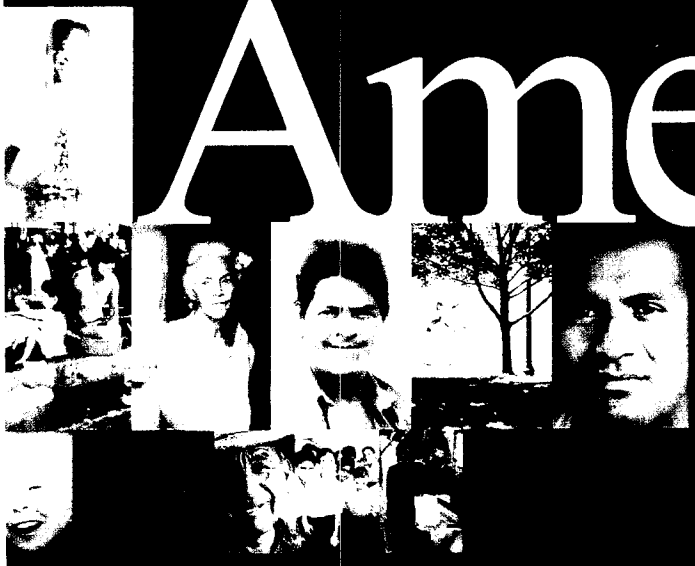
Scientific and Technical Publication No. 587

Health in the Americas



VOLUME I
2002 Edition

Pan American Health Organization

Celebrating 100 years of Health

tries ranges from 12% to 17%. The lowest percentage of elderly persons who smoked and quit is seen in Barbados (21%), and the highest percentage (32%) in Brazil and Chile. Elderly men are two to three times more likely to smoke than elderly women in all SABE survey countries. The highest percentage of elderly men who smoke is seen in Cuba (47%) and the lowest in Barbados (12%). In addition, 48% of males in Barbados never smoked, compared to only 22% in Cuba.

The general profile of health behaviors in the Region reveals that older persons are not actively participating in promoting their own health and well-being, and that health systems are not properly preventing or managing chronic diseases in this population. The training and education of primary health workers determine the focus of health education and the present generation of health and social workers were trained with a focus on infectious diseases and child and maternal health. Primary health care services have not yet changed their focus to prevent and manage chronic diseases and the complex health needs of older persons.

HEALTH OF INDIGENOUS PEOPLES

As discussed in Chapter 2, indigenous peoples generally tend to lack access to basic health and social services. Potential barriers to access are physical distance from health services, insufficient financial resources, and the lack of culturally appropriate, quality health services. Language, illiteracy, disregard for indigenous peoples and their beliefs, and lack of understanding of traditional health systems and healing practices can also be barriers. Indigenous peoples tend to live in rural, often isolated areas. Bolivia, Guatemala, Honduras, and Ecuador, which have large numbers of indigenous peoples, are also among the countries with the highest percentage of rural populations (*106*). As a result, many indigenous peoples are self-employed and do not have access to employment-related health services. In Guatemala, only 30% of indigenous peoples are estimated to be employed and have access to health services, compared to 60% of the general population (*107*). In Ecuador, nearly 90% of indigenous peoples lack sufficient social coverage needed to access basic services (*108*).

Significant disparities between the health of indigenous peoples and that of the general population continue to exist. For example, malnutrition and parasitic and communicable diseases, such as malaria, yellow fever, dengue, cholera, and tuberculosis continue to affect a large proportion of indigenous peoples. In Ecuador, the primary causes of morbidity and mortality are all largely preventable—respiratory diseases, diarrhea, tuberculosis, parasitic infections, and malnutrition (*109*). In Colombia, indigenous peoples have limited water and sanitary services, food security, and health services (*110*). In the United States, certain health problems affect indigenous peoples to a greater extent than they do the population as a whole. For example, mortality rates for alcoholism are 627% greater among indigenous peoples than among the population as a whole, mortality rates for tuberculosis are 533% greater, diabetes mellitus 249% greater, accidents 204% greater, suicide 72% greater, pneumonia and influenza 71% greater, and homicide 63% greater (*111*).

In general, indigenous peoples suffer disproportionately from psychosocial problems resulting in high rates of suicide, depression, substance use (alcohol, tobacco, and drugs), and violence. In Canada, roughly one-fourth of all injury deaths among Aboriginal peoples are suicides, for a rate three to four times higher than the national average (*112*).

Child and infant mortality and morbidity is still a serious problem for indigenous peoples. For example, while Panama's national infant mortality rate is 17.6 deaths per 1,000 live births, in indigenous areas it reaches 60–84 deaths per 1,000 live births (*113*). In Brazil, the national average of women over the age of 15 who have lost at least one child born alive is 16%, while among indigenous women the average is 33% (*107*).

The overall and persistent poor health status of indigenous children is particularly problematic, considering that the indigenous population tends to be younger than the general population. For example, in the United States, approximately 33% of the indigenous population was younger than 15 years of age, compared to 22% for the general population (*111*). Many of the causes of illness for indigenous children are preventable. In Peru, 25% of deaths among children under 1 year of age are due to acute respiratory infections; 12% of deaths are due to diarrhea (*114*).

Data from Central and Latin America clearly indicate that health and nutritional status, as well as the general socioeconomic conditions, are worse among the indigenous population than among non-indigenous groups. For example, in El Salvador, Guatemala, Honduras, Nicaragua, and Panama, the prevalence of stunting is higher in those municipalities that have the highest proportions of indigenous population (*115*). In El Salvador, an estimated 40% of indigenous children under age 5 years are malnourished, compared to the national average of 23% (*116*). In Honduras, an estimated 95% of indigenous children under 14 years of age suffer from malnutrition (*117*).

Maternal mortality among indigenous women continues to be a serious problem. In Honduras, the maternal mortality rate has fallen by over 40% during the last decade, from 182 to 108 deaths per 100,000 live births. However, the rates in areas with large numbers of indigenous peoples, such as the departments of Colón and Copán, were 200 and 203 deaths per 100,000 live births, respectively (*117*).

Indigenous communities continue to face worse environmental conditions than the general population. In Peru, only 42% of indigenous households have direct water connections, and 49% draw water from streams, ponds, or wells (*9*). Indigenous peoples in northern Canada are exposed to higher levels of persistent organic pollutants and metals than the general population (*118*).

Such noncommunicable diseases as diabetes, obesity, and cardiovascular disease, often the result of changes in diet and lifestyle, are increasingly affecting indigenous peoples. For example, the Pima Indian tribe, of Arizona, U.S.A., has the highest rate of diabetes in the world (*118*), and some 50% of Pimas between the ages of 30 and 64 have diabetes (*119*). On a more positive note, the heavy reliance on traditional, locally available foods seems to reduce the risk for certain health problems. For example, indigenous groups in the Canadian Arctic have among the lowest age-standardized prevalence rates of diabetes in the country.

The Response of the Region's Countries

At the country level, there has been progress toward improving the health conditions of indigenous peoples. For example, the old ways of interacting with indigenous peoples, grounded in assimilation-oriented approaches and paternalism, are clearly giving way to new policies centering on participation, consensus building on issues of mutual interest, and promotion of forms of development that respect and benefit indigenous peoples and, at the same time, are consistent with national objectives (*120*). By including indigenous peoples in dialogues between governmental and nongovernmental sectors, public policies are given a chance to reflect their interests and concerns (*121*).

The holistic model of health emphasizes equilibrium between an individual's physical, spiritual, mental, and emotional states. Traditional healing systems are still vital parts of the healing strategies of most indigenous communities, as many communities rely on traditional knowledge of plants, animals, and the environment for basic survival and to address medical needs (*122*). In North America, aboriginal peoples see traditional healing practices and philosophies as the foundation for community wellness and empowerment. Indigenous communities in Canada and the United States utilize such approaches as healing circles, sweat ceremonies, and the passing of knowledge from elders to younger generations.

Throughout the world, Western medical care and traditional healing systems coexist to some degree. According to WHO estimates, at least 80% of the rural population in developing countries rely on traditional healing systems as their primary source of health care (*121*). A study conducted in Bolivia, Chile, Costa Rica, Ecuador, Guatemala, Mexico, Nicaragua, Peru, and the Dominican Republic (*123*) verified the existence of traditional health systems in each country, and found that in some countries, the number of doctors is only slightly higher than the number of traditional healers. For example, there are approximately 3,500 doctors and 2,500 traditional healers in Nicaragua. In several countries, there are 2.5 or more traditional healers per 10,000 population.

The ethnic and cultural heterogeneity of indigenous peoples makes it difficult to adopt a single program or universal health care model. Ongoing health sector reforms in the countries of the Region also pose challenges, particularly due to their emphasis on improving efficiency and reducing costs. For example, user fees tend to be regressive and are an additional financial burden for most poor indigenous people.

Within the Region, several governments have established or expanded national-level departments for indigenous health in the country. For example, in 1999, Ecuador created a new office to works towards improving the quality of life of indigenous peoples by recognizing and strengthening indigenous health systems and by ensuring adequate access to other health systems and services.

Many countries have implemented programs specifically targeted at improving the health and social conditions of indigenous peoples. For example, in 2000, Argentina initiated a new program to foster health promotion and disease prevention among indigenous communities (*124*). A key component of this program is respect for the traditional beliefs and health systems of indigenous populations.

Canada and the United States also have made progress towards improving the health status of their respective indigenous populations. This is largely attributable to improved access to health services and to public health measures. However, in both countries, this progress has slowed in recent years as disease patterns have changed, and injuries, chronic diseases, and lifestyle-related diseases have emerged as new challenges (*111*). However, the United States is implementing an initiative to eliminate racial and ethnic disparities in health by the year 2010. The initiative addresses the health disparities of American Indians and Alaska Natives in the areas of infant mortality; diabetes mellitus; cardiovascular disease; HIV; breast and cervical cancer screening and management; and child and adult immunization (*125*).

International Organizations and Intersectoral Integration

Virtually all governments and international organizations understand the importance of partnering with indigenous peoples in order to achieve equity in health status and access to needed services. There is a new appreciation that programming is more effective when there is indigenous ownership and when culturally specific approaches have been incorporated. There is also a new emphasis on the right of indigenous peoples to preserve their cultural values and institutions (*126*).

The Health of Indigenous Peoples Initiative, launched by PAHO in 1993, represents the contribution of the Organization and its Member Governments to support both the United Nations' International Year of the World's Indigenous Peoples (1993) and the International Decade of the World's Indigenous Peoples (1995–2004).

Other international organizations have also acknowledged the need to improve the efficacy of poverty interventions that focus on indigenous populations. For example, both the IDB and the World Bank have created development and poverty reduction programs focused on indigenous communities.

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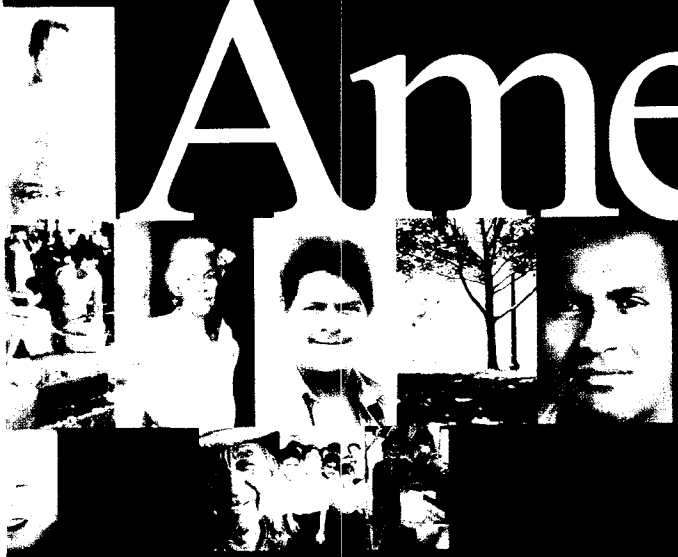

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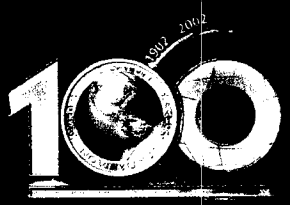

Celebrating **100** years of Health

Pan American Health Organization

continues to provide social, economic, and health services to this vulnerable group. Support services are provided by welfare aides and home help workers, and several social and recreational programs are organized for the senior population.

Family Health

The 1991 census reported that approximately 42% of households were headed by women. The Citizens Welfare Division offers specialized and professional welfare services geared to promote and maintain family stability and meet needs of persons coping with personal crisis and other family and social problems. The Directorate of Gender Affairs, a division of the Ministry of Health, is responsible for managing services for abused women, including a 24-hour crisis hot line, a court advocacy service, a safe haven for victims, and counseling and support for victims in an attempt to deal with these problems.

The Collaborative Committee for the Promotion of Emotional Health in Children is a nonprofit organization that addresses the needs of emotionally disturbed and abused children and their families through the operation of the Child and Family Guidance Center. During 1999, the center saw a total of 66 cases, ranging in ages between 3 and 24 years. Behavioral disorders were cited as the most frequent problem, with a total of 22 children seen for this cause; other cases seen at the center were due to slow learning (11), child abuse (6), and truancy (5).

Workers' Health

The country has no specific workers' health program, but national workmen's compensation legislation applies to most workers. All employed persons are required to participate in the Medical Benefit and Social Security schemes through monthly contributions of a fixed percentage of salary; employers also are required to make monthly contributions on behalf of their employees. The Medical Benefits Scheme provides coverage for medical and surgical care and services, including hospitalization, medication, laboratory tests, X-rays, electrocardiography, and other services. The scheme also provides medication to persons diagnosed with certain chronic diseases, including hypertension, heart disease, diabetes, cancer, glaucoma, and mental illness. Social Security benefits cover illness, disability, maternity, and pension.

The Disabled

The Council for the Handicapped provides and assists with special programs for the disabled. School-aged children who are hearing-impaired attend the School for the Deaf and Hearing-Impaired, which is supervised by the Ministry of Education; children who are blind or visually impaired also attend the school. Mentally challenged children attend a special school.

The Government, through the National Vocational and Rehabilitation Center for Disability, assists disabled adults with job placement and transportation to and from their work sites. Those disabled persons who are unable to work are provided with a government stipend. The center offers agricultural, sewing, and handcraft projects, as well as skills-training activities in such areas as communication, reading, writing, sign language, independent living skills, and home management. The Society of and for the Blind provides technical and craft training for the visually impaired.

Indigenous and Other Special Groups

Antigua and Barbuda attracts many immigrants, primarily from Dominica, the Dominican Republic, Guyana, Jamaica, Montserrat, and Saint Vincent and the Grenadines, most of whom come in search of employment. The immigration of citizens from Montserrat deserves special mention: many of them came to Antigua in 1995, fleeing the volcanic activity of the Soufriere Hills Volcano in that country. An estimated 4,000 Montserratians resided in Antigua at the peak of immigration, with many relocating to Antigua to stay with friends or relatives. Antigua has put together contingency plans in the event of a mass evacuation of Montserrat.

Antigua also has experienced an increase in the number of Spanish-speaking immigrants. Many of those coming from the Dominican Republic have Antiguan ancestry, since many Antiguans migrated to the Dominican Republic in search of work in the 1920s. These migration issues have mainly affected the educational, health, and social systems, which were strained as they worked to incorporate these individuals. Language barriers also have had to be overcome in providing health care and education to these new residents. There is no indigenous population in Antigua and Barbuda.

By Type of Health Problem

Natural Disasters

The most common natural disasters in Antigua and Barbuda are hurricanes and tropical storms. In October 1998, Antigua was ravaged by Hurricane Georges, which resulted in 2 deaths and 34 injured persons. Damages to public facilities, agriculture and fisheries, the environment, health tourism, education, churches, homes, and businesses were estimated at US$ 74,074,074.

In 1999 hurricanes José and Lenny struck Antigua in October and November, respectively. There was one death and 13 injured persons; more than 3,500 homes were damaged or destroyed. Estimates put the financial cost to homes, the environment, roads and bridges, health, utilities, agriculture and fisheries, and businesses at US$ 91,640,519.

Vector-borne Diseases

Vector-borne diseases of significance are dengue and malaria. In 1997, there were 10 confirmed cases of dengue on the island. In 2000, there were 11 confirmed cases of dengue due to serotype 3 virus; there were no cases of dengue hemorrhagic fever or dengue

per 100,000 live births. The differences found between provinces are greater than in the case of other health indicators. While in the city of Buenos Aires and in provinces such as Río Negro, Chubut, Córdoba, and Buenos Aires fewer than 20 maternal deaths per 100,000 live births were reported, provinces such as Chaco and Formosa had rates of 130 and 160 per 100,000 live births. The Lorenz curve of maternal mortality (Figure 5) shows that 40% of the births that occurred in the provinces with the highest maternal death rates accounted for almost 80% of these deaths. The Ministry of Health has launched a program to promote local and national meetings to analyze maternal mortality in order to detect and rectify the factors responsible for these deaths as well as the problems that lead to serious illness during pregnancy, childbirth, and the puerperium.

The Elderly (60 years and older)

In 1999, the population of adults aged 60 and older numbered almost 5 million, accounting for 13.4% of the total population. This age group has grown 24.6% since 1970. Fifty-six percent of all adults in this age group were women and 44% were men, but whereas there is very little difference in the proportions of men and women between the ages of 60 and 64, after age 79 there are twice as many women as men. There is no accurate information on the number of older adults who are institutionalized. Although there is a social tendency to keep older persons at home with their families, the number of homes and residences for the elderly has grown appreciably in the last 10 to 15 years. In 1999, there were 20 nursing home beds per 1,000 population aged 70 and over in 13 provinces. The retirement age is 65 years for men and 60 years for women, but the possibility of gradually increasing it to 70 and 65, respectively, is under study.

Lifestyle-related diseases account for the greatest proportion of mortality among older adults. Cardiovascular diseases (30.7%), neoplasms (19.1%), and cerebrovascular diseases (8.9%) are the leading causes of death in this age group, with an increase in cardiovascular diseases and a proportional decrease in neoplasms among the oldest members. The proportional weight of neoplasms is greater among women, especially those between 60 and 70 years of age.

Workers' Health

Between July 1999 and June 2000, 433,495 accidents were reported among workers in the formal sector of the economy. Of these, 96% were minor, 3.5% were serious, and 0.2% were fatal (955 deaths). The average accident rate was 76.7 per 1,000 exposed workers, but the rate in the construction sector was more than twice that: 185 per 1,000. In the manufacturing sector, it was 128 per 1,000 and in the agricultural sector, 103.1 per 1,000. A 1996 law on occupational hazards seeks to prevent risks and compensate workers for occupational injuries. Under this law, almost 5 million workers are covered by workers' compensation insurance. In addition, the Occupational Safety Administration has established the "Safe Work for All" plan, which includes a number of preventive measures for businesses with high workplace accident rates.

The Disabled

Based on data from a household survey conducted in 1991, it was estimated that 7% of the population (around 3,250,000 people) suffered from some type of disability. According to disability certificates for the period 1997–2000, 41.6% were mental disabilities, 41.1% motor disabilities, 13.8% sensory disabilities, and 3.5% visceral disabilities.

The National Service for the Rehabilitation and Advancement of Persons with Disabilities oversees several programs to support rehabilitation centers and services, care for needy disabled persons, recreation and sports activities, and training of human resources in orthotics and prosthetics and in occupational therapy.

Indigenous Groups

According to the Institute for Indigenous Affairs, the estimated indigenous population in 1999 was 372,996 (1.1% of the total population). The largest indigenous groups were the Colla (98,000), Mapuche (60,000), Diaguita (50,000), Mataco (40,000), Tobas (39,000), and Quechua and Aymara (38,500). However, health statistics are not broken down by ethnic group. The majority of the indigenous groups reside in the lowest-income provinces (Groups III and IV), the exception being the Mapuche, who live in Patagonia and the province of Buenos Aires.

By Type of Health Problem

Natural Disasters

Floods are the highest-risk event, although some provinces are also at risk for seismic activity and volcanic eruptions. During 2000, more than 36,000 were victimized and 21 died or went missing as a result of floods in northwestern Argentina, and in the province of Buenos Aires there were more than 50,000 flood victims but only one death. Powerful storms and heavy rainfall, a tornado in the province of Buenos Aires, a landslide in Santa Fe, and intense snowfall made it necessary to evacuate the population from some cities. The eruption of the Copahue volcano in the province of Neuquén had a negative impact on tourism, the main economic activity of the region, although it did not cause any deaths.

The Federal Emergency System (SIFEM) was created by executive decree in October 1999 under the cabinet chief. The system coordinates governmental and nongovernmental action in emergency situations. SIFEM encompasses a wide array of government agencies and has an emergency ministerial cabinet consisting of the ministers of the interior, defense, finance, infrastructure and housing, health, and social development and the environment.

2,356 deaths per 100,000 population for 1997, 1998, 1999, and 2000, respectively. A total of 1,682 deaths occurred over the four-year period in this age group (32% of total deaths); of these, 62% were males and 38% were females. In 2000, diseases of the circulatory system was the leading cause of death, for 86% (477), followed by malignant neoplasms (17%), diabetes mellitus (12%), acute respiratory infections (9%), and external causes (5%).

This age group accounted for 11% (1,603) of all hospitalizations in 2000. Diseases of the circulatory system was the leading cause (34%) of hospitalization in 2000, followed by diabetes mellitus (9%), external causes (7%), malignant neoplasms (5%), and acute respiratory infections (5%).

Workers' Health

In 1999, the population at risk covered by Social Security was 57,710. Health insurance claims totaled 1,522 in 1996 and 4,152 in 1999. Most claims were due to sickness (37%) and injury (19%). The leading conditions for sickness claims were respiratory diseases, back pain, and fever. Orange Walk, Corozal, and Stann Creek districts accounted for almost 80% of all injury-related claims. It should be noted that in these districts, where agro-industry is more developed, the age group most affected was the 20–39 group, which accounted for 64.5% of all claimants.

The Disabled

Services for the disabled are provided by the Ministry of Human Development, Women and Children, and Civil Society and the Ministry of Education through its Special Education Unit. The Special Education Unit monitors the delivery of special education programs to disabled children, provides training to teachers in special education delivery, and monitors the integration of these children into mainstream schools.

In 2000, there were 1,991 school-aged children with primary disabilities. These ranged from slow learners to children with speech, visual, and physical disabilities to children with emotional, social, and behavioral disorders. Forty percent (813) of these children were categorized as slow learners, 8.5% had some form of speech or language disorder, 6% had a visual impairment, and 3% had a physical disability. Most children with disabilities live in Belize and Cayo districts, while Corozal and Orange Walk districts have the fewest disabled children. Sixty-three percent of children with primary disabilities were boys.

Indigenous Groups

In Toledo and parts of Stann Creek, where most indigenous peoples live, access to health care is a concern. Medical personnel offer fixed and mobile services to respond to the districts' needs. There is one hospital in Toledo district; a new regional hospital opened in Stann Creek in 1999.

The total fertility rate in Belize is 3.7 children per woman. Fertility rates are highest in both Stann Creek and Toledo districts (5.6 children per woman), where the Garinagu and Maya live. Maya women have a higher fertility rate—up to 10 to 12 children per woman—particularly in Ketchi communities, where marriage and childbearing begin at age 13.

By Type of Health Problem

Natural Disasters

Belize was affected by two major hurricanes during the review period—Mitch in 1998 and Keith in 2000. Although Mitch did not make landfall in Belize, it prompted the largest evacuation in the country's history. Mitch demonstrated the country's vulnerability and the need for a disaster preparedness plan. Hurricane Keith devastated the islands of San Pedro and Caye Caulker and left two-thirds of the country flooded. Keith affected approximately 72,100 persons (30% of the total population).

Vector-borne Diseases

Malaria continues to be a significant public health problem in Belize, despite the decrease in the number of cases occurring in the country during the 1996–1999 period. The number of cases reported over the period was four times lower than the number reported in 1995. Malaria cases ranged from 6,014 in 1997 to 1,441 in 1999. Most of this reduction occurred in the districts of Cayo, Orange Walk, and Corozal. Overall, Toledo District was most affected, with 1,077 (58%) cases in 1999, followed by Cayo (18%) and Stann Creek (16%); these districts accounted for 92% of all malaria cases in 1999. The highest number of cases occurred from June to August, the months with the highest rainfall. Ninety-three percent of the cases in 1996 were due to *Plasmodium vivax* and 6.3% to *P. falciparum*. The proportion of cases due to *P. falciparum* was 2.5% in 1999 and 1.3% in 2000.

In 1995, a total of 107 cases of dengue were reported, of which only 9 were laboratory confirmed. Belize does not have the capacity to conduct serological testing. There were no cases in 1996, and 38 cases were reported between 1997 and 1999.

Diseases Preventable by Immunization

There have been several significant achievements within the expanded program on immunization, such as the elimination of measles and the introduction of the MMR and hepatitis B vaccines. In 1996, when MMR was first introduced, coverage was 74%. It rose to 98% in 1997 and stabilized around 84% in 1998 and 82% in 1999 (Figure 2). Hepatitis B vaccine was introduced into the program in 1999. Coverage for BCG increased over the 1996–1999 period, rising from 90% in 1996 to 96% in 1999. DPT3 coverage increased slightly from 85% in 1996 to 87% in 1999. Coverage for OPV3 averaged 85% from 1996 to 1999.

In November 1996, an outbreak of rubella was reported in a primary school in Belize City. Of the 197 cases investigated, 75

been reported. It is estimated that 5 to 6 of every 10 women are victims of some form of violence in the home, and 2 of every 10 men are psychologically abused by their wives or partners.

Workers' Health

Over the last few years, workers' health has deteriorated because, due to political and socioeconomic conditions, the workforce affords higher priority to means of subsistence than to protection from occupational hazards. Hence, informal production methods, carried out under more hazardous working conditions, are on the rise. As a result of the economic crisis, the increasingly precarious labor conditions, combined with a lack of explicit policies in this area, have undermined the existing institutions' capacity to resolve workers' health issues. In 1997, Law 1,732 on Compulsory Insurance was passed and two pension fund administrators were created. These entities will handle labor risk management until the professional risk insurance companies envisaged in the law are created. Despite the establishment of the Superintendency of Pension Funds responsible for supervising and assessing the activities of the insurance companies, to date no information is available on workers' health for the country as a whole.

Indigenous and Other Special Groups

By and large, the Aymara and Quechua communities in the altiplano and the Andean valleys, and those living in rural areas, have the most critical health indicators in the country; these populations are below the poverty line and over half of them live in indigent conditions. The health situation of the ethnic minority groups inhabiting the Amazon region and the Bolivian Chaco is no less critical; the only reports available are not up to date but show 1990 infant mortality rates at close to 200 for every 1,000 live births among the Pacahura ethnic groups (Madera and Abuná Rivers), Reyesanos (Maniqui River), Guarasugwe (Chaco), Cayubaba (Yata River), and Araona (Manuripi River).

By Type of Health Problem

Natural Disasters

The main threats are flood, landslide and mudslide, drought, and forest fire, all of which occur on a cyclical basis with varying degrees of severity. In the last few years, the most serious consequences have been linked to the effects of the El Niño phenomenon and its economic impact: 40 deaths and losses totaling US$ 837 million in 1997, and 75 deaths and losses amounting to US$ 527 million in 1998, according to ECLAC.

Although earthquakes are not frequent in Bolivia, the threat does exist, mainly in Cochabamba. In 1998, the toll of the Aiquile-Totora earthquake was 75 dead and 74 injured in a population of 7,000 inhabitants. The country has a disaster and emergency response system but is unprepared for medium- and large-scale catastrophes.

Vector-borne Diseases

In three quarters of the Bolivian territory, malaria is actively transmitted through the circulation of *Plasmodium vivax* and *P. falciparum* and the presence of the vectors, *Anopheles darlingi* and *A. pseudopunctipennis*. Half the country's population—3.5 million people—live in areas where malaria is prevalent. In 2000, 31,468 cases of malaria caused by the *P. vivax* parasite were reported [annual parasite index (API) 8.8 per 1,000], 37% below the figure for 1999 (50,037 cases; API 14.3 per 1,000) and 58% less than in 1998 (74,350 cases; API 24.8 per 1,000). This situation contrasts with 1991 when 19,031 cases were reported (API 7.0 per 1,000). In 2000, 2,536 cases of malaria from *P. falciparum* were detected, which was 78% lower than the figure for 1998 (11,414 cases).

Chagas' disease is endemic in 60% of the Bolivian territory, owing to the presence of the *Triatoma infestans* vector. This vast endemic area encompasses 6 departments, 65 provinces, 169 municipalities, and 13,776 communities, with 700,000 infested dwellings in rural and periurban areas alike, jeopardizing the health of 4 million inhabitants. The prevalence of infection by *Trypanosoma cruzi* is estimated at 40% of persons living in endemic areas, 24% of whom show some degree of electrocardiographic change consistent with the disease. Serological screening for Chagas' disease conducted by three blood banks in 1998 and 1999 showed a 17.5% incidence of *Trypanosoma* infection.

The increase in the number of cases of jungle yellow fever during the 1980s was followed by a downward trend in 1990. However, between 1996 and 1999, the incidence of the disease rose significantly (30 cases in 1996, 63 in 1997, 57 in 1998, and 68 in 1999), and then dropped sharply in 2000 (8 cases). Over the last five years, 88 (39%) of these 226 cases occurred in the department of Cochabamba and 65 (29%) in Santa Cruz, the majority in 1999; in effect, 5 of every 8 cases confirmed in 2000 were detected in Santa Cruz. In the last decade, the death rate from yellow fever exceeded 60%. Since 1999, the Expanded Program on Immunization has dealt with the control of yellow fever. In 2000, a mass vaccination program was conducted in the areas at risk. It was then extended to the rest of the country to include the entire population of Bolivia. During 1996–2000, a total of 2,189,340 doses were administered.

Circulation of dengue virus serotype 1 and occurrence of cases of classic dengue in the departments of Santa Cruz, Tarija, and Beni have been documented since 1987. In 1998 and 1999, serological studies of 760 samples revealed an IgM positivity rate of 12.4% and 10 viral isolations: 9 corresponded to serotype 1 and 1 to serotype 2. The latest entomological evaluations reflect high rates of vector infestation in Camiri (74%), Yacuiba (24%), tropical Chapare (19%), Boyuibe (8%), Cuevo (8%), and the city of Santa Cruz (17%). In 1999, 27 cases of classic dengue were identified in the department of Santa Cruz, all in the first 25 weeks of the year. In 2000, 80 cases, 62 of them in Santa Cruz, 12 in Beni, 4 in Tarija, 1 in La Paz, and 1 in Pando, were detected. In 2000, 80% of the cases were recorded between the third week in March and the

gressive increase in the proportion of deaths observed in the group over 60 years of age, which rose from 38% in the period 1979–1981 to 54% in 1998. This proportion ranged from 42% in the North to 60% in the South. In 1998, diseases of the circulatory system (46%), malignant neoplasms (17%), and respiratory diseases (11%) were the leading defined causes of death. A high percentage of the deaths were attributed to ill-defined causes (18%), and this percentage tended to rise in the oldest subgroups of the elderly population.

Older persons accounted for 18% of all hospitalizations in the public health care system in 2000. The main causes were diseases of the circulatory system (28%), respiratory system (20%), and digestive system (10%). Activities aimed at this segment of the population are guided by the National Policy on Health of Older Persons, approved in 1999, which includes guidelines, general strategies, and priorities for action designed to promote healthy aging, maintain and improve the functional capacity of older adults, prevent specific diseases, treat the sick, and rehabilitate those who have limited functional capacity. One of the most important preventive measures is vaccination against influenza and pneumococcal infections through annual campaigns, which, since 1999, have helped reduce hospitalization for respiratory infections. In a campaign conducted in April and May 2001, more than 10 million older adults were vaccinated.

Workers' Health

The information available on occupational diseases and accidents concerns only workers covered under the government social insurance system. This constraint limits the population analyzed to 18.8 million workers, the majority of whom are concentrated in the Southeast (58%) and South (19%) regions, according to data from 1998. In this group, the occupational disease rate was 16 cases per 10,000 insured workers. In the same year, 384,000 occupational accidents occurred (20 per 1,000 insured workers), with 3,800 deaths (20 per 100,000 insured workers). The male death rate (23.3) was markedly higher than the female rate (13.1) in all regions of the country. Of the total number of accidents reported in 1998, 91% were considered typical—i.e., the result of factors associated with the worker's job—while the rest took place during the commute between home and the workplace. Close to 85% of the accidents led to temporary or permanent disability (96% and 4%, respectively).

Responsibility for workers' health in Brazil is shared by the health, labor, social insurance, and environmental sectors, each of which has its own functions and sphere of authority. In the health sector, various recent federal regulatory instruments guide activities aimed at improving the coverage and quality of assistance for workers.

The Disabled

The only available data of national scope, which are from 1991, put the disability prevalence rate at 1.1% of the general population. Since 1989, legal protections for this segment of the population have been expanded, and an increasing number of communities are offering special facilities to improve mobility for the disabled. In 2000, the National Health Council approved a national policy on the health of disabled persons. There are several centers of excellence that serve as national technical reference institutions on the care of people with specific disabilities.

Indigenous and Other Special Groups

The indigenous population in Brazil is estimated at 350,000 people, who belong to some 210 groups and speak more than 170 languages. Although they make up only 0.2% of the total population, indigenous peoples are found in 24 of the 26 states. Each group has its own forms of social, political, and economic organization and ways of relating to the environment and utilizing the land. Around 60% of the indigenous population and 98.7% of the indigenous lands are concentrated in the North and Center-West regions. The health situation of this population is characterized by high mortality rates from malaria, tuberculosis, and other respiratory diseases; diarrheal diseases; and vaccine preventable diseases.

Since 1999, the Ministry of Public Health has exercised direct responsibility for indigenous health through 34 special indigenous health districts linked to the National Health Foundation (FUNASA). Each district has a health team that provides basic care under the supervision of the local and district indigenous health councils. Villages and communities are served by indigenous health agents, trained in basic health care. Linkages with the formal services at the secondary and tertiary levels are supported by "Indian health units," located in municipal referral centers.

The black population of Brazil is larger than that of any other country outside of Africa. This population has some distinctive genetic features, resulting from the interbreeding of individuals of various ethnic groups from different regions of sub-Saharan Africa. In 1999, it was estimated to number 8.6 million blacks and 64 million *pardos*, who together made up 45% of the national population. Around 85% of the blacks reside in the Northeast and Southeast. Additionally, there are some 1,000 remnants of fugitive slave communities scattered around the country. The most frequent health problems in the black population—which include malnutrition, drug use, septic abortions, and violence—are associated with long-standing social inequalities that lead to poverty and reduced access to health services. These inequalities are aggravating factors in diseases such as arterial hypertension, diabetes mellitus, and glucose-6-phosphate dehydrogenase deficiency, which seems to affect the black population predominantly.

Among the genetically determined diseases that occur in this population, the principal one is sickle-cell anemia, the most common monogenic hereditary disease in Brazil. It is estimated that 8,000 persons have the disease and 2 million carry the sickle-cell gene, which implies a high degree of underreporting of cases, since only around 4,000 cases have been identified. An estimated

80% of those with sickle-cell anemia die by the age of 30, but 85% of these deaths are not reported as such. In 1995, a government initiative aimed at heightening appreciation of black culture helped mobilize civil society, the scientific community, and health professionals, which resulted in the formulation of a program for control of sickle-cell anemia and measures to protect the interests of this population group.

By Type of Health Problem

Natural Disasters

The most common natural disasters in Brazil are floods, landslides, cave-ins, forest fires, droughts, and low water levels, which have the heaviest impact on the low-income population in rural and periurban areas. In 1998, 75% of the Northeast suffered a drought that affected 1,429 municipalities. Serious floods also occurred in 1998 in the states of São Paulo, Rio Grande do Norte, and Rio de Janeiro; in 1999 in the states of São Paulo and Acre; and in 2000 in Rio de Janeiro, Alagoas, and Pernambuco. Floods are generally accompanied by a rise in cases of leptospirosis. The National Civil Defense System, established in 1993, coordinates the activities of government institutions and civil society to prevent and assist in natural disasters. The system's operations are guided by a manual, published in 1999, and by the National Civil Defense Policy, instituted in 2000.

Vector-borne Diseases

Malaria is endemic throughout the Brazilian Amazon region, which encompasses the whole of the North and parts of the states of Maranhão and Mato Grosso. More than 99% of the cases reported in the last 10 years occurred in this area, where the annual average number of positive exams was 530,000. The incidence of malaria surged in this area in 1999, returning to the levels seen in the 1970s. Some 632,600 new cases were reported—34% more than in 1998—resulting in 21,100 hospitalizations, mainly of adults and youths of the male sex. The high endemicity of malaria in Amazonia is related to the presence of extractive industries, which generate internal migration and the establishment of makeshift rural establishments. Lack of local capacity for planning, control, evaluation, and efficient provision of services enables the disease to spread over large distances. Despite these difficulties, however, malaria mortality decreased from 0.7 to 0.1 death per 100,000 population between 1986 and 1998. The proportion of cases due to *Plasmodium falciparum* also fell (from 29% in 1996 to 18.6% in 1999). The Plan for Intensification of Malaria Control Activities in Amazonia, launched in 2000, has brought a new perspective to intervention based on intersectoral action.

No cases of yellow fever have been reported in Brazil since 1942, although since the 1970s, there has been a progressive reinfestation of the national territory by the *Aedes aegypti* mosquito, the urban vector of the disease. Jungle yellow fever is endemic mainly in the North and Center-West regions, where a high proportion of deaths are reported (45% to 50%), owing to low levels of case detection in patients who exhibit few symptoms. The disease has spread cyclically to other regions of the country through the years; the most recent upsurges occurred in 1993–1994 and 1998–2001. The last outbreak began with epizootics among simians in the Amazon region and spread to the center of the country, where tourists visiting a nature preserve in the state of Goiás were infected in 1999. The virus continued to spread in a southeasterly direction, where epizootics were detected in 54 municipalities in six states. Since 1998, 48 million people have been vaccinated against yellow fever in the areas affected by the outbreak. The last case reports from the North and Center-West regions were in June 2000.

The country has experienced three dengue epidemics since the detection of the initial cases in Roraima in 1982. The first two (1986–1987 and 1990–1991) were concentrated in Rio de Janeiro and several states of the Northeast region. A total of 104,000 cases occurred in 1991. The third epidemic began in 1995 and peaked in 1998, with 570,000 reported cases. In 1999 and 2000, 207,000 and 238,000 cases, respectively, were reported, more than half of them in the Northeast and around 30% in the Southeast, although all states had dengue cases. In 2000, 40 cases of dengue hemorrhagic fever were reported (33 in the state of Pernambuco). Serotypes 1 and 2 of the dengue virus circulate simultaneously in about 20 Brazilian states, and one case caused by serotype 3 was confirmed in December 2000. The latter case occurred in the environs of Rio de Janeiro. In 2000, 3,592 municipalities were infested with the mosquito *Aedes aegypti*, the disease vector, and transmission of the virus was occurring in 2,137 of them. An *A. aegypti* eradication plan was launched in 1996 and is being carried out, but on a limited basis, owing to weaknesses in epidemiological surveillance and social mobilization activities.

Chagas' disease is currently under control, thanks to specific entomological surveillance activities and improvement of dwellings in the endemic areas. Serologic screening among schoolchildren in 1989 and 1999 found only 329 positive samples among 245,000 specimens, with an overall mean prevalence of 0.13%. In 2000, the international commission on Chagas' disease control of the Southern Cone countries determined that transmission of *Triatoma infestans* had been interrupted in six states (Goiás, Mato Grosso, Mato Grosso do Sul, Paraíba, Rio de Janeiro, and São Paulo), and another four were in the certification phase (Pernambuco, Piauí, Minas Gerais, and Rio Grande do Sul).

Schistosomiasis remains endemic in virtually the entire Northeast region and in the states of Minas Gerais and Espírito Santo in the Southeast. Schistosomiasis continues to spread despite amplification and decentralization of diagnostic testing of stool samples and treatment of cases. In recent years, foci have been identified in the Federal District and in the states of Pará, Paraná, and Santa Catarina, and indigenous transmission has been confirmed in one municipality in Goiás and one in Rio Grande do Sul.

increased with age, to a peak of 33% at age 75. Among those older than 75 years, 44% reported some kind of long-term limitation. Overall, 25% of Canadians in the lower income levels reported some kind of long-term disability, compared to only 14% in the highest income levels.

Most disabilities are non-arthritic back problems, followed by vision or hearing impairments and musculoskeletal problems. The prevalence of the conditions listed above did not increase with age.

Indigenous and Other Special Groups

Aboriginal people remain at higher risk for illness and premature death than the Canadian population as a whole. As a result, life expectancy at birth for males and females is 71.5 years and 75.2, respectively, which is lower than the national figures for both sexes. The leading cause of death among Aboriginal peoples is injuries and poisonings, with a crude rate of 154 deaths per 100,000 population. They also suffer from more chronic diseases such as diabetes (three times more often) and cardiovascular disease than the general population—and there is evidence that the prevalence of these conditions is on the rise among Aboriginal people. In addition, the suicide rate is 2–7 times higher among the Aboriginal population than in the general Canadian population, and a cause of concern, especially among young men in Inuit communities.

The infant mortality rate for Registered Indian Populations in Canada in 1996 was 14 per 1,000—almost three times higher than the national average—although this represents a drop from the rate of 18 per 1,000 recorded in 1986. In Canada there are about 150 SIDS deaths each year, but Aboriginal infants have three to four times as high a risk of SIDS as non-Aboriginal infants.

Aboriginal children and youth have a higher rate of disability than those in the national population as a whole, and Aboriginal children living off-reserve have a higher rate of severe disability than those living on reserves. Inadequate housing and crowded living conditions contributed to higher rates of respiratory problems and other respiratory infectious diseases among Aboriginal children. Children in Aboriginal families also have a higher rate of unintentional injuries and early deaths from drowning, and they are more likely to smoke, drink, and use drugs at a younger age. Surveys of First Nations and Inuit communities reveal smoking prevalence rates two-to-three times higher than the Canadian national average (62%–73%).

Compared to Canadian families as a whole, a greater proportion of Aboriginal families are experiencing problems with housing and food affordability. These problems are likely linked to high levels of unemployment and pervasive low incomes. In 1996, the unemployment rate of Aboriginals ranged from 26% to 29%. In 1995, at least 44% of the Aboriginal population and 60% of Aboriginal children under age 6 fell below the Statistics Canada low-income cut-off rates.

By Type of Health Problem

Natural Disasters

Canada experiences floods, forest fires, snow storms, and tornadoes. The 1998 ice storm was the worst to hit Canada in decades, causing at least 25 deaths, many from hypothermia. The ice storm affected parts of Ontario, Quebec, New Brunswick, and Nova Scotia, and directly affected more people than any other previous weather event in Canada.

Vector-borne Diseases

Canada only has imported cases of malaria; over the past five years, the number of cases has dramatically increased. In 1997, 1,036 cases were reported in Canada, an increase from 430 cases in 1994. There have been no reported yellow fever cases in Canada in decades.

Diseases Preventable by Immunization

Since Canada first introduced vaccines, the country has experienced a 95% reduction in diseases preventable by vaccination. Poliomyelitis was eliminated officially in 1994, and the implementation of the two-dose measles immunization program has led to a seven-fold decrease in the incidence of reported measles in 1998. In 1997, 94% of 2-year-olds had received immunization appropriate to their age for measles, mumps, and rubella; 85% had received immunization for diphtheria, pertussis, and tetanus; 86%, for poliomyelitis; and 74%, for *Haemophilus influenzae* type b (Hib). Vaccination coverage in 1998 is shown in Figure 4.

No cases of diphtheria were reported in 1996. Only 2 to 5 cases have been reported annually from 1986 to 1995, and there have been no deaths due to diphtheria since 1983. As of December 1999, 28 cases of measles were reported, 8 of which were caused by exposure while outside of Canada; the remaining 20 were linked to an imported case. In 1998, there were a total of 12 laboratory confirmed sporadic cases. There were 117 reported cases of mumps in 1998. Mumps encephalitis has been reported to range as high as 5 per 1,000 cases, with a case-fatality rate of around 1.4%. There were 68 cases of rubella reported in 1998; however, there is concern that it is grossly underreported. The average annual incidence rate of pertussis decreased to 17 cases per 100,000 population between 1986 and 1996. In recent years, epidemics have increased in size. Almost 20% of cases caused illness severe enough to warrant admission to an intensive care unit, with a case fatality rate of 0.7%. Three cases of tetanus were reported in 1996. There were 55 *Haemophilus influenzae* type b (Hib) cases in 1996 and 46 in 1998. Although the immunization rate for Hib remains below that of other immunization programs, coverage has increased by 20% between 1995 (55%) and 1998 (75%). Hepatitis B rates are consistently higher for males than females, and reported cases in Canada remain around 970 per year, or 3.2 per 100,000 population.

no partner, 82% live in their own homes debt-free, and 66% live with two or more people. Between 80% and 90% have considerable difficulty in bathing, 25% suffer from clinical depression, and 9% suffer from cognitive deterioration (10% of women and 7% of men).

Family Health

In 1993, the care provided by clinics was reoriented and they were gradually transformed into family health centers. This innovation has meant a change in the architectural model and use of physical space in the establishments. In 1999, there were 35 centers that attended to more than half a million people.

Worker's Health

In 1998, work-related accidents led to a loss of 3.3 million working days. Every day, 822 workers have accidents of this kind. Close to 2 million workers have no access to any kind of occupational health protection and a large percentage have limited protection (temporary workers, unskilled laborers). The accident rate dropped from 10% in 1998 to 9% in 1999. In 1996, the highest percentage of accidents occurred in the 25–34 years age group (8%). Seventy-six percent of the accidents reported by mutual insurance plans in 1999 affected men. Fifty-four percent of the accidents suffered by women occurred in service activities, and the largest number of accidents suffered by men was in industry, at 27%.

The aggregate rate of occupational diseases fluctuated significantly over the period 1995–1999, with values ranging from 4 per 1,000 population (9,400 cases) to 2.2 per 1,000 population (5,800 cases). The most commonly diagnosed occupational diseases in 1995 and 1996 were musculoskeletal diseases (26%), diseases of the skin and connective tissue (23%), poisoning (15%), and respiratory diseases (12%).

The Disabled

By 1994, Chile had already passed Law 19284 on the social integration of persons with disabilities. The policy stresses improving the educational, economic, and social status of this group; quantifying the disability by type and degree; intervening to introduce improvements in health care services; improving labor conditions; and adopting specific measures to prevent different types of accidents. The National Disabilities Fund (FONADIS) is in charge of the policy.

According to CASEN 1996, 616,000 Chileans, or 4% of the total population, had some kind of disability in that year. Although this figure is almost double the figure given in the 1992 census (283,888), it should be recalled that the definition of disability changed from total restriction caused by some psychiatric diseases to definitions based on the level of functionality. In 1996, 85% of persons with disabilities were of working age (over 14). Twenty-six percent of them worked, 2% were unemployed, and 72% were out of the labor force, which is significantly higher than the 45% for the general population and confirms that this group is excluded from the workforce.

The National Kindergarten Board performed a national survey in 1999 of 115,000 children, and, according to that survey, 1,500 have special needs for assistance and education: difficulties in verbal communication (48%), motor dysfunction (19%), mental impairment (13%), visual impairment (7%), multiple dysfunctions (6%), hearing impairment (5%), and alterations in relationships and interpersonal communications (4%). In 2000, 52,600 people were enrolled in special schools. Classifying them by type of disability gives the following breakdown: intellectual (29,000), verbal communications (20,500), hearing dysfunction (1,300), motor (922), visual (501), and autism (274). School integration projects are carried out in 1,100 regular schools and benefit 10,700 children and teenagers.

Indigenous Groups

In 1993, life expectancy was 63 years (67 for women and 60.3 for men) for the Aymará, 72.8 (76.1 for women and 69.7 for men) for the Rapa Nui, and 75.6 for Mapuche women and 68.5 for Mapuche men. There is a high concentration of indigenous groups in 39 of the country's "communes" and a significant presence in 26. Standard-of-living indicators are lower in these "communes" than in other parts of the country, and the correlation between poor areas and indigenous areas is high. Infant mortality rates for the Atacameño are up to 40 points higher than the national average, and life expectancy for the Aymará is up to 10 years less.

By Type of Health Problem

Natural Disasters

Chile suffered a number of natural disasters over the period 1996–2000. In 1998, La Niña caused a significant drop in precipitation that affected an extensive zone running about 1,500 km from north to south. From the Valparaíso region southward, water levels in the large reservoirs were low compared with the historical average, which led to serious problems in potable water supplies in rural areas, and an agricultural emergency was declared in 217 "communes." Traditional crops and livestock suffered, the number of forest fires increased, and 90,000 hectares of forest were lost, particularly in the Bío-Bío region. In October 1997, an earthquake affected a large part of the Coquimbo region, damaging 13,000 houses.

June 2000 saw heavy rainfall, storms, blizzards, and heavy snowfalls from the Antofagasta to the Lagos region. The main rivers burst their banks, causing partial flooding in many towns and farms; roads and bridges were washed out and thousands of people were left isolated. Almost all the health care establishments, which were also affected, saw increased consultations for respiratory diseases of different degrees of seriousness.

more than 65% of deaths were due to external causes, 18% to communicable diseases, and 13% to malignant neoplasms.

Adolescents (10–14 and 15–19 years)

In 2000, adolescents numbered 8.6 million: 4.4 million were between the ages of 10 and 14 and 4.2 million were between 15 and 19. According to the DANE, in 1998, there were 7,864 deaths in the adolescent population (133.4 per 100,000 males and 47.9 per 100,000 females). In young men aged 15–19, violence accounted for 69% of the deaths; there were 13 male deaths for each female death in this age group. Data from a national survey on juvenile drug use showed that among the population surveyed alcohol and marijuana continued to be the most consumed drugs; 15.2% of all persons who drank alcohol and 6.8% of cigarette smokers were under 18 years of age. The prevalence of cocaine consumption in the general population is 3.8%; 15.2% of those are 11–15 years old and 30.4% are 16–18 years old. According to ENDS–2000, 56% of 10–14-year-olds live with their parents. During the 1990s, the proportion of pregnant women aged 15–19 years almost doubled, from 10% in 1990 to 19% in 2000.

Adults (20–59 years)

In 2000, the adult population in Colombia numbered 26 million. According to the DANE, 78,280 deaths were recorded for this age group in 1998 (406.3 deaths per 100,000 males and 168.9 per 100,000 females). At the end of the 20th century, the adult population aged 15–44 saw an increased disease burden, especially among males, attributable to the rise in homicides and in AIDS as causes of death. In 1997, the Second National Study on Mental Health and Psychoactive Substances revealed a downward trend in tobacco use, from 29.7% in 1987 to 22.2% in 1998; 3.7% of the general population were recent ex-smokers (less than 1 year), with no difference between the sexes. ENDS–2000 found that among sexually active females living with a male partner, there was a 77% prevalence of contraceptive use; an average of 37 months between pregnancies (as opposed to 34 months in 1995) and 46 months for women with a university education; and a crude birth rate of 24.4 per 1,000 population, compared with 27.0 in 1995.

The Elderly (60 years and older)

In 2000, 7% of Colombians (3 million people) were aged 60 years and over. According to the DANE, in 1998, there were 73,121 deaths in this age group. The leading diseases for both sexes were ischemic heart disease; chronic obstructive pulmonary disease; diabetes mellitus; and malignant neoplasms of the trachea, bronchus, lung, prostate, and uterine cervix.

Family Health

Domestic violence is a high-priority problem. According to ENDS–2000, 41% of women who ever lived with a partner declared they had been physically abused by their partner (and an additional 20% by another relative). In addition, 34% had been threatened by their partner: the most common threats included desertion (23%), taking away their children (18%), and refusing to provide financial support (16%); 11% stated they had been raped by their spouse (and an additional 7% by another person). Only 20% of the physically abused women lodged an official complaint. In 1997, the Second National Study on Mental Health and Psychoactive Substances disclosed that 9.7% of children had been emotionally abused and 4.3% had been physically abused. The National Institute of Legal Medicine and Forensic Sciences recorded 34 homicides due to physical abuse in 1999, and it evaluated 9,896 cases of sexual abuse of minors, either within the nuclear family (33%) or outside it (67%).

Workers' Health

Every year there are thousands of cases of severe trauma and hundreds of deaths due to exposure to physical and chemical hazards in the workplace. The artisanal industries do not provide adequate health conditions for their employees. The main problems are underreporting of the morbidity and mortality caused by occupational diseases and work-related accidents; the lack of technical assistance programs aimed at the working population; overlapping jurisdictions; the dearth of human resources trained in occupational health research, clinical diagnosis, and treatment of occupational illnesses; the lack of epidemiological surveillance in the area of occupational health and risks; and the absence of national standards and limits on permissible levels of chemical substances that are harmful to both workers and the environment. Industrial centers and areas of agricultural production pose the highest occupational risks.

The Disabled

Colombia lacks systematic and reliable registration of disability. Information is limited to the 1993 census, which recorded 593,546 disabled persons, and to a demographic study conducted by Pontificia Universidad Javeriana in nine departmental capitals since 1995. The latter identified 2,360,000 persons with disabilities, 12.1% of them under 14 years old and 27.6% over 60, and most of them males.

Indigenous Groups

The indigenous population of Colombia, which endows the nation with its ethnic and cultural diversity, was estimated at 2% in the year 2000. In all, there are 81 groups, who speak 17 autochthonous languages; 92.6% of these people live in rural areas, compared with 7.4% in municipal seats. In addition, there is an ethnic population of African origin that numbers more than 10 million and represents 25% of the nation's total. A humanitarian mission that visited 22 indigenous communities in 1992–1993 found that the most prevalent health problems afflicting both sexes were acute respiratory infections, intestinal parasitosis, and acute diarrheal disease.

The Elderly (60 years and older)

In 1998, the population aged 60 years and older was estimated at 271,586 (46.8% men). This age group represented 7.2% of the total population and was the most rapidly growing segment. The mortality rate in 1998 was 34.9 deaths per 100,000 population (40.1 per 100,000 males and 31.1 per 100,000 females). For both sexes, the leading cause of death was cardiovascular diseases, followed by neoplasms and diseases of the respiratory system. In the services provided by the CCSS, this group accounted for 9.4% of emergency visits, 13.5% of outpatient consultations, and 13% of hospitalizations. In 1997, a total of 1,311,885 consultations were provided, and the leading complaints were hypertension, diabetes mellitus, and diseases of the nervous system. That same year the CCSS reported a total of 44,656 discharges, and the main reasons for hospitalization were diseases of the circulatory (21.6%), digestive (12.9%), genitourinary (12.5%), and respiratory (10.6%) systems, and neoplasms (10.6%). In women, the leading reasons were diseases of the circulatory (20.1%) and digestive (12.0%) systems, and eye diseases (9.9%).

Family Health

In 1999, 28% of Costa Rican women between the ages of 18 and 44 were living in a consensual union, with an even higher proportion among young couples. On average, the women were 20 years old when they began their first serious relationship. It was noted that 47.1% of all registered births were to unwed mothers and 2% to widows or women who were divorced or separated; moreover, 30% of the births were registered without a recognized father. A recent paternity law entitles a woman to register the name of her child's father.

Workers' Health

In 1999, Costa Rica had an economically active population of 1,383,452 (66.9% men), distributed fairly equally between urban and rural areas. By sector, 24.6% of this workforce was in services, 20.7% in commerce, 19.6% in agriculture, and 15.7% in manufacturing (15.7%). That same year, there were a total of 120,279 work-related accidents (87% in men and 13% in women). Of salaried employees, 78.4% were insured against occupational risks, and 17% of them were victims of accidents. Workers aged 20–25 years had the most accidents in both 1992–1995 and 1996–2000, with an annual average of 28,869 and 22,383, respectively. In 1996–2000, agriculture was the economic sector with the largest number of work-related accidents, followed by manufacturing, but by 2000, these two sectors showed declines of 17% and 20%, respectively, relative to 1996.

The Disabled

In 1998, it was estimated that 9.3% of the population was disabled. Of the 311,359 persons who suffered from some form of disability, only 29.7% were treated in the health establishments of the CCSS, and, of this proportion, 60% were from the province of San José. According to data compiled by the National Rehabilitation Center of the CCSS, which takes care of 55% of the national demand, the most frequent causes of disability in 1998 were postural disorders (22%), low back pain (11.5%), facial paralysis (3.6%), and fractures (3.5%). The number of persons affected with low back pain increased from 3,743 in 1996 to 5,584 in 1998, while the other causes remained unchanged over the period.

Disability has a significant impact on economic and productive activity. In 1999, there was an average of one day of incapacity for every insured person in the country, and this average has been gradually rising over the last five years. A similar pattern was observed in transportation and work-related accidents.

Indigenous Groups

Costa Rica's eight indigenous peoples—the Bruncas, Cabecars, Teribes, Bribris, Huetars, Malekus, Chorotegas, and Guayamis—together number approximately 40,000 and represent 1% of the total national population. The most numerous are the Bribis (34%) and the Cabecars (26%), who live in the Huetar Atlántica region, especially in the canton of Talamanca. Compared with the national averages, the indigenous areas have higher birth rates and higher infant and general mortality, as well as major deficiencies in housing and basic services (potable water and electricity). In 2000, 47% of the Cabecars were illiterate, and only 6% had completed the primary grades or higher. In 1999, of the 14 infant deaths in the canton of Turrialba, those in the indigenous communities represented 29% of the total even though they accounted for only 4% of the population. In the same canton, 73% of the pregnant women had no prenatal care and 70% of the babies were delivered at home. At the same time, 60% of the dwellings suffered from serious structural defects and had no latrines.

In 1995, measures were taken to extend social security coverage to indigenous groups and provide them with primary care. With a view to further improving care, the CCSS and the National Commission for Indigenous Affairs signed an agreement in 1998 for integrated health services development. Despite these efforts, however, political, geographical, and cultural barriers still limit this population's access to services.

By Type of Health Problem

Natural Disasters

Steps have been taken to identify geographic areas where the greater risk of flooding (on the Atlantic and Pacific slopes) is related to situations of social inequality. The country also has a history of earthquakes (in the provinces of Cartago, Alajuela, and Limón) and volcanic eruptions. Other threats have been created by inappropriate land use, such as deforestation, contamination with waste, and alterations of river basins. In recent years, there

health workers, dissemination of information, and health education for the elderly.

Family Health

In 1999, 37% of households were headed by women. In 2000, a multisectoral national health and family life education committee was established with the responsibility for reviewing policy and redefining programs. A family life education program is delivered at primary schools.

Workers' Health

A national plan for developing workers' health was developed in 1996; issues for concern included the lack of protective equipment and clothing for workers and an absence of appropriate monitoring of equipment, as well as poor engineering controls, poor ergonomic practices, and unsatisfactory physical working conditions.

Work site conditions are monitored by the Labor Division and the Environmental Health Department. Although there is a regulatory framework for protecting workers, the monitoring of employee health needs to be improved; a multisectoral initiative is under way to this effect.

In 1999, Dominica's Social Security received 114 claims for employment injuries; 99% of these were from men. Of these, 25% originated from the manufacturing sector, followed by the government sector with 22%. Of 4,965 claims for sickness benefits submitted in 1999, 56% were by female workers.

The Disabled

The Ministry of Community Development has developed a policy on the disabled, and the Dominica Association of Disabled Persons advocates for the rights of the disabled. A 1999 school survey revealed that a total of 233 children aged 5–9 years had moderate to severe disabilities; 28% of them were not accessing formal education and 60% were male. Disabilities ranged from mental deficiencies to sensory, physical, and communication disorders.

There are two nonresidential institutions that care for children with special needs. The Alpha Centre, a nongovernmental institution, provides education, parental skills training, and parental support for 160 children with mental and developmental disabilities. In addition, a school for the hearing impaired has 26 children enrolled.

Indigenous and Other Special Groups

Dominica's indigenous peoples, the Carib Indians, speak a combination of English and French Creole. In 2000, the Government established a Department of Carib Affairs specifically charged with addressing this group's community development and poverty alleviation by mobilizing resources and fostering social participation and community action.

Although improvement in socioeconomic conditions and better access to health and education resources have improved the Caribs' health status, a community consultation held in the Carib Territory in 1999 identified the following areas of concern: lack of potable water and solid waste disposal; violence; drug abuse, including alcoholism; tuberculosis; sexually transmitted infections; and helminthiasis. Because this population lives in relative isolation, health issues related to inbreeding are a cause for concern. The Carib Territory is served by two health centers, each staffed by a primary care nurse of Carib descent. Health information from these clinics revealed three cases of low birthweight during 1997–2000. During the same period, 152 pregnancies were recorded, of which 32% were classified as high risk on first admission. Child care clinics had 132 children registered.

By Type of Health Problem

Natural Disasters

The country is vulnerable to a wide range of natural hazards, such as tropical storms and hurricanes. In 1999, Hurricane Lenny, a category 4 storm, damaged coastal structures and equipment on the western side of the island; no lives were lost. Damage and rehabilitation costs were estimated at US$ 140 million and repairs are ongoing. In 1997, the Layou River landslide and floods severely eroded the country's socioeconomic conditions. Although no lives were lost, 600 residents had to be temporarily evacuated.

Dominica's susceptibility and vulnerability to volcanic activity is a major cause for concern. A seismic analysis report concluded that the probability was high for a magmatic eruption with earthquakes of a magnitude between 1 and 5 in the next 10 years. Since 1998–1999 several minor tremors have occurred in the country's south, where 20% of the population resides; there has been no loss of life recorded due to volcanic activity. A National Volcanic Plan was put in place in 1999.

All major public and private sector organizations have well-defined disaster management plans, and simulation exercises are held annually. Building design must comply with the Caribbean Uniform Building code, and mitigation features are considered in the construction of new health facilities.

Vector-borne Diseases

Vector-borne diseases of significance in Dominica are dengue fever and malaria. There was a large dengue outbreak in 2000, during which virus serotype III was introduced for the first time; serotypes I and II also circulate in the country. There was one death due to dengue hemmorhagic fever. Between 1997 to 1999, the average national *Aedes aegypti* household index was 18%; in some communities, however, the index reached as high as 26%. In 2000, the *Aedes aegypti* household index was 13% and the

people, between 10 and 39 years of age, and 53% of them are women.

Domestic violence has attracted considerable attention due to the existence of legal instruments such as the Law against Violence to Women and the Family, and the agencies set up by the State, municipalities, and civil society, and nongovernmental organizations to safeguard them. The evaluation by the National Women's Council in 1999 estimated that 68% of women nationwide have suffered some kind of family violence, of which 8% was sexual violence. Likewise, 75% of the women who were abused and lodged complaints (18,446 in 1995 and 30,551 in 1998) were between the ages of 25 and 39; 45% were married and in 76% of the cases the aggressor had been the spouse or intimate partner.

Workers' Health

At the beginning of the nineties the annual death rate was down compared to the previous decade, according to information from the Ecuadorian Social Security Institute (IESS); by contrast though, temporary and permanent disabilities increased. Between 1996 and 1998 mortality rose from 155 deaths to 185, and from 273 cases of temporary disability to 324; the number of cases of permanent disability remained at 214 during those years. The main reasons attributed by the IESS to accidents in the workplace are: unsafe material conditions, 21%; unsafe actions, 64%; unsafe conditions and actions, 15%. Only 22% of the workers who are required to wear a helmet and/or seat belt actually do so; only 42% utilize hand protection, and 13%, foot protection. Occupational accidents in the population not affiliated to the IESS and reported by the Ministry of Public Health increased from 4,804 in 1997 to 6,005 in 2000.

Occupational diseases are infrequently identified and recorded; in 1997 the IESS classified 49 cases as professional diseases; the most frequent were related to noise and dust; there were also clinical presentations of allergy, asthma, and poisoning/intoxication. Several studies indicated the existence of diseases such as neurosensory hypoacusis among 52% of workers exposed to noise in the textile industry; exposure to lead among workers in the metallurgical industry; presence of chromium in urine in 68% of workers and nickel in 49% of workers in metal plating firms; and exposure to organic solvents in refineries with high levels of benzene, toluene, xylene, and n-hexane poisoning. Research sponsored by UNICEF and the International Labor Organization in 1995 on occupational health in child workers demonstrated the high level of exposure to organic solvents, organophosphate pesticides and carbamates, mercury, and lead in bootblack activities, fruit growing, gold mining, and roof tile production.

The Disabled

A study of prevalence conducted between 1994 and 1996 (ESADE, Universidad Central/CONADIS) indicated that 49% of the population suffers from some degree of deficiency, including problems of visual accuracy, 13% from some kind of disability, and 4.4% from a handicap; the handicapped predominate in urban areas (2.8%) compared with rural areas (1.6%). According to the same study, deficiencies related to psychological development are predominant in children under age 5 (36%), followed by language deficiencies (20%) and musculoskeletal deficiencies (16%). In children over five years of age, the most frequent deficiencies are locomotion (27%), communication (26%), and behavior (19%); the after-effects of disease, especially infections, cause 47% of the disabilities. Disabled persons are clearly another socially excluded group, given that levels of literacy, employment, earning power, training, social security, and access to health services are lower among the disabled than they are for the general population, according to the above-mentioned source.

Indigenous and Other Special Groups

Estimated infant mortality for 1999 in Cotopaxi and Chimborazo, two of the provinces with the highest concentration of poor indigenous inhabitants, was as high as 62 and 55 per 1,000 live births, respectively, while the national rate was 30 per 1,000 live births. Child malnutrition in areas with a large indigenous population is 1.7 times higher than the national average (1998 Survey on Living Conditions). The lower the level of schooling attained by the mother, the greater the difference.

The maternal mortality rate recorded at the national level was 55.4 per 100,000 live births in 1998, but in Napo and Morona Santiago, two provinces with a predominantly indigenous population in the Amazon region, it was three times higher (163.0) and higher still in Esmeraldas (175.0), which has the largest population of African origin. In indigenous areas, access to drinking water is 22% below the national average, and basic sanitation coverage is 33% lower.

By Type of Health Problem

Natural Disasters

In 1996 there was an earthquake in Cotopaxi and, in 1998, another in Bahía de Caraquez. The death toll for the latter was three, with 69 injured, and 2,909 adversely affected. Sixty percent of the area's buildings were damaged, and 1,240 were left homeless. The damage caused in 1997 is estimated at 2,869 million dollars, or 17% of the GDP. That year, there was a drought in the Province of Loja; the El Niño phenomenon hit in 1997 and again in 1998 (producing the climate system's worst damage of the 20th century); and there has been considerable activity from the Tungurahua volcano since 1997, necessitating the evacuation of 25,000 people between October 1999 and May 2000. In October 1999 the Pichincha volcano erupted, and 1,131,000 tons of ash fell on Quito. There were aviation accidents in Manta and Quito and ruptures to a pipeline in a sector of the city of Esmeraldas in

Indigenous Groups

In 1999, the indigenous population was estimated at 684,613, or 11.3% of the country's total. The majority (94.4%) were Nahuat-Pipil, trailed by the Lenca (4.1%) and Cacaopera (1.5%). The last group had the lowest levels of health and quality of life. The indigenous population is found in 7 of the country's 14 departments: Ahuachapán (4 municipalities), Sonsonate (14), La Libertad (5), San Salvador (4), La Paz (8), Morazán (3), and Santa Ana (1). The predominant language is Nahuatl, although children and young people speak it less frequently. According to a study conducted in 1998 by the National Coordinating Council for El Salvador's Indigenous Peoples, the households had an average of 5 members; 76% were headed by men and 24% by women, and 69% of their members were between 15 and 44 years of age. Among women of reproductive age, 10.5% were using contraceptive methods, and the prevalence of pregnancy was 9%. Only 26% of all pregnant women had prenatal care, and 70% of the deliveries were attended by midwives. Vaccination coverage for tetanus toxoid was 20%. Fifty-nine percent of the population was illiterate, and unemployment was 24%. For the most part, the people's homes were made of adobe (57.8%) and had earthen floors (86.4%) and straw roofs (78%). Only 33% had the benefit of electrical service, and 64% used oil lamps or candles for lighting. Water was obtained by 91.6% of the population from wells, rivers, or both; 60% had latrines, whereas 37% had no sanitary facilities at all. The proportion of the indigenous population below the poverty line was 61.1%, and 38.3% were living in extreme poverty. Only 1.3% received family remittances from abroad. The predominant illnesses were communicable diseases (acute respiratory infections, acute diarrheal diseases, and intestinal parasitism).

By Type of Health Problem

Natural Disasters

In 1997 and 1998, the effects of El Niño made for an unpredictable rainy season and an extremely arid dry season. In 1998, at the peak of the rains from Hurricane Mitch, around 31 October and 1 November, two rivers, the Río Grande de San Miguel and the Lempa, overflowed between San Vicente and Usulután. This flooding caused 239 deaths, and 57,777 people suffered related consequences. The damage to aqueducts and water supply systems was estimated at US$ 124.37 million. In November 1999 heavy rains again caused the lower Lempa and La Paz rivers to overflow, and 11,334 people from 48 communities in six departments were affected.

In June 1998 the environment was accidentally contaminated as a result of the mishandling of 42 barrels containing liquid organochlorine pesticides. Toxic gases emanated for 1.5 km in every direction and affected 36 people. In September and October 2000 a mass poisoning caused by the ingestion of sugar cane liquor adulterated with methanol affected 167 people and caused 93 deaths, for a case fatality rate of 56%. The average age of the victims was 44, although they ranged between 16 and 85 years, and 98% of them were men.

An earthquake of 7.6 magnitude on the Richter scale struck El Salvador in January 2001. This seismic event was followed only a month later by a second temblor of 6.6 magnitude. As of 2 February 2001, the National Emergency Committee (COEN) had reported a death toll of 827, representing a mortality rate of 13.18 per 100,000 population for the country as a whole. The department of La Libertad had the highest death rate, at 85.77 per 100,000 inhabitants. In addition, 4,520 people were injured, and 1,160,316 had damage to their property and homes. It is estimated that 18.48% of the country's population experienced some type of damage. The departments in which the most people were affected were Usulután and La Paz, in which 100% and 77% of the inhabitants, respectively, experienced losses. A total of 224,068 structures were affected, and of this number 41.1% corresponded to homes that were destroyed. The second earthquake added to the loss and destruction caused by the first one. As of 21 February 2001, COEN reported 315 deaths as well as 3,399 people injured and 252,622 affected by some form of damage. The death rate for the country as a whole was 5.0 per 100,000 inhabitants. The area most affected included the departments of Cuscatlán, La Paz, and San Vicente, where mortality was 81.3, 19.8, and 54.0 per 100,000 inhabitants, respectively.

Vector-borne Diseases

Malaria remained stable and even showed a slightly downward trend. In the four years of 1997 through 2000 there were 5, 11, 9, and 9 cases, respectively, of *Plasmodium falciparum* malaria, none of which were resistant to chemotherapy. In addition, there were 2,714 cases caused by *P. vivax* (45.9 per 100,000 population) in 1997, 1,171 (19.4) in 1998, 1,221 in 1999, and 599 in 2000. The 14 departments in the country are considered areas of malaria transmission. Morbidity is concentrated in five departments: La Unión, Sonsonate, La Paz, Ahuachapán, and Usulután. The distribution by age group in 2000 was as follows: 0 in infants under 1 year old, 7.1% in children aged 1–4 years, 25.8% in the group aged 5–14, 57.7% in those aged 15–44, and 9.4% in the population 45 and over. The male-female ratio was 1.5:1. The annual parasite index that year was 0.12 per 1,000, and the annual *P. falciparum* index was 0.0014. No deaths from malaria were reported during the period. The country has adopted a "Roll Back Malaria" strategy, the principles of which were reiterated in November 2000. The basic principle is early diagnosis and immediate treatment of all clinical cases.

Dengue has been showing endemic characteristics, with epidemics in the last four years and a rising trend in the hemorrhagic form. In 1997 a total of 396 cases of classic dengue were

ble diseases, including cerebrovascular disease (15%), ischemic heart disease (15%), diabetes (9.7%), and hypertensive disease (9.2%).

The Physical Activity Survey of 147 adults age 60 years and older revealed that 33% were overweight and 22% were obese, with higher levels among women. The study also indicated that 22% reported that they were suffering from diabetes (26% of males and 20% of females). In addition, 43% had hypertension; overweight/obese persons (65%) were more likely to report high blood pressure than those with a lower BMI (32%). The survey also reported that 19% had done planned exercise in the week prior to the study, 25% consumed alcoholic drinks (41% of males and 13% of females), and 13% were smokers (28% of males and 2.3% of females).

In 1999, persons over age 65 accounted for 16,795 visits to hospital outpatient clinics. The main diagnoses for first visits were hypertension (25%), arthritis/rheumatism (10%), diabetes (8.0%), acute respiratory infections (9.6%), and accidents and injuries (4.8%).

Workers' Health

In 1999, 2,385 accidents were reported to the Occupational Safety and Health Division, including 2,370 non-fatal accidents, which have steadily declined from 3,335 in 1997. The number of fatal accidents ranged from 9 in 1997 to 15 in 1999. The majority of non-fatal accidents (85%) in 1999 occurred in the agriculture sector.

The Disabled

The number of persons with disabilities in Guyana is unknown. According to the Community Based Rehabilitation Project, which operates in six regions, there were 573 participants in the program in 2000. Of these, 135 were children under age 5 years; 107 participants had multiple disabilities. The leading causes of disability addressed in this project are related to movement and speech.

Indigenous and Other Special Groups

According to the National Development Strategy, the Amerindian population declined by 5.8% between 1993 and 1999. This group is the majority in many of the hinterland areas of the country, where they tend to live in geographical isolation. The largest group among the Amerindians are the Arawaks (or Lokonas), with approximately 15,000 persons, followed by the Makushi (with approximately 7,500 persons), the Wapishana, the Warau, the Akawaio, and the Patamona. The Survey of Living Conditions showed that 78% of Amerindians live in poverty. Some of the problems they face are malaria, diarrheal diseases, acute respiratory infections, teenage pregnancy, short child spacing, tuberculosis, dental caries, and inadequate access to health care.

Some 60% of malaria cases in the regions are found among the indigenous populations. Eight out of ten inhabitants in Region 2 habitually have malaria. Over a third (35%) of those who have the illness have not responded to the standard drug treatment, while an equal number had clinical symptoms of malaria three times or more during the average 12-month period. Worm infestation is endemic in most interior areas.

A study conducted in 1997 among the Patamona and Wapishana tribes showed that the prevalence of stunting increased with age, from 17% at age 7 years and older to 50% at age 13 years and older among the Wapishana tribe, and from 19% at age 7 years and older to 80% at age 13 years and older among the Patamona. However, by age 18, fewer than 1% of adults overall have a BMI of less than 18.5 kg/m^2, while 11% and 23% of adults among Patamona and Wapishana tribes, respectively, were overweight.

The ease of movement between Guyana and neighboring countries makes the border areas particularly vulnerable to disease outbreaks occurring in the other countries. In 1999, in response to an outbreak of yellow fever in neighboring countries, a campaign was launched to immunize the general population against the disease. Guyana and its neighbors cooperate on health issues, and hold border meetings to address common health issues.

By Type of Health Problem

Natural Disasters

Guyana suffered no major natural disasters since the 1995 flood. Nevertheless, disaster awareness and preparedness remain high. Several officers of the Civil Defence Commission (the agency responsible for disaster management in Guyana) and others have been trained in aspects of disaster management, such as mass casualty management and stress management in disasters.

Vector-borne Diseases

Malaria is a major public health problem in Guyana, and is the leading health problem in hinterland communities. *Plasmodium falciparum* is the main infectious agent. New cases represent over 90% of the cases detected each year. Approximately 90,000 cases were reported over the period 1997–2000; 10,000 fewer cases were reported in 2000 (28,267 new cases) than in 1997. An estimated 261,225 workdays were lost to malaria in 1998 and 136,415 workdays were lost in 1999.

Lymphatic filariasis is endemic in Guyana. A survey of schoolchildren 8–11 years old in seven regions, conducted by CAREC, showed that positive lymphatic filariasis rates for the coastal urban centers ranged from 20% to 32%. In non-coastal or largely rural communities, prevalence rates were 4.2% or less. The study also showed that although children have been exposed to filaria, none was symptomatic.

There were 34 reported cases of dengue fever in 1998, 6 in 1999, and 25 in 2000. Dengue types 1 and 2 were laboratory di-

and mortality," a figure that reflects, in part, the limitations of the country's death records.

A study of deaths in women of reproductive age conducted by the Ministry of Public Health in 1997 found that maternal mortality was almost four times greater in girls aged 12–14 years (391 deaths per 1,000 live births) than in the overall population of women of reproductive age (108 per 1,000 live births).

Adults (20–59 years)

According to the population projections for 2000, persons between 15 and 59 years of age represented more than half (53%) the country's total inhabitants. According to statistics from the Ministry of Public Health for this age group in 1999, women accounted for three of every four hospital visits and discharges. In the case of almost half the discharges (48%), the care provided was directly related to the female reproductive process (pregnancy, childbirth, and the puerperium), and these cases corresponded to 66% of all female discharges. ENSM-96 found that only 50% of the male respondents 15–60 years of age had consulted a state health service at least once a year. The survey results also indicated that 50% of Honduran women between 15 and 44 years old living with a sexual partner in a consensual union practiced contraception, while 39% of those aged 20–24 years living with a partner used contraceptive methods, and among those 35–39 years of age the percentage was 58%.

Hospital statistics show that as of December 2000 a total of 11,789 confirmed cases of AIDS had been registered in Honduras, of which 90% were in patients between 15 and 59 years old, and 61% were in males. The only information available on maternal mortality comes from studies conducted in 1990 and 1997, but they were based on different methodologies and the results are not comparable. The 1997 study found a maternal mortality rate of 108 per 100,000 live births. Of the deaths studied, 47.7% occurred at home, compared with 35% in State-run hospitals, with the remaining percentage in private institutions. Almost half the deaths (47.1%) were due to hemorrhagic complications in the third trimester of pregnancy, followed by hypertensive disorders of pregnancy (preeclampsia and eclampsia), 19%; infections, 15%; and other causes.

The Elderly (60 years and older)

As of 1999, 6.2% of the total estimated population corresponded to adults aged 60 and over, of whom 41% were living in urban areas and 59% in rural areas. The Multipurpose Household Survey conducted in 1999 found that 28.2% of older adults were widows and widowers—22.7% women and 5.4% men. More than half the older adult population (52.6%) were illiterate, and the proportion was larger among women (57.4%).

Ministry of Public Health statistics for 1999 indicate that 10.2% of outpatient consultations in the public health system corresponded to older adults, an increase of 0.5% relative to 1997. Mortality data by cause of death are not available for this segment of the population.

Workers' Health

Data for 1999 from the ongoing Multipurpose Household Survey conducted by the Bureau of Statistics and Census show that jobs had increased at a rate of almost 5% a year, or faster than the growth of the economically active population, thus raising employment levels in the workforce. As a result, unemployment was only 3.7% in 1997–1999. At the beginning of the 1990s the EAP numbered 1.6 million, and by the end of the decade it had reached 2.4 million. This rise of almost 50% was due especially to the steady increase in the participation of women in the labor market, which went from 32.2% in 1996 to 39.1% in 1999, while the rate for males saw very little change. Seventy-five percent of the country's workers were illiterate or had only attended primary school. On 1 October 2000 a new wage agreement went into effect that provided for increases in the minimum wage for certain income brackets, economic activities, and businesses, based on their size.

The Disabled

The Ministry of Public Health estimates that more than 1 million Hondurans have some degree of physical or mental disability. Although some data have recently been gathered by the public and private health services, as yet no consolidated official information is available on mortality and morbidity in this population.

Indigenous Groups

There are more than 1 million Hondurans of indigenous or black descent, living as nine culturally differentiated peoples: the Lenca, Chortí, Tolupán, Tawahka, Garífuna, Pech, Nahuatl, Miskito, and the English-speaking blacks. Their languages come from five basic linguistic trunks: the Mayan, Ute, Aztec, Hokan-Siouan, and African. These populations are dispersed throughout the national territory, usually in neglected areas, and large numbers are concentrated near international borders. The Miskito and Chortí live along the border with Nicaragua and Guatemala; the Lenca, one of the most numerous groups, near the border with Guatemala and El Salvador; the Garífuna, English-speaking blacks, Miskitos, Tawahka, and the majority of the Tolupán communities, along the Atlantic coast; and the Pech and Nahuatl, in the central area in the department of Olancho. Approximately 50% of the indigenous people live in coniferous forest regions, while 30% are found along the coasts and 20% inhabit the Tawahka Reserve and the Río Plátano Biosphere Reserve.

The average monthly income of an indigenous household is US$ 60, but for the Lenca, Pech, Tolupán, and Chortí it is only US$ 20 (a very low figure compared with the national average, which was estimated at US$ 82 in 2000) and during lean times many families subsist by hunting, fishing, and collecting roots and fruit

in the forests. The economic situation of the Garífuna and the English-speaking blacks is somewhat better, since they have access to work related to large-scale fishing.

Although specific information about these groups is not available, it can be said that their health status reflects their marginalized situation, lack of access to basic services, and limited social participation, especially in the case of the Lenca, Tolupán, Tawahka, Miskito, Nahuatl, and Pech. Their living conditions are worsened by their geographical isolation and limited access to water supply and basic sanitation services, among other factors. The Garífuna, Miskitos, and Tawahkas live in coastal tropical rainforest and lowland areas and have a high frequency of malaria and other communicable diseases.

The Garífuna and English-speaking blacks are the groups most affected by HIV/AIDS. Between September 1998 and February 1999 the Ministry of Public Health conducted an exploratory transversal seroepidemiological study of 310 individuals (134 men and 176 women) from Garífuna communities in the department of Atlántida (Bajamar, Triunfo de la Cruz, Corozal, and Sambo Creek) and found the following percentages of seroprevalence: syphilis, 2%; hepatitis B, 29%; HIV, 8%; and other sexually transmitted diseases, 38%. In a subsequent survey, conducted in 2000–2001 among 160 women of reproductive age in the same communities, the seroprevalence rates were as follows: syphilis, 1%; hepatitis B, 34%; HIV, 13%; and other sexually transmitted diseases, 9%.

By Type of Health Problem

Natural Disasters

Honduras is especially vulnerable to natural disasters. The departments of Cortés, Atlántida, Gracias a Dios, and Islas de la Bahía, inhabited by 21.4% of the population, are exposed to hurricanes and floods; the departments of Yoro, Francisco Morazán, Comayagua, Lempira, Intibucá, and Santa Bárbara, with 44.4% of the population, are at risk for floods and mudslides; and the departments of Valle, Choluteca, La Paz, and El Paraíso, with 14.3% of the population, tend to have droughts, floods, and earthquakes. In addition, forest fires are very common.

In the last four years Honduras was struck by two major disasters: Hurricane Mitch and its aftermath in October-November 1998, and a severe drought in 2000, which affected more than 85,000 people in the southern region of the country (Choluteca, Valle, La Paz, Francisco Morazán, and El Paraíso). Hurricane Mitch unleashed torrential rains (more than 600 mm in just five days), producing floods across 11 of the country's 18 departments and affecting 1.5 million inhabitants, with a death toll of 5,657 deaths plus 8,058 people unaccounted for and 12,272 injured. More than 285,000 lost their homes and were forced to take refuge in 1,375 temporary shelters. It is estimated that 60% of the country's roads were damaged, cutting off communication with more than 81 cities. Of the country's 28 hospitals, 23 had partial or total breakdowns in their water distribution systems; in addition, 123 health centers were damaged, and 68 of them had to close down. The economic damage to the health services network in terms of both direct and indirect costs was calculated at US$ 62 million. According to ECLAC estimates, national losses associated with Hurricane Mitch amounted to almost US$ 3,800 million—equivalent to 70% of the GDP, or close to 100% of the foreign debt.

According to data from the weekly epidemiological register, which compiles information on cases of notifiable diseases reported by the Health Service Production Units throughout the country, by the fifth epidemiological week of 1999 there was a cumulative total of 1,059 cases of classic dengue and 4 cases of hemorrhagic dengue, compared with the two weeks prior to Hurricane Mitch, when the weekly reports were down to 200 cases. After Hurricane Mitch there were three reported cases of cholera, one of them confirmed both clinically and epidemiologically; and in 1999 there were another three, one from Mosquitia and two from Santa Bárbara. By the end of the fifth epidemiological week of that year a cumulative total of 23,464 cases of diarrhea had been reported.

Leptospirosis appeared in Honduras for the first time in the wake of Hurricane Mitch, with an outbreak of 172 cases, 28 of them confirmed in the laboratory and the rest diagnosed clinically or epidemiologically, and 7 deaths. The outbreak was controlled by surveillance and epidemiological monitoring, which has also made it possible to detect outbreaks of diseases with the potential to cause epidemics, such as malaria, dengue, and diarrheal diseases.

As a direct consequence of the floods that followed Hurricane Mitch, the central markets of Tegucigalpa were contaminated by a sewage backflow, the result of heavy damage to the drainage system that runs through the city's main cloaca. However, the most serious risk factor contributing to the outbreak of foodborne diseases was the population's lack of knowledge about hygienic practices. Coordination between the various agencies following Hurricane Mitch made it possible to meet the population's needs in an integrated and effective manner, thus strengthening the bases for the response of the United Nations system through the group responsible for disaster management.

Vector-borne Diseases

In Honduras, malaria has been considered endemic since the 1950s, when a program was set up to eradicate it. Because the exact number of cases that occur each year is unknown, calculations are based on the number of positive laboratory samples (thick blood slides) reported by the Ministry of Public Health's malaria laboratory network. In 1997, a total of 373,364 thick blood slides were examined, of which 91,799 (24.6%) were diagnosed as positive. However, in 1998 only 250,688 slides were examined, or one-third fewer than the year before, and of this num-

Chihuahua, and Puebla had the highest mortality rates in 1998, while Quintana Roo, Aguascalientes, Campeche, Nuevo León, Yucatán, and Zacatecas had the lowest.

Accidents, mainly involving motor vehicles, were the leading cause of death in 1997, with a rate of 41 per 100,000 population. In 1999, however, the rate for accidents was down to 39 per 100,000, and the category had fallen to second place, superseded by malignant neoplasms, with a rate of 40 per 100,000. Heart disease was the third-ranking cause of death in 1997 (31 per 100,000), but in 1999 the rate was lower (29 per 100,000) and diabetes mellitus assumed third place (31 per 100,000).

In 1999, 66% of the persons hospitalized in Secretariat of Health institutions were between 15 and 44 years of age. Hospitalizations related to pregnancy, delivery, and the puerperium accounted for 67% of the total, followed by disorders of the digestive system (6.4%) and accidental injuries (6.3%). In the Federal District mental illness affected 9.0% of adults aged 18–65 years, and major depressive episodes were the most common condition (7.8%), with a ratio of 2.5 women for every man.

Maternal mortality was relatively constant over the last decade, with a small increase from 47 per 100,000 live births in 1997 to 51 per 100,000 in 1999. Hypertensive and hemorrhagic complications were the leading causes of death, and the states of Chiapas, Guerrero, Mexico, Tabasco, Tlaxcala, and the Federal District had the highest rates (between 6.5 and 7.0 per 10,000 live births). Cervical cancer decreased from 20 deaths per 100,000 women aged 25 and over in 1998 to 19.51 in 1999, and the rate for breast cancer declined from 15 per 100,000 in 1998 to 14 in 1999.

A study of violence against women found a prevalence of 57% in the urban area of Guadalajara and 44% in rural areas, while 33% of the women who had a hospital-attended delivery reported that they had suffered physical, emotional, or sexual abuse at some time during their pregnancy. A survey conducted in the Federal District metropolitan area found that there had been physical violence in 11% of the sample households, and in 14% of these cases it had been extreme.

In 2000, 70% of the women of reproductive age (15–49 years) with a regular partner were using contraceptives, an increase of 1.2% relative to 1997. The states with the highest percentages were Sinaloa (79%) and Nayarit (76%), and those with the lowest were Guerrero (52%) and Chiapas (57%). In 1999 the most common methods adopted by new contraceptive users were the intrauterine device (26%), injectable hormones (23%), and oral contraceptives (22%), while the use of condoms increased slightly more than 10% between 1998 and 1999.

The Elderly (65 years and older)

General mortality in the group over 65 declined from 4,924 per 100,000 in 1997 to 4,763 per 100,000 in 1999. In 1999 this age group accounted for 49% of all deaths, with a predominance of males (56%). The leading causes of death in 1999 were heart diseases (1,106 per 100,000 adults in this age group), mainly ischemic heart disease (706 per 100,000); malignant neoplasms (612), especially of the trachea, bronchus, and lung (91), prostate (72), and stomach (63); diabetes mellitus (584); and cerebrovascular diseases (417).

A survey of the health and social well-being of older adults conducted in the Mexico City metropolitan area from November 1999 to July 2000 found that 87% of the men knew how to read and write, compared with 78% of the women of the same age, and the rate of cognitive deterioration was higher in women aged 60–80 (13%) than it was in men (8.3%). About 17% of the women and 13% of the men over 80 who were interviewed said that they were living alone, and 22% of the men and 28% of the women had no access to the health services provided under the social security system.

Workers' Health

The number of reported cases of occupational diseases increased from 19 per 100,000 workers in 1997 to 29 per 100,000 in 2000. Hearing disorders and traumatic deafness were the most frequent (45%), followed by respiratory diseases from chemical fumes and discharges (24%) and silicate pneumoconiosis (10%). The cumulative incidence of work-related accidents declined from 317 cases per 100,000 workers in 1997 to 286 per 100,000 in 1999, although the mortality rate increased during the same period from 9.3 to 10 per 100,000. The states with the highest mortality rates in 1999 were Zacatecas (21), Colima (19), and Guanajuato (18).

The case fatality rate for occupational diseases and work-related accidents rose from 2.9 per 100 affected workers in 1997 to 3.6 in 1999, and permanent disability among those who became ill or had an accident increased from 3.9% to 4.7%. The states with the highest disability rates were Chiapas (9.8%), Zacatecas (7.0%), and Tabasco (6.7%).

The Disabled

According to the 2000 Census, 2.2 million inhabitants, or 2.3% of the total population, had some physical or mental disability or long-term health problem, and of this number, 45% were in the economically active age range. Forty-five percent of this population had limitations related to the arms or legs, 29% were blind or could only see shadows, 17% were deaf or relied on a hearing aid, and 10% had some other type of disability. In terms of causes, 32% of the disabilities were the result of a disease, 23% were due to advanced age, 19% were congenital, 18% were secondary to an accident, and 1.9% were attributable to other causes. The states with the largest percentages of disabled persons relative to their total population were Yucatán (2.9%), Colima (2.4%), Zacatecas (2.4%), Nayarit (2.4%), and Campeche (2.3%).

Indigenous Groups

In 2000 there were 6 million people over 5 years of age who spoke an indigenous language, and they belonged to 92 different

groups located throughout the country. Sixty-two percent of the indigenous population was concentrated in 15 states and 531 municipalities, mainly in Yucatán and Oaxaca, where they represented slightly more than 37% of the total population, followed by Chiapas (27%) and Quintana Roo (23%). Of those over 15 years of age, 48% were unable to read or write, versus 8.5% in the nonindigenous population; 28% of the men were illiterate (versus 6.9% in the nonindigenous population), as were 49% of the women (versus 10%). The National Population Council estimated that the general fertility rate among indigenous women in 1995 was 3.8 children per woman, representing a decline with respect to 1990. In 1995 the ethnolinguistic groups with the lowest fertility rate were the Mayans (3.3 per 1,000 women of childbearing age) and the Otomis (3.3), while the Tzeltals (4.3) and the Tzotzils (4.3) had the highest rate. Infant mortality in the indigenous population, corrected for underregistration using the Brass method, was 59 per 1,000 live births in 1997, or twice as high as the overall national rate.

Border Populations

Six states in northern Mexico border on the United States of America: Tamaulipas, Nuevo León, Coahuila, Chihuahua, Sonora, and Baja California. In 1997 the population growth rate in this area was estimated at 4.3%, the crude birth rate was 26 live births per 1,000 population, and the crude death rate was 47 per 100,000—even higher in the states of Nuevo León, Tamaulipas, and Coahuila. The leading causes of death were heart diseases, malignant neoplasms, and accidents, with accidents being the leading cause in the population aged 1–45 years, while heart diseases and neoplasms were the leading causes in those aged 65 and over. In 1999 one-third of the population in the Mexican communities along the northern border was under 15 years of age, and 4% were over 65.

By Type of Health Problem

Natural Disasters

During 1997–2000 a number of serious natural disasters in the central and southern parts of the country affected an estimated area of more than 150,000 km^2 and a total population of more than 6 million, the majority of them poor. In 1997 Hurricane Paulina caused flooding in the states of Oaxaca and Guerrero that affected 900,000 people. The following year severe flooding in the state of Chiapas along the coast and in the Sierra Madre affected 650,000 over an area of 26,000 km^2. In 1999, 90 natural disasters were reported, including floods caused by Tropical Depression No. 11, which affected 594,883 people in the states of Chiapas, Hidalgo, Oaxaca, Puebla, Tabasco, and Veracruz and placed more than 3 million inhabitants at risk in an area of 56,000 km^2. Again in 2000 frequent floods left damage in their wake in the states of Mexico, Tabasco, Tamaulipas, Quintana Roo, Campeche, Coahuila, and Michoacán. In addition, eruptions from the volcano Popocatépetl led to the evacuation of thousands of people in the states of Mexico, Morelos, and Puebla. The government took a wide range of steps in response to these disasters: several workshops in disaster preparedness were offered at the municipal level, an intermunicipal aid fund was set up in 1998 for mutual support in the event of disaster, and the structural and functional soundness of the main hospitals was assessed.

Vector-borne Diseases

The states with the highest incidence of malaria are Oaxaca, Chiapas, and Sinaloa. The year 2000 saw a 45% reduction in the number of cases relative to 1999 and a 71% reduction with respect to 1998. The largest outbreak in the last four years occurred in Oaxaca in 1998 and produced 11,349 cases. The reported rates in Oaxaca fell from 120 per 100,000 population in 1999 to 15 per 100,000 in 2000. In that year Chiapas had 49% of all the cases of the country, and 35% were shared by Chihuahua, Sinaloa, Oaxaca, and Quintana Roo. No deaths from malaria were reported during 1997–2000.

The presence of the vector that transmits classic and hemorrhagic dengue has been reduced, but not by enough to prevent outbreaks. The incidence of classic dengue declined from 52.1 cases per 100,000 population in 1997 to 2.4 per 100,000 in 2000, and only Campeche, Guerrero, and Michoacán had increases in 1999, which were moderate. Hemorrhagic dengue also declined, from 954 reported cases in 1997 to 220 in 1999 and 50 in 2000. The states that had the most recorded cases were Chiapas, Veracruz, Nuevo León, and Oaxaca. Deaths declined from 30 in 1997 to 10 in 1999, and the case fatality rate dropped from 3.8 per 100 patients in 1999 to zero in 2000. Dengue-3 was the serotype in circulation during 1997–2000, and dengue-2 was added in 1999; currently, all four serotypes are in circulation. As part of the international effort to cut back on the use of insecticides, the country reduced its application of DDT by 60% in 2000.

During 1997–2000 there was a cumulative total of 1,424 reported cases of onchocerciasis (1.4 cases per 100,000 population). In 2000, incidence of the disease was down 41.2% relative to 1999 and 61.3% compared with 1998. The states of Oaxaca and Chiapas have the two largest foci, and the population at risk has been estimated at 158,824, residing in 953 localities in 60 municipalities. Leishmaniasis occurred primarily in the states of Quintana Roo, Tabasco, Campeche, and Chiapas, with 1,700 cases reported in 1997. That was 20% more than in 1996 and 40% less than in 1998. There were 20 new cases of Chagas' disease (American trypanosomiasis) in both 1997 and 1998, and in 1999 this figure rose to 42. A study of communities in the state of Veracruz conducted in 2000 found that the incidence ranged from 1 to 20 cases per 1,000 population, and most of the cases were in children and adolescents under 15 years of age. Mortality from this disease remained stable at 10 deaths a year during 1997–1999. Only 13% of the donations received at the

that protect their physical well-being, health, and safety and reduce their occupational risks. However, its coverage is limited to a mere 80,092 workers out of an economically active population of nearly 2 million. Among covered workers, the general accident rate for 1999 was 83 per 1,000 workers, with a mortality rate of 6.4 per 1,000. The main types of risks associated with occupational accidents are mechanical and chemical in origin. Occupational health care services are furnished mainly in Ministry of Health facilities. Only 18% of the EAP is covered by social security. An estimated 24,000 children between 10 and 14 years of age are working at jobs in the informal sector, with another 6,000 employed in the formal sector.

Between 90% and 100% of farmers and farmhands are exposed to some type of pesticide every year. Official statistics for 1999 put the work-related pesticide poisoning rate at 5 cases per 10,000 population. However, studies conducted in various parts of the country put the true annual incidence rate for pesticide poisoning at from 3% to 9% of exposed farm workers.

The Disabled

The National Rehabilitation Program operated by the Ministry of Health estimated the percentage of the population with some type of disability at 12.1% (615,195 individuals) for the year 2000. The leading causes of disabilities were problems at birth (10%), disease (29%), war (2.6%), and accidents (11.85%). The most common types of reported disabilities were hearing impairments (9.23%), speech impairments (3.4%), hearing and speech impairments (0.5%), visual impairments (63.9%), locomotor disabilities (5%), mental disabilities (4.4%), seizures (4.21%), and others (6.2%).

The number of victims of antipersonnel mines has tended to decline over the last few years. In absolute terms, there were 23 reported victims in 1997, 33 victims in 1998, 24 in 1999, and 16 in 2000.

Indigenous Groups

The indigenous population made up approximately 5% of Nicaragua's total population in the 1996–2000 period. Most indigenous groups live on the Caribbean coast. The main problems faced by indigenous communities are poverty related, and their health situation is impaired by the inaccessibility of health care services, shortages of drugs, little or no access to a safe water supply, and illiteracy, among other factors.

By Type of Health Problem

Natural Disasters

Nicaragua is extremely vulnerable to natural disasters. During the last reporting period, the country was hit by a series of natural disasters such as hurricanes, volcanic eruptions, earthquakes, tidal waves, droughts, torrential rains, floods, and landslides The worst disaster during this period was Hurricane Mitch, which struck the country in October of 1998. It caused 2,823 fatalities, with another 885 persons reported missing, and damaged 49 municipalities. The most recent disaster was the earthquake that struck the city of Masaya in July of 2000, with a death toll of nine. On both occasions, the disaster victims were treated at various health care facilities (hospitals, health centers, health posts, and disaster shelters) and rescue and recovery operations were mounted in conjunction with the Red Cross, the Civil Defense Agency, and the Fire Fighting Service.

The Ministry of Health has undertaken a series of actions designed to protect the public health in the event of a disaster, including programs for monitoring the quantity and quality of drinking water, food monitoring and safety programs, sanitation programs, wastewater and solid waste management programs, vector control programs, and psychosocial services. Aside from injuries, the main health problem caused by natural disasters is a surge in certain pre-existing diseases such as acute respiratory infections, acute diarrheal diseases, and vector-borne diseases such as *Plasmodium vivax* malaria and, occasionally, *P. falciparum* malaria. Flooding has triggered outbreaks of leptospirosis, skin diseases, and eye diseases.

Vector-borne Diseases

Patterns in the incidence of malaria over the past 20 years have been erratic. The largest number of cases (76,269) was reported in 1996, with an annual parasite index of 18.4 per 1,000 population, a positive slide rate of 16.31%, and an annual blood test rate of 11.3%. The downward trend in malaria cases over the 1997–2000 period was interrupted by a small jump in malaria cases in 1999 in the wake of Hurricane Mitch, particularly in cases of *P. vivax* malaria. The hardest-hit age group was 15–49 years, followed by those 5–14 years old, heavily impacting on rates of absenteeism from work and from school, respectively.

The departments with annual parasite indices for the year 2000 above the national average of 4.7 per 1,000 population were the Autonomous North Atlantic Region (14.8 per 1,000), Nueva Segovia (12.2), Chinandega (11.5), and Río San Juan (9.7). The number of deaths dropped from 17 (0.4 per 100,000 population) to 4 (0.08 per 100,000) over the period from 1997 to 2000. Of a total of 43 reported fatalities during the 1997–2000 period, 21 were in the Autonomous North Atlantic Region (49%), followed by Matagalpa and Chontales departments, with 6 fatalities each (14%). These three departments have the highest prevalence of *P. falciparum* malaria. The number of cases of *P. falciparum* malaria nationwide plummeted 67.2% over the period between 1997 and 2000, with the North and South Atlantic regions accounting for the largest share.

There was no clearly defined trend in the incidence of dengue over the 1997–2000 period. The nationwide incidence rate for 1997 was 7.3 per 100,000 population. The most heavily affected departments were Managua, Estelí, and León. The risk of con-

(11%), diseases of the musculoskeletal system (9.8%), diseases of the circulatory system (9.8%), diseases of the digestive system (6%), and infectious and parasitic diseases (5.4%). In 1999, a total of 11,416 older adults had 28,625 check-ups (approximately 2.5 visits per person). The mortality rate for this age group in 1999 was 554.8 per 100,000, and the leading cause of death was malignant neoplasms.

Family Health

In Panama, 27% of the households are headed by women. In rural areas, 71% of female-headed households live in poverty, and in the cities, 48% live in poverty. The marriage rate was 3.6 per 1,000 population in 1995 and 4.0 per 1,000 in 1999, while the divorce rates for those same years were 5.7 per 10,000 and 9.0 per 10,000, respectively. The divorce rate among indigenous groups—55.7 per 10,000 in 1995 and 86.4 per 10,000—is 10 times higher than in the rest of the Panamanian population.

Workers' Health

According to information supplied by the Social Security Fund (CSS), in 1998, a total of 7,968 female workers received maternity benefits amounting to about US$ 1,306 each. In addition, 13,899 benefits were granted for temporary disability (1,160 of them to women), 25% of them to workers in the agroindustrial sector, 25% to those in the manufacturing sector, and 11% to construction workers.

The leading causes of accidents in the workplace were incorrect handling of materials (46%) and improper use of manually operated tools (24%). Compensation for occupational illness increased between 1994 and 1998, when the CSS paid a total of 518 benefits for this cause. In addition, the CSS paid 1,437 benefits for accidents incurred during travel to and from the workplace which affected workers' health, even though they were not directly job-related, and of the recipients, 43% were workers in the service sector.

In 1999, the rate of pesticide poisonings of all kinds was 16 per 100,000 population. There were 448 serious cases, of which 43.5% (195) were work-related. By sex, 19.2% (86) of the serious cases were in females and 80.8% (362) in males, and in terms of age, 15.2% (68) were in the population under 15 years of age. That same year 37 persons died from poisoning; suicide was the leading cause (87%), and the main poisons used were bipyridyl and organophosphate pesticides.

The Disabled

According to the 2000 census, 31,111 Panamanians, or slightly less than 10% of the total population, had some form of disability—17,423 males (56%) and 13,688 females. In August 1999, the Legislative Assembly approved Law 42, which establishes equal opportunities for the disabled. As far as employment is concerned, 26 disabled persons were reported to have jobs in 1995 (17 men and 9 women), 25 (2 of them women) were working in 1997, and the figure was down to 16 (3 women) in 1998.

Indigenous Groups

Indigenous peoples represent 9% of the Panamanian population. Ninety-five percent of them are living in poverty and 86% in extreme poverty. The ethnic group most seriously affected is the Ngobe-Buglé, which is the most numerous and has the highest fertility rate (3.6 children per woman), the largest average number of dependents per household worker (3.8), and the largest families.

The health situation of the indigenous groups stands in marked contrast to that of the rest of the Panamanian population. For example, life expectancy in the country as a whole was 74.3 years in 1999, whereas in the province of Bocas del Toro, which has one of the largest concentrations of indigenous population, it was only 69.9 years. That same year, the infant mortality rate in Bocas del Toro was 39 per 1,000 live births, compared with 16.6 per 1,000 for the entire country. Similarly, the fertility rate and the crude birth rate for all of Panama were 2.6 children per woman and 21.9 per 1,000 population, respectively, whereas in Bocas del Toro these rates were 3.9 children per woman and 32.4 per 1,000.

BY TYPE OF HEALTH PROBLEM

Natural Disasters

During the 1998 and 2000 rainy seasons, rivers overflowed in the provinces of Chiriquí and Darién and produced moderate damage, mainly affecting agricultural production and destroying highways and bridges. In Panama City, a total of 21 sites have been identified where flooding has occurred due to solid waste blocking canals and rivers.

Vector-borne Diseases

Between 1996 and 1999, a total of 880,743 blood samples were examined and 0.3% of them were found to be positive for malaria; in all, 3,993 cases of the disease were detected in Panama. Of these cases, 27.8% occurred in 1998–1999. The annual parasite index (API) was 0.2 in 1996–1997, 0.4 in 1998, 0.3 in 1999; and 0.4 in 2000. *Plasmodium vivax* has been responsible for the majority of cases since 1957, but cases due to *P. falciparum* increased from 20 (4%) in 1993 to 179 (17.9%) in 1999. *P. malariae* has not been detected since 1972. In 1999, most of the malaria cases were concentrated in the following health regions: Darién (555), Bocas del Toro (191), Eastern Panama Province (104), Colón (82), and Kuna Yala (56)—a pattern that correlated with indigenous migration and movements across the country's land borders.

In support of the "Roll Back Malaria" initiative, an interinstitutional commission was created and given official status under an executive order. The commission includes representatives of

2000, a total of 16 deaths from work-related accidents were reported.

Indigenous Groups

The indigenous population is an ethnic minority that represents only 1% to 2% of the nation's total, and it has a slower growth rate than the rest of the population, although the pattern is similar. However, indigenous groups have been an essential presence in the historic and social formation of the Paraguayan people, and they currently constitute a highly vulnerable sector. There are 17 known ethnic subgroups, which belong to 5 linguistic families: the Guarani, Lengua-Maskoy, Mataco, Guaicurú, and Zamuco. There are no recent data available on these populations. According to the 1992 census, the most numerous groups are found in the Chaco region, where they constitute 30% of the total population, and indigenous groups of the Chaco represented 59% of the indigenous population counted in the national census. Their high rates of infant mortality (93.9 per 1,000) and illiteracy (as high as 94% in the population over 15 years old), coupled with the poor state of their housing (93% of the homes have no sanitation or drinking water), characterize them as the poorest of the poor in Paraguay.

According to the 1992 census, which is the most recent information available, the fertility rate in indigenous women was 5.7 children per woman.

By Type of Health Problem

Natural Disasters

In recent years, especially in 1998, the country has suffered the effects of global climatic change and the El Niño phenomenon, which have generated emergency situations and floods that have taken a heavy human toll and caused extensive damage. Flooding in 1998 caused 49 deaths, the destruction of 4,500 homes, the displacement of 13,000 families, and economic costs estimated at US$ 70 million. Recently, the country has also seen an increase in potential risks from chemical emergencies and disasters as a result of improper handling of hazardous products stored in places that were vulnerable to floods.

Vector-borne Diseases

The period 1993–1997 had an annual average of 624 reported cases of malaria, but in 1998 the number rose to 2,091, and the API was 0.5 per 1,000 population. Then, in 1999–2000, an epidemic occurred, with 9,946 reported cases in 1999 (API 2.2 per 1,000), 72% of these during the first half of the year; in 2000, there were 6,853 cases (API 1.4 per 1,000), which reached their peak between March and May. Most of these cases—82% in 1999 and 80% in 2000—occurred in the three departments at highest risk: Alto Paraná, Caaguazú, and Canindeyú. The male-female ratio was 2.5:1 in 1999 and 2.2:1 in 2000. People of all ages were affected, and the APIs by age group were as follows: 1.3 per 1,000 for adults aged 60 and over, 1.7 for the population 5–14 years old, and 2.1 for adults aged 20–59. All the cases studied, except three in 1999, were caused by *Plasmodium vivax*. No deaths were reported.

In addition to revealing conditions that were propitious for transmission, the epidemic brought to light deficiencies in infrastructure and training as well as the limited action being taken by the health services and the community to address the problem. The Ministry and the National Malaria Eradication Service shored up the affected area by transferring personnel from other regions, reactivating and expanding the network of voluntary collaborators, and progressively enlisting the participation of the health services network.

After a decade of epidemiological silence, dengue transmission was detected in February 1999, and an epidemic ensued, located mainly in the Alto Paraná, Amambay, and Central departments, which lasted until June. The Central Public Health Laboratory documented 1,164 serologically confirmed cases, and international reference laboratories identified the dengue-1 serotype. In December 1999, an extensive outbreak was recorded in the city of Luque, Central Department, next to Asunción, and from January through April 2000, the country was ravaged by a massive epidemic with confirmed cases in 18 departments but concentrated especially in the capital and the Central and Alto Paraná departments. In all, there were 24,282 reported cases, 2,910 of which were confirmed either by serology or isolation of the dengue-1 virus. According to surveys conducted during the epidemic, there may have been more than 100,000 cases in Asunción alone. In the laboratory-confirmed cases, older adults were at greatest risk, and the incidence in children was low (20.3 per 100,000 population in those aged 0–9 years, 38.8 per 100,000 in adolescents aged 10–19 years, 69.7 per 100,000 in adults aged 20–59 years, and 85.5 per 100,000 in those aged 60 and older). No cases of hemorrhagic dengue were documented.

The country undertook an intensive campaign to combat the epidemic, enlisting the participation of institutions and organized community groups. Nevertheless, many Paraguayan cities still have indexes of *Aedes* that are compatible with transmission of dengue.

The endemic area for vector-borne transmission of Chagas' disease encompasses seven departments in the eastern region and much of the Chaco. The main vector is *Triatoma infestans*, but *T. sordida*, *T. guazu*, and *Panstrongylus magistus* are also present.

In a serologic survey conducted between 1995 and 1999 to detect *Trypanosoma cruzi* antibodies in pregnant women, the department of Cordillera was found to have an overall seroprevalence of 15%, with a range in its municipalities from 8% to 34%. In 2000, the rate of positive serology for *T. cruzi* in women aged 15–44 years who came to the Ministry's health services for prenatal monitoring was 14.5% in Cordillera and 12.8% in

age, 72.0% were in microbusinesses with up to 10 employees, 4.2% were in businesses with 10 to 20 workers, and 23.5% were in larger businesses. Those in the informal sector represented 55% of all urban workers.

The two main challenges to workers' health are deficiencies in worker safety and the low coverage of occupational health services. Social security coverage in the country fell from 40.7% of the EAP in 1986 to 23.4% in 1995, with an estimate of 22% for 2001, and coverage of occupational risks is even lower. The legislative changes in this area have failed to improve the figures, although progress has been made in terms of institutional development and increased human resources in the field of occupational health. Indeed, broad sectors of the working population remain unprotected, and new risk factors are being added to the traditional ones. Flexibilization has had a negative effect on working conditions and consequently on workers' health. The least protected workers are those in the informal sector, minors, and those in the formal sector employed under third-party contracts and subcontracts.

Although information on work-related accidents and occupational diseases suffers from underreporting, it is known that the number of mining accidents decreased between 1992 and 2000, thanks to initiatives on the part of employers, social security, and the workers themselves. In 1998 there were 1,300,000 workers between 6 and 17 years of age, most of whom had no health care services or protection through worker safety programs.

The Disabled

Development of the Disability Information Module (His-Dis) in 1995 has made it possible to have national statistics on disability since 1997. The National Rehabilitation Institute provided 191,000 consultations in 1998, and the most frequent type of disabilities were locomotor (37%) and body disposition (18%). By degree of disability, 53% of these cases were mild, 27% were moderate, and 10% were severe. The last-mentioned were primarily associated with alterations in higher-level mental function (34%), other diseases of the nervous system (27%), and spinal cord lesions (26%). Activities related to the strategy of community-based rehabilitation made it possible to expand coverage and provide more care for the disabled. Since 1998 pilot centers have been established, consciousness-raising work has been done with health professionals and technicians, and 13 of the 70 rehabilitation centers in Peru have been upgraded.

Indigenous Groups

In 2000, the mother tongue of nearly 17% of the Peruvian population (and a similar proportion in 1997) was an indigenous language: Quechua, Aymara, Campa, Shipibo, or other, of which Quechua had the largest number of speakers. Relative to the Spanish-speaking population, the country's indigenous peoples are disadvantaged in terms of both their general situation and their health status, and these conditions have not changed since 1997.

By Type of Health Problem

Natural Disasters

Because of its location on the so-called "Pacific Rim of Fire," Peru is vulnerable to the effects of earthquakes and volcanic eruptions. It is estimated that 80% of the population is at risk of suffering damage from an earthquake. In addition, the country's orography makes for frequent avalanches and landslides, and the National Civil Defense Institute has estimated that 35% of the population is at risk of being affected by such disasters. Between 1993 and 1997 there were a total of 1,478 natural disasters of some kind—mainly floods, avalanches, and localized seismic tremors. These events took the lives of 1,667 people, caused injury or loss to another 872,750, destroyed 38,360 homes, and damaged an additional 131,855 dwellings to some degree. The agricultural losses affected some 254,000 hectares, and the overall economic toll was calculated at US$ 100.4 million.

Vector-borne Diseases

It is estimated that 2.5 million inhabitants live in areas at high risk or very high risk for malaria transmission (8% of the districts in the country). Between 1989 and 2000 there were an average of 180,000 confirmed cases of malaria each year, and incidence of the disease was on the increase up until 1998. In that year the annual parasite index was 10.0 per 1,000, but by the year 2000 it had fallen to 2.7 per 1,000. Malaria in Peru follows a definite cyclic and seasonal pattern. It is also associated geographically and ecologically with specific sections of the country: the tropical areas and irrigated desert areas of the northern coast, the northeastern montane jungle, the central and southeastern jungle, and the Peruvian Amazon basin. In 1999, 70% of all reported cases were concentrated in the most active endemoepidemic areas, located in the departments of Loreto, Tumbes, and Piura. Plasmodium vivax malaria is predominant. The proportion of *P. falciparum* cases, after increasing from 19.7% in 1995 to 41.6% in 1999, dropped back down to 30.2% in 2000. The rise in *P. falciparum* malaria has been linked to the expanded geographic range of the vectors in Loreto in 1995–1996 and in Tumbes and Piura after the El Niño phenomenon of 1997–1998; to the emergence, spread, and dispersion of treatment-resistant *Plasmodium* strains; and to the increase and dispersion of *Anopheles darlingi* in Loreto and *Anopheles albimanus* in Tumbes and Piura. The mortality rates from severe malaria were 0.19 per 100,000 population in 1999 and 0.08 in 2000, and the age groups most affected were adults over 45 and children aged 1 to 4 years. Loreto had the largest number of deaths.

The *Aedes aegypti* dengue vector is found over an area of 175,000 km^2 (13.6% of the national territory), which is home to 3.4 million persons (13.2% of the total population). Dengue is endemic in Iquitos, Pucallpa, and Tarapoto, where it entered Peru in 1990 in the form of an epidemic that has produced 7,858 reported cases of classic dengue. Initially, the dengue-1 serotype

who have had fewer than three prenatal consultations, in teenage mothers, and in Hindustani mothers.

The country's Bureau of Public Health reported the infant mortality rate for 1999 at 29 deaths per 1,000 live births, and a survey estimated it at the same level for 2000. Most infant deaths are caused by conditions originating in the perinatal period (49%), followed by congenital malformations and gastrointestinal and respiratory infections. The mortality rate for children under 5 years old was 32 per 1,000 in 2000.

According to information from four major hospitals in Paramaribo, the perinatal mortality rate between 1995 and 1999 was approximately 30 deaths per 1,000 per year.

The major causes of death for children aged 1–4 years old were gastrointestinal infections (24%) and external causes (20%). The mortality rate for children under 5 years old is estimated at 37 per 1,000 live births.

Children in the interior have a higher prevalence of growth retardation (18%) than those living on the coast. Between 1997 and 2000, 125 children on the average were admitted for malnutrition.

Schoolchildren (5–14 years)

Accidents and trauma are the main cause of death in this group. Age-appropriate immunization is a requirement for entry into primary school (by age 6 years).

Adolescents (15–19 years)

Prostitution, crime, and drug use are important problems for adolescents in socially deprived areas.

Adults (20–59 years)

This age group represents 50% of the population. Accidents and trauma are the main cause of death among 20–59-year-olds, followed by HIV/AIDS and cardiovascular diseases. In 1997–1999, AIDS was the second and third leading cause of death for males and females in the age group 15–44 years old, respectively. Cancers ranked among the top three causes of death in women, while external causes and cardiovascular and cerebrovascular diseases did among men.

In 2000, oral contraceptives were the most popular method of birth control (70%). Some 40% of women with partners use contraceptives. According to a survey, contraceptive use was 51% in urban areas, 45% in rural areas, and 7% in the interior.

A maternal mortality survey for 1995–1999 reported an annual average of 73 maternal deaths per 100,000 live births. The 1999 maternal mortality rate reported by the Bureau of Public Health was 108 per 1,000 live births. For 1995–1999, the major causes of maternal mortality were hypertensive disorders complicating pregnancy and complications of delivery and puerperium.

The Elderly (60 years and older)

The elderly account for 7.6% of the total population, with slightly more females (16,239) than males (14,639). The major causes of death in this group are hypertension and heart disease, followed by cerebrovascular disease and malignant neoplasms. Most cancer deaths (27%) were cancers of the gastrointestinal tract, followed by cancer of the reproductive organs (17%), of the respiratory organs (11%), of the female breast (9%), of blood and lymphoid tissues (9%), and of the urinary system (4%).

Family Health

An estimated 40% of households consist of 3–4 members. Of children aged 0–14 years old, 62.2% live with both parents, 22% live with only their mothers, and 7% live with neither parent. In the interior, however, fewer than 50% live with both parents, 34% live only with their mother, and 12% live with neither parent.

The Disabled

The Ministry of Social Affairs coordinates special programs for the disabled. In addition, nongovernmental organizations undertake activities on behalf of such groups as the blind, the hearing-impaired, former leprosy patients, and children with physical and mental disabilities. A rehabilitation center that is part of the Academic Hospital in Paramaribo provides services to patients referred for fitting of artificial limbs, physical therapy, occupational therapy, and speech therapy.

Indigenous and Other Special Groups

The Medical Mission, a government-funded, nonprofit organization, is the sole health care provider for the more than 50,000 Maroon and Amerindian people who live in the country's nearly inaccessible interior. Curative and preventive health services are free of charge and include transportation to and treatment at the hospital in Paramaribo. There are between 800 and 1,000 referrals made each year to the hospital in Paramaribo.

There are about 20,000 to 40,000 persons who work as gold miners (*garimpeiros*) in Suriname, and this industry predisposes them to mercury poisoning and malaria transmission; gold miners also are particularly beset by HIV/AIDS and other sexually transmitted infections.

By Type of Health Problem

Vector-borne Diseases

There were between 80,000 and 90,000 cases of malaria each year, most of which occurred in the interior along the eastern border and the Marowijne River. In endemic areas, 40% of the cases are among children under 5 years old and 60% are in children under the age of 14 years. Chloroquine resistant malaria due to *Plasmodium falciparum* is widespread, but quinine resistance has not yet been established.

The number of reported dengue cases rose considerably, skyrocketing from 3 laboratory-confirmed cases in 1997 to 149 in 1998; all cases were serotype 1. There were no reported cases of

Indigenous and Other Special Groups

In the U.S., Blacks, Latinos, Native Americans, and Asian/Pacific Islander Americans incur a disproportionate share of mortality, morbidity, disability, and adverse health conditions compared to non-Hispanic Whites. Health indicators for life expectancy and infant mortality show a trend of the health gap widening between majority and minority ethnic/racial groups, even as these health indicators improved for most groups over the nineties. These overriding health disparities between ethnic and racial populations were strongly related to socioeconomic disparities and differences in poverty levels in each group.

The Latino population, the largest and fastest growing minority in the United States, comprised 12.5% of the population in 2000 and included persons of Mexican, Puerto Rican, Cuban, and South and Central American descent among others. Health disparities within the country's Latino population—age-adjusted death rates were substantially lower for Latinos of Cuban descent than for those of Mexican or Puerto Rican descent—primarily reflected socioeconomic differences. Overall, health indicators for Latinos improved during the 1990s.

African-Americans, who made up more than 12% of the population in 2000 and participate in all socioeconomic levels, have three times the portion of their population living in poverty than do non-Hispanic Whites: one-third of all Blacks live in poverty. Half of the Black population lives in urban areas often typified by inadequate housing, poorly-funded schools, lack of living-wage employment opportunities, and violence. African-American death rates were higher than those for Whites for most leading causes of death. For African-Americans 15–24 years old, homicide was the leading cause of death for males and the second leading cause of death for females. But Blacks had lower death rates for suicide and chronic obstructive disease than non-Hispanic Whites. Overall, many health indicators improved for Black communities in the 1990s: colorectal, respiratory, and breast cancer death rates dropped, and there were gains in leading health indicators such as infant mortality and overall death rates.

Asian and Pacific Islanders, who speak more than 30 different languages and originate from very different cultures, represented almost 4% of the country's population in 2000. Overall, they had roughly the same socioeconomic and health status as the majority White population. Some in this group had been in the United States for generations, but others had come more recently. Given the diversity of this population, health challenges vary substantially from group to group. Southeast Asian men suffered more lung cancer than the majority male population, and older Filipino men living in California had greater rates of high blood pressure than other California men of the same age. Southeast Asian immigrants are 40 times more likely to have tuberculosis and hepatitis B than the general population.

In 2000, those reporting only as American Indian or Alaskan Natives made up 0.9% of the population, or 2.5 million persons, and those reporting as Native Americans or Alaskan Natives and at least another race represented 0.6% of the population, or 1.6 million persons. This minority resides primarily in urban areas or on reservations, and many receive their health care through clinics and hospitals provided by the federal government's Indian Health Service. The population is very young, partly because many of them die before reaching old age. This native population was much more likely than the general population to die from diabetes mellitus related to obesity, and liver disease due to alcohol abuse. Accidents and violence (homicides and suicides) were the leading causes of death among Native Americans and Alaska Natives. Alcoholism, which contributed to many of the major causes of death, is a leading health and social problem in this community. Smoking prevalence also is higher among them, increasing risk for smoking-related diseases.

In 2000, more than 93,000 refugees were admitted into the United States. There have been drastic changes in the origins of refugees coming to the U.S. in the late 1990s. In 1997, only 3% of all refugees came from Africa, but in 2000, one-quarter came from that continent. Refugees often had health problems that originated in conditions of the country of origin and that sometimes required extraordinary support and treatment. The federal and state governments provided health care coverage for these new arrivals through Medicaid or through a special federal government fund.

By Type of Health Problem

Natural Disasters

Natural disasters led to some loss of life, injury, substantial property damage, and major daily life disruptions. In 1999, five southern states coped with major disasters due to winter storms. California suffered severe winter freeze. Severe storms left major destruction in six states. Eight states had major declared disasters of severe flooding. Destructive tornadoes touched down in 11 states. Hurricanes Floyd, Irene, Dennis, and Bret caused major destruction in Texas and 14 states along the eastern coast of the United States. Four states issued emergency alerts due to fires.

In 2000, only five states declared major disasters due to tornadoes, and none faced a hurricane. Winter storms caused major disaster to be declared in 14 states and Washington, D.C.; 16 states also suffered other seasonal storms and 3 states suffered floods, all leading to major disaster being declared. Three states sustained major destruction due to wildfires; California dealt with a substantial earthquake. In the late 1990s, no section of the country was immune from natural disasters. West coast areas were more prone to earthquakes; southern and eastern coastal states were more vulnerable to hurricanes. Certain regions in the South and the Midwest were more prone to tornadoes. The type

Nevertheless, the 1980s saw a reversal in the maternal mortality trend, which increased slightly and then declined again in the 1990s. In 1999, maternal mortality was 59 per 100,000 live births. The states with the highest rates were Delta Amacuro (242 per 100,000 live births), Trujillo (171) and Nueva Esparta (114). The most important causes of death were complications of pregnancy, childbirth, and the puerperium (50%); edema, proteinuria, and hypertensive disorders (35%), and pregnancy ending in abortion (14%). Most of these causes are avoidable, considering that over 90% of deliveries in Venezuela occur in institutional settings. Sixteen percent of women of childbearing age have anemia, and the rate is as high as 22% among the poorest women. Only 25.5% of women received prenatal care in 1997.

The Elderly (60 years and older)

This population accounted for 6.5% (46% men) of the total population in 2000. The population in this group is expected to triple by 2025. In 1998, the leading causes of mortality in this group were heart disease (32%), malignant neoplasms (18%), cerebrovascular diseases (12%), and diabetes (8%). The risk of death due to these causes is higher in men, except in the case of diabetes. The leading causes of morbidity that year were hypertension, followed by influenza-like syndromes, diabetes, urinary infections, and rheumatoid arthritis.

Workers' Health

Occupational hazards in the 1990s have increased as a direct result of informal employment, the use of inadequate premises, and because homes are used as centers of production. Even with underregistration, the most frequent occupational diseases are industrial deafness (work-related hypoacusis) and other conditions associated with noise and vibrations, chemical poisoning, and musculoskeletal disorders.

Under-age workers are protected by Articles 247 to 273 of the Labor Act, which guarantees them the same salary as adults. Children under 14 are not allowed to work and legal authorization is required from parents or legal guardians for young people aged 14–16 years of age to carry out an economic activity; in any event, they cannot work more than 6 hours a day and 30 hours a week or work nights. According to a journal published by the Institute for Higher Management Studies (IESA), the number of working women has increased and the differential between the average income of women and men has narrowed. The presence of children aged 10–14 in the labor market has also increased. Though illegal, most of these young people are self-employed.

The Disabled

It is estimated that 10% of the population has some degree of physical or mental disability or handicap. Article 81 of the National Constitution refers to care for this special group, and based on that, a national plan for the prevention of disabilities and for the care and rehabilitation of the disabled was drawn up, with emphasis on community care. However, despite being the pioneer in the community-based rehabilitation model, Venezuela has not managed to consolidate it in the comprehensive health care system.

Indigenous Groups

According to the most recent census of the indigenous population (1992), there were 371,815 inhabitants (1.5% of the total population) belonging to 38 ethnic groups, including the Wayuu (53.4%), Warao (7.6%), Pemon (6%), Añú (5.5%), Yanomami (4.7%), Guajibo (3.6%), and Piaroa (3.6%). These ethnic groups make up 84.4% of the indigenous population; they are concentrated in the states of Zulia (62.4%), Amazonas (14%), Bolívar (11%), and Delta Amacuro (6.6%). The indigenous peoples live in conditions of vulnerability, social exclusion, and extreme poverty; the Government has not regulated their system of property ownership and they receive few social services. In 1992, more than 50% of these communities lacked potable water and excreta disposal services; 65% lacked access to schools; and 72.8% of the rural outpatient services in the indigenous villages had no doctor. More current information is not available, except that these communities are served by medical auxiliaries in basic medicine and visited periodically by physicians. Their leading conditions, according to partial data from research on certain ethnic groups, are tuberculosis, malaria, parasitosis, malnutrition, and diarrheal and respiratory disorders. Limitations in geographic, cultural, and economic access exacerbate the problems these diseases pose. The National Assembly has three seats reserved for aboriginal representatives and there is a standing committee on indigenous affairs.

By Type of Health Problem

Natural Disasters

The disasters with the greatest impact (earthquakes, floods, mudslides) have occurred mainly in the northern coastal region, which is the most densely populated. There have also been technological disasters of chemical origin, mainly in the petroleum and petrochemical sector. In 1999, torrential rain and mudslides caused a national tragedy that revealed the inadequacies of the country's urban planning and the limitations of its institutional response capacity. Approximately 17% of the Venezuelan territory is made up of what is known as the system of areas under a special management regime (ABRAE), which safeguards the environment. The Criminal Environmental Law and a series of environmental standards and regulations are in the process of being updated.

Vector-borne Diseases

The malaria transmission zone covers 23% of the country's surface area. It is less than 600 m above sea level and inhabited by