 10 years, deaths from chronic diseases will increase by 17% and, most alarmingly, deaths from diabetes will increase by over 80% (*24*). The projected increase in the burden of chronic diseases is attributable to aging of the population as well as to unhealthy behavior and choices that individuals and whole communities make related to poor nutrition, overweight and obesity, tobacco and alcohol. As described in Chapter 2 of this publication, in almost all countries, chronic degenerative diseases have replaced communicable diseases as leading causes of illness, disability, and death, except in Haiti where communicable diseases remain the leading cause of mortality with a total estimated rate of 351.2 per 100,000, followed by diseases of the circulatory system with a mortality rate of 227.9 per 100,000 (*25*). Diseases of the circulatory system, malignant neoplasms, chronic respiratory diseases, and diabetes have become the leading causes of death, along with external causes such as accidents, homicides, and other sources of violence (Figure 8).

An analysis of the disease burden in the Americas in 2006 indicates that the leading causes of death that have the greatest effect on years of life lost in males are diabetes, AIDS, and homicides; their effects, however, occur in different age groups, with homicides being a fundamental problem of young adults and adults; AIDS of adults; and diabetes of persons ≥50 years of age. The disease burden in females shows a different pattern: the leading causes are diabetes, AIDS, and lung cancer, with diabetes mainly affecting women over 45 years of age; AIDS, young women; and lung cancer, associated with a new pattern of tobacco consumption among females, women over 45 years of age. External causes—especially homicides and motor vehicle accidents—and HIV/AIDS lead to many more male than female deaths, primarily

in young people, and are thus the principal reason why life expectancy has increased more in women than in men, an increase of as much as five to eight years in several countries (*26*).

During the past decade, and in good measure due to the growing permeability of transnational borders, diseases once thought to have been brought under control—such as tuberculosis, malaria, dengue, plague, yellow fever—have been reappearing, while relatively new communicable diseases—such as HIV/AIDS, SARS, and more recently, West Nile fever and the new variant of avian influenza (H5N1)—are emerging as major health threats.

After the bioterrorism-related anthrax cases reported in several cities of the United States during 2001, those threats were expected to continue, challenging national surveillance and response systems. Early detection of a bioterrorist attack is crucial to decrease illnesses and deaths, especially in the event of a covert attack with a biologic agent. Better knowledge of the geographic distribution, incidence, and epidemiological characteristics of potential bioterrorism endemic agents, particularly zoonoses, is needed to initiate investigations of a suspected outbreak or terrorism attack.

Concern about health threats from excessive antibiotic use is increasing in the Americas, particularly in those countries of Latin America where antibiotics are available to the public without medical prescription. Excessive use of antibiotics among outpatients has contributed to the emergence and spread of antibiotic-resistant bacteria in many communities; important common pathogens such as *Mycobacterium tuberculosis, Escherichia coli, Salmonella* spp., *Staphylococcus aureus,* and *Streptococcus pneumoniae* have developed resistance to common antibacterial drugs, complicating treatment for the diseases they cause. On the other hand, antimicrobial-resistant foodborne infections caused by improper use of antibiotics in animal production have contributed to the resistance of *Salmonella* spp. and *Campylobacter jejuni.* While new biological markers and DNA microarray technologies are being developed, the challenge going forward will be to devise simple, computerized diagnostic technology that permits rapid identification of antimicrobial resistance soon after the onset of symptoms (*27*). While the use of new antimicrobial agents and the improved use of currently available antimicrobial drugs will become standard practice in high-income countries, resulting in good treatment and rare complications, proper treatment of antimicrobial-resistant infections will not be available to the poor, thus perpetuating health inequities. Such is already the case with the HIV/AIDS epidemic, which—despite good coverage in the Americas of antiretroviral drugs—is expected to expand among poorer groups of population (*27*).

Aging of the population. In most countries of the Americas, the population is aging due to longer life expectancies and declining or stabilizing fertility rates. In the last 25 years, life expectancy at birth in the Americas has increased by 7 years, and the average life expectancy exceeds 70 years—with a seven year difference in the average between North America and Latin America and the Caribbean. Of the Latin American and Caribbean population born today, 78.6% will live longer than 60 years and four out of 10 will live beyond 80 years. Older people place greater demands on health services, because they require more frequent and comprehensive care and need services related to the treatment of chronic diseases and disabilities. The assessment of health policies and of the performance of health services for the elderly should target increasing the years of life free of disability after age 60 (*28*).

Unhealthy lifestyles, risky behaviors, and noncommunicable diseases. One of the biggest culprits in the increase in noncommunicable diseases is unhealthy lifestyles. The nutritional habits of the population of the Americas are changing: increasingly, people are consuming fewer fruits, vegetables, legumes, whole grains, and cereals and more processed foods, milk, refined cereals, meats, and sugar. Poor nutrition is further complicated by deficiencies of micronutrients—iodine, vitamin A, iron, zinc, and folate. At the same time, 30-60% of the population in the Americas do not achieve the minimum recommended levels of physical activity. The occupational shift from manual labor and agriculture to the service sector in most of the Region means that physical activity is generally on the decline. That decline has been aggravated by increased urbanization, motorized transportation, and the introduction of labor-saving devices and computers in the home. This coupling of poor diets and sedentary lifestyles is leading to an epidemic of noncommunicable diseases among adults (see Chapter 2). According to WHO, of the 6.2 million deaths estimated to have occurred in the Region in 2005, more than three-fourths were related to chronic diseases, and over the next 10 years 53 million people will die from a chronic disease. At least 80% of premature heart disease, stroke, and type 2 diabetes, and 40% of cancer in the Americas could be prevented through healthy diet, regular physical activity, and avoidance of tobacco products; chronic disease death rates could drop an estimated 2% per year over the next 10 years, saving almost 5 million lives (*24*). A recent study of more than 3,000 young people from 26 developing countries—including Argentina, Brazil, the Dominican Republic, Honduras, Mexico, and Peru—singled out "developing a healthy lifestyle" as one of the five pivotal phases of life that can impact the future of youth: "It has been estimated that nearly two-thirds of premature deaths and one-third of the total disease burden of adults can be associated with conditions or behavior begun in youth" (*29*). Again, those conditions or behaviors, many of them interrelated, include smoking, heavy alcohol consumption, drug use, traffic accidents, unsafe sex, violence, sedentary lifestyles, and poor nutrition. Unless those trends reverse, the impact on health in the future will be huge, and the demand for health services overwhelming.

"Despite significant ongoing efforts to expand and improve maternal health services in the Region, including the introduction in recent years of insurance to cover the cost of mother and child care, maternal mortality ratios have changed only slightly in the past decade."

Mirta Roses, 2004

Overweight and obesity. Changes in consumption patterns along with lower levels of physical activity are linked with increased prevalence of overweight (body mass index equal to or greater than 25 and less than 30 kg/m^2) and obesity (body mass index equal to or greater than 30 kg/m^2). Surveys conducted in Latin American and Caribbean countries in 2002 found that 50–60% of adults and 7–12% of children under 5 years of age were overweight or obese. In Argentina, Colombia, Mexico, Paraguay, Peru, and Uruguay, more than half of the population is overweight and more than 15% obese. Even more disturbing, the trend is growing among the Region's children: in Chile, Mexico, and Peru, an alarming one in four 4–10 year olds is overweight. Between now and 2015, the prevalence of overweight in the Americas is expected to increase in both men and women. In the United States, 64% of adults are overweight and 30.5% are obese. Canada trails somewhat behind the United States, with 50% of adults overweight and 13.4% obese (*30*).

Diabetes. As of 2006, an estimated 35 million persons were diabetic in the Americas—a number that is projected to increase to 64 million by 2025. The projected increase in the prevalence of diabetes parallels the increase in the prevalence of obesity, a leading risk factor for diabetes. It is estimated that in 2003, diabetes was associated with 300,000 deaths in Latin America and the Caribbean. For women of all ages in almost all countries of the Americas, diabetes is among the three leading causes of death. Prevalence rates are highest in the adult population of the Caribbean: prevalence of diabetes ranges from 18% in Jamaica and 17% in Barbados to an estimated 8% in South America and 6% in Central America (*31*). The total societal cost of diabetes in Latin America and the Caribbean is estimated to be US $65 billion.

Tobacco. WHO has estimated that tobacco is the second cause of preventable deaths, after high blood pressure, and responsible for 900,000 deaths every year in the Americas (see Chapter 3). If current trends continue, tobacco will result in the deaths of over 1 billion people in the 21st century. In 2006, over 20% of youth 13–15 years of age in the Americas had used tobacco, the highest prevalence in the world for that age group (*32*); more than 70% of smokers in the Region started using tobacco before age 18. In 2000, the prevalence of smoking among youth 13–15 years of age ranged from 14–21% in the Caribbean countries to 40% in the Southern Cone. In the United States and Canada, almost one-quarter of youth used tobacco. Tobacco use is estimated to currently cause one million deaths every year in the Americas, with the Southern Cone having the highest mortality rate due to smoking tobacco. An estimated one-third of heart disease and cancer deaths in the Region are attributed to tobacco use. Increasingly concentrated in poorer countries and among the poor within them, tobacco is associated with chronic obstructive pulmonary disease, cancer, and heart disease; contributes significantly to asthma and deaths from tuberculosis; and is projected to cause an exponential increase in deaths—6.4 million people a year by 2015, 50% more than HIV/AIDS.

Alcoholism. For its part, alcoholism has been shown to be the leading risk factor, among 27 different such factors, for the burden of disease in the Americas (Chapter 3). Intoxication, alcohol dependency, and biological damage due to the consumption of alcohol can cause long-term health and social consequences. "Alcohol-related diseases account for about 4% of global disability-adjusted life years (DALYs) each year and for 8.8% in Latin America and the Caribbean" (*33*).

Malignant neoplasms. Malignant neoplasms are responsible for one-fifth of all chronic disease mortality in the Americas, accounting for an estimated 459,000 deaths in 2002. This represents an increase in cancer deaths of one-third since 1990. Lung and colon cancer are included in the 10 leading causes of death in many countries of the Americas. Prostate, breast, and uterine cancers are also major causes of death in several countries of Latin America. In North America, lymphatic tissue neoplasm is one of the 10 leading causes of death in the general population and among the top five among 5–24 year olds (*26*).

Diseases of the circulatory system. Circulatory system diseases combined represent approximately 20% of all deaths in the Americas, the highest proportion of leading causes of death in all countries of the Region. Within that group, ischemic heart disease and cerebrovascular disease deaths figure most prominently. Hypertensive diseases and heart failure also stand out as major causes of death; 8–30% of the population in the Americas have hypertension, a strong independent risk factor for heart disease and stroke. Mexico, which has conducted risk-factor surveys, has experienced an increase in the prevalence of hypertension from 26% in 1993 to 30% in 2000 (*26*). These diseases always appear among the five or 10 principal causes of death for the general population (both sexes).

Mental health problems. Mental health problems impact both the young and the old in the Region, albeit in different forms. For the year 2000 suicide, the most reliable indicator of

TABLE 2. Projection of Alzheimer's disease prevalence (in millions), in Latin America and the Caribbean, in North America, and worldwide, in 2006 and 2050, by stage of disease.

	Prevalence (in millions)					
	2006			2050		
	Overall	Early stage	Late stage	Overall	Early stage	Late stage
Latin America and the Caribbean	2.03	1.14	0.89	10.85	5.99	4.86
North America	3.10	1.73	1.37	8.85	4.84	4.01
Worldwide	26.55	14.99	11.56	106.23	58.75	47.48

Source: Ron Brookmeyer, Elizabeth Johnson, Kathryn Ziegler-Graham, and H. Michael Arrighi, "Forecasting the Global Burden of Alzheimer's Disease," Johns Hopkins University Department of Biostatistics Working Paper 130, 2007.

mental health problems, was the third leading cause of death among 10–19 year olds and the eighth leading cause of death among 20–59 year olds in the Americas overall. Alzheimer's disease and cerebrovascular dementia was the 10th leading cause of death for the entire population of the Americas and ranked eighth for persons 60 years and older. Alzheimer's disease and cerebrovascular dementia was one of the leading causes of death in Canada, Chile, Cuba, Puerto Rico, the United States, and Uruguay. The prevalence of Alzheimer's disease in the Americas—estimated at 2.0 million cases in Latin America and 3.1 million cases in North America—is expected to increase as countries' populations age. More than 26 million people worldwide have Alzheimer's disease, a number expected to quadruple to over 106 million by 2050, including almost 9 million in North America and almost 11 million in Latin America and the Caribbean (Table 2).

Road traffic injuries and deaths. In 2002 the Americas registered approximately 374,000 deaths due to road traffic accidents, and every year many hundreds of thousands suffer injuries and disabilities due to these accidents (Chapter 3). Road traffic injuries ranked as the ninth leading cause of death for the Region overall for 2002. For the same year, low- and middle-income countries in the Americas had road traffic injury mortality rates of 16 deaths per 100,000 population, and high-income countries experienced 15 deaths per 100,000 population (*34*).

Violence. In 2002 the Region of the Americas registered approximately 384,000 homicides and 179,000 suicides (Chapter 3). In countries where motor vehicle accidents is not the first leading cause of death among adolescent and young adult males, homicide is. Homicide rates per 100,000 population exceed very high or critical levels in a number of countries, notably Brazil (28), Venezuela (35), Jamaica (44), El Salvador (45), Guatemala (50), Honduras (55), and Colombia (65). The number of violent crimes is increasing throughout the Region, compromising health conditions and overburdening health services. Approximately one in three women in Latin America and the Caribbean has been a victim of sexual, physical, or psychological violence at the hands of domestic partners (Table 3). Violence against women not only exacts an enormous public health toll, it impedes social and economic development by preventing its victims from contributing fully to their communities.

TABLE 3. Percentage of women reporting having experienced violence, five countries in the Americas, 2000–2005.

	Physical violence	Sexual violence
Bolivia	53	12
Peru	42	10
Colombia	39	12
Ecuador	31	12
Haiti	29	17

Source: National Demographic and Health Surveys for Bolivia (2003), Peru (2000), Colombia (2005), Ecuador (2004), and Haiti (2000).

Emerging threats. The international spread of infectious diseases poses problems for global health security, in large measure due to factors related to today's interconnected and interdependent world. Among other factors raising the risk of spread of these threats are population movements, through tourism, migration, or as a result of disasters; growth of international trade in food and biological products; social and environmental changes linked with urbanization, deforestation, and alterations in climate; and changes in methods of food processing, distribution, and consumer habits. These factors once again demonstrate that infectious disease events in one country or region are potentially a concern for the entire world (*35*). Another concern is the possibility of outbreaks resulting from intentional or accidental release of biological agents. Both epidemics that might occur naturally and those due to the release of biological agents present a threat to

"Every year in Latin America and the Caribbean some 200,000 people are diagnosed with tuberculosis, and an estimated 50,000 or more die as a result of the disease. Yet tuberculosis is curable; these deaths are preventable. Only with strong and active community participation can we improve the detection of cases and increase the number of people who can be cured. Tuberculosis can affect everyone, without regard to age, sex, race or social status; but poor and neglected populations are particularly vulnerable to the disease."

Mirta Roses, 2004

global health security. Moreover, because of the impact that problems such as SARS, avian influenza, food contamination, and antibiotic resistance to pesticides can have on a nation's and the international community's economy and security, their surveillance must now encompass many new areas and agents (*36*).

> What is new [about the international spread of diseases] is: (1) the broader scope of identified 'emerging' or 'reemerging' diseases; (2) the extent of globalizing factors that unleash them; (3) the intrusion of new actors in the arena of public health surveillance, bringing in economic or security concerns; (4) the blurred limits between potential hazards of deliberate and natural outbreaks; and (5) the ever-increasing demand from the public and press agencies for real-time information. . . . At the international level, it is not enough to acknowledge the global threat of emerging or reemerging diseases and to focus on a strategy based on externally driven surveillance and response. With equal urgency, preparedness for future epidemics has to comprise a parallel overhaul of health systems, including the essential issues of human resources development, governance, and equity in access to care (*37*).

HIV/AIDS. After sub-Saharan Africa, the Caribbean is the second subregion in the world most affected by HIV/AIDS. An estimated 1.2% of the Caribbean population, one quarter of a million people, was living with HIV in 2006. The Caribbean's largely heterosexual epidemics occur in the context of harsh gender inequalities and are being fuelled by a thriving sex industry: half of the people infected are women, and young women are 2.5 times more prone to be infected than young men. Nearly three-quarters of them are in the Dominican Republic and Haiti, but HIV prevalence is high throughout the subregion: 1%–2% in Barbados, the Dominican Republic, and Jamaica; 2%–4% in the Bahamas, Haiti, and Trinidad and Tobago. North America had an estimated prevalence of 0.8% or 1.4 million persons and Latin America 0.5% or 1.7 million persons. Despite prevention campaigns to reduce the risk of HIV infection, advances in treatment, and expanded treatment coverage to extend the lives of persons living with AIDS, the HIV/AIDS pandemic continues to be one of the Region's leading public health challenges.

From 1981 to 2005, more than 1.7 million persons with AIDS were officially reported in the Americas, with 38,000 of these cases younger than 15 years of age. The percentage of females with AIDS reported in the Americas increased from 6% of all prevalent AIDS cases in 1994 to approximately 31% in 2005, with this general trend repeated in all subregions. Although the number of persons living with AIDS continues to slowly increase in the Americas, the best estimate of the number of deaths due to AIDS in the Caribbean has declined from 2004 to 2006, thanks in good measure to the advent of improved treatment and expanded coverage of treatment. Many Latin American countries have also shown a decline in the number of AIDS deaths over the past decade. For the period 2003-2005, however, the number of AIDS deaths increased from 53,000 to 65,000, which means that on average 200 people die from HIV/AIDS every day in Latin America and the Caribbean. HIV/AIDS antiretroviral treatment coverage goals for the Americas—as part of the regional commitment to WHO's "3 × 5" initiative to treat 3 million people by the end of 2005—had been surpassed by 13% by the target deadline. It is estimated that in June 2006 three-quarters of persons needing antiretroviral treatment for HIV/AIDS in the Americas were receiving that treatment—the highest coverage in the developing world. During 2006, according to reports from 28 countries in the Americas, more than 1 million people were tested for HIV/AIDS, and access to counseling, testing, and prevention of mother-to-child transmission also increased substantially (*38–41*).

Pandemic influenza. Since the influenza pandemic of 1918, which killed tens of millions of people worldwide, many prevention and control measures have been taken to reduce the likelihood of similar or worse pandemics, including implementing influenza surveillance, developing vaccines and antiviral drugs, and taking preventive actions such as the recent rapid destruction of 1.5 million poultry in Hong Kong to control the spread of avian influenza. Worldwide disaster and emergency surveillance and preparation for pandemic influenza, especially the highly mutational, highly pathogenic avian influenza subtype H5N1, is ongoing. To date, avian influenza subtypes are primarily limited to the spread from bird to bird, occasionally jumping to and sickening a human host. No sustained human-to-human spread of this influenza has yet been identified; however, serious concern exists that a dangerously pathogenic strain of this influenza will mutate or acquire other viral genes, allowing it to easily pass from human-to-human. Certainly, avian influenza, only the latest serious influenza threat, will not be the last (*42–45*).

RESPONDING TO THE POPULATION'S HEALTH NEEDS

Meeting the pending health needs, sustaining the health gains, and confronting the emerging health challenges described in the foregoing pages will require strong public sector governance, equitable delivery of services, sufficient financing of the health system, a critical mass of well-prepared health workers, coordination among the various social sectors, and a robust pro-health alliance among countries and the international community. Chapter 4—"Public Policies and Health Systems and Services"—analyzes in depth health systems, financing of health care, health legislation, human resources, essential public health functions, health technologies, scientific health information, and the renewal of primary health care. And Chapter 5—"Health and International Cooperation in the Americas"—presents information on official development assistance, public-private partnerships, technical cooperation among developing countries, and regional integration processes.

Governance. In some countries, advances that had accrued from democratization processes that began in the 1980s and became further entrenched in the 1990s have been compromised by recent political, social, economic, and institutional crises—not least of which has been widespread corruption. Those crises have tarnished the image and credibility of public institutions and of the political class in general and, in so doing, have contributed to increasing social unrest, violence, and insecurity. In some countries, the promises of self-determination, the return of power to people and communities, and effective citizen participation have gone unfulfilled. In others, where decision-making power has been incompletely transferred from the national to the subnational level, local institutional capacities have not been adequately developed. Giving public agencies greater managerial autonomy has not always resulted in better, more efficient services. While much has been said about the need to increase donor assistance and transfer technological solutions for health in the developing world, recipient countries have a stake in, and must be held accountable for, developing the institutions that can implement health programs and technology.

Improving public health in the countries of the Americas takes strong states, strong public health systems, and adequate infrastructure. Growing demands on the health care system are triggering greater competition for limited resources. Anticipating and responding adequately to the many epidemiological, technological, and organizational challenges to health, social security, and surveillance systems will require ever-better governance and management of those systems. Although health sector reform and modernization of the State, widely promoted in the 1990s, yielded some benefits and facilitated the involvement of new actors in the sector, particularly the private sector, reform focused primarily on financial and organizational aspects, relegating critical public health issues to the sidelines. As a result, the role of government in key areas weakened, as did the capability of ministries of health to exercise their steering role and perform essential public health functions. Now regulation of the sector, taking into consideration both its public and private components, poses a major challenge. Meeting that challenge will require that the two biggest health infrastructure constraints—segmentation and fragmentation—be addressed (see Chapter 4).

The division of the health system into subcomponents that "specialize" in different population groups—or its **segmentation**—generally takes the forms, both for provision and insurance, of: (1) a public subsystem oriented toward the poor; (2) a social security subsystem that covers formal workers and their dependents; and (3) a for-profit private subsystem used mainly by the wealthiest segments of the population. By imposing conditions on access to the latter two subsystems that can only be met by those groups that are socially, occupationally, and financially well placed, segmentation prevents or complicates the implementation of cost-effective health care interventions and makes it harder to reach some population groups, thereby consolidating and entrenching inequities that especially affect the poor, the formally unemployed, the indigenous, and women. Changes in the labor market, particularly growth of the informal economy, have aggravated this situation. Ethnic origin is a factor limiting health-system access: in at least five countries in the Region—Bolivia, Ecuador, Guatemala, Paraguay, and Peru—belonging to an indigenous group or speaking only an indigenous language constitutes a barrier. And, since access to health systems is linked to formal-sector employment, women experience greater exclusion than men: because of their domestic duties, over half of all women in the Region are not gainfully employed, and, when they are, they are more likely than men to work in the informal sector and in part-time occupations that are not usually covered by social security; moreover, although over 30% of households in the Region are headed by women, women are often dependents who, along with their children, rely heavily on the person who has health coverage being employed and remaining in the household (*26*).

Where there is **fragmentation** of services in the health sector—that is, when the different subsystems do not operate in a coordinated, synergistic way, but tend instead to ignore and even compete with each other—a centering of health service delivery in hospitals and on individual care tends to result, to the detriment of public health services. Fragmentation hinders implementation of cost-effective interventions; makes it difficult to standardize the quality, content, cost, and application of health measures; raises their cost; and encourages inefficient use of resources within the system. Such inefficiency is exemplified by the coexistence of low hospital occupancy rates in the social security

subsystem and high percentages of unmet demand for services in the public subsystems of Bolivia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, and Paraguay. In some countries—among them, Bolivia, Honduras, Guatemala, and Ecuador—the fragmentation of services has a territorial dimension, where deficient referral and counter-referral mechanisms in rural areas severely constrain health care delivery (*26*).

Provision of and access to health services. In many countries, the gap between those who can and those who cannot access health care is widening. The reasons for that growing inequity, and the resultant profound adverse consequences for the population's health, are many: the downside of globalization, poverty, the loss of employment, lowered incomes, and great disparities in income distribution, all of which can lead to impoverished living conditions, social fragmentation, and high vulnerability. Although many of the countries have undertaken pro-poor health-related interventions, such interventions do not always reach those most in need; to the contrary, they often favor and extend the health gap between the rich and the poor. Research published in the 2004 *World Development Report* showed that in the 21 countries studied, the highest income quintile received, on average, 25% of government health service expenditure compared with only 15% among the lowest quintile (*46*).

Notwithstanding persistent gaps in health care access in the Region, some countries have made notable progress in their quest for equitable delivery of health services through pro-poor interventions. Among outstanding examples of these success stories are:

- **Colombia** created and financed an equity fund that increased health insurance coverage for the poor and lowered financial barriers to the use of services. "While insurance coverage among those in the highest income quintile increased modestly with the reform, from 60% in 1993 to 81% in 2003, insurance coverage among the poorest quintile of income increased from 9% in 1993 to 48% in 2003" (*47*).
- **Mexico** provided direct cash transfers to poor families so that they could use those funds to pay for health services; by 2003, almost 60% of the people reached by this program belonged to the poorest 20% of Mexico's population and 80% of the beneficiaries were in the poorest 40% of the country's population (*48*).
- **Honduras, Peru,** and **Nicaragua**, set up "social funds" to encourage communities and local institutions, especially in poorer areas in those countries, to take the lead in identifying and carrying out small-scale investments in health clinics and water and sanitation systems. "These poverty-targeted investments tend to increase the utilization of health services, especially maternal and child health, and translate into improved health incomes including significant reductions in infant and child mortality" (*49*).

Financing. Serious deficiencies in health system financing persist: some countries have extremely low health expenditures, while others are excessively dependent on external resources and thus highly vulnerable. In many countries, out-of-pocket spending has greatly increased, with the consequent regressive effect that the poorest are the most affected. The amount and distribution of public health expenditure are critical factors in the equity/inequity that characterize health systems. Where highly segmented health systems prevail—most countries in Central America (El Salvador, Guatemala, Honduras, Nicaragua) and in the Andean Area (Bolivia, Ecuador, Peru, Venezuela)—public sector health funding is generally low and public sector coverage therefore limited, while private expenditure is high and covers mostly private individuals. In those countries, where a large percentage of the population is poor, serious inequities in health care access result from low public sector spending on health and high out-of-pocket expenditure, which is proportionately higher in the poorer of those countries (*26*).

Around 2005, national health expenditure for all countries in Latin America and the Caribbean accounted for approximately 7% of the region's gross domestic product or an annual expenditure of approximately US$500 per capita (Chapter 4). Approximately 45% of this expenditure corresponded to public spending on health—on services by ministries of health, other central government and local government institutions, and through compulsory contributions to privately run health funds or social security institutions. The remaining 55% corresponded to private expenditure, including direct out-of-pocket expenditure to purchase health goods and services and to cover health services consumed through private health insurance plans or pre-paid health care plans. Notably, because women have more need to use health services, their out-of-pocket health expenditures tend to be higher than men's—a gender-based inequity that looms even larger when considering that women's incomes average only about 70% of those of men.

In addition to the amount of public sector spending on health, its distribution among the poorest groups in a population (generally referred to as its "progressiveness") is a critical factor in those groups' access to health services. Out-of-pocket spending by the poorest households is lower in countries where the distribution of public spending is tilted toward low-income groups; Chile, Costa Rica, and Uruguay distribute about 30% of public spending among the lowest-income population. Inversely, where distribution of public spending disregards the greater needs of the poor, the poor have to pay more for access; in Ecuador and Guatemala just over 12% of public health expenditure goes to the first income quintile (the poorest), while the fifth quintile (the richest)

receives over 30%; Peru distributes public spending across all income groups alike. Chile, Costa Rica, and Uruguay have national health insurance systems, while Ecuador, Guatemala, and Peru have highly segmented health systems (*26*).

Health workers. It stands to reason that the greater the number of health workers available to a population the greater their influence will be on its level of health. A clear case in point is the relationship between adequate numbers of health care providers and reductions in maternal and infant mortality: as the availability of health workers increases, the rates of mortality decrease. The inverse occurs in countries with a low density of health workers: the rate of mortality among children under 5 increases; the maternal mortality rate increases; and the proportion of deliveries handled by qualified personnel decreases (*50*).

In 2005, an estimated 21.7 million people comprised the full-time health workforce in the Americas. Many of the countries in the Region have a critical shortage of health workers, and that shortage is expected to grow more acute with the projected growth in population, the aging of the health workforce, and the ever-increasing burden of disease. In less-developed countries, competition for limited human resources and the international migration of health workers are expected to further destabilize the workforce; already, 72% of the countries of the Region have experienced a loss due to migration.

Serious imbalances persist in the distribution of health workers in the Region, both within countries and from country to country. The optimal (density) ratio of physicians and nurses to inhabitants is 25:10,000. In 11 countries that ratio is greater than 50, which translates into 30% of the population in the hemisphere having 73% of all physicians and nurses. In 15 countries the density ratio is below 25, which translates into 20% of the regional population having 6% of the human resources in health; 128,000 more physicians and nurses would need to be added to the workforce to reach the optimal ratio. Women make up almost 70% of the health work force, and yet they also represent a disproportionately high percentage of unemployed health workers, which averaged 6.2% in a sample of 13 countries. The within-country distribution of health workers is greatly uneven, with urban areas having from 8 to 10 times more physicians than rural areas. At the regional level, while in North America there are three nurses for every one physician, in Latin America and the Caribbean there are three physicians for every nurse (*51*).

Intersectoral engagement. Many advances in health conditions over the past decades have been the result of collaboration between the health sector and other social sectors: water supply and sanitation and the environment in general, education, labor, agriculture, and transportation, to name a few. The potential of the synergies of intersectoral collaboration was recognized in the 1978 Declaration of Alma-Ata. Decades later, in 2000, the multisectoral approach drove elaboration of the Millennium Development Goals, which, as has been seen, propose to integrate action to reduce poverty and hunger and promote education, women's empowerment, health, environment, and global partnerships to further those goals.

> *"The countries have made a tremendous effort to interrupt the mother-to-child transmission of HIV/AIDS. Likewise, spread of the disease by blood transfusions has halted. Access to treatment has improved significantly: the Americas was the first region in the world to negotiate a reduction of the price of antiretrovirals. But the regional situation is uneven, and in some countries less than 30% of those who need treatment are receiving it."*
>
> **Mirta Roses, 2006**

International involvement. The international architecture of development assistance for health—the cooperation of multilateral organizations, bilateral assistance, and private philanthropic aid—has undergone radical change over the past decade: "new multilateral organizations, initiatives, and foundations have assumed a prominent role in financing health, nutrition, and population activities, among them the Global Fund to Fight AIDS, Tuberculosis, and Malaria; the Global Alliance for Vaccines and Immunization (GAVI); the Global Alliance for Improved Nutrition (GAIN); and the Bill and Melinda Gates Foundation" (*52*). While the actors have proliferated, the debate regarding the most desirable investment of international cooperation in health goes unresolved (Chapter 5).

The challenges of persisting inequities and unsolved health problems are being confronted by concerted intersectoral national and international efforts as well as through the opportunities afforded by initiatives such as the Millennium Development Goals and renewal of the primary health care movement. The prospects for improving health in the Region are addressed in Chapter 6 by a group of internationally renowned experts who offer their comments on the "Health Agenda for the Americas, 2008–2017," which has been adopted by the governments of the Region, and provide advice to policymakers regarding how to implement each of its eight areas of action.

* * *

In summary, the current health status of the peoples of the Americas is a reflection of interactions and changes in the size, composition, distribution, and behavior of the population; the dynamic and continuing shifts in the nature, incidence, and burden of disease; and, to a large extent, the ongoing and often

dramatic turns in the political, social, economic, and physical environment in which individuals, communities, nations, and the Region as a whole are developing.

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