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# CUBA

## GENERAL SITUATION AND TRENDS

### Socioeconomic, Political, and Demographic Overview

The situation in Cuba since 1989 has been characterized, above all, by a profound economic crisis, which has affected virtually all spheres of national life. The severity of the crisis is evidenced by the fact that between 1989 and 1993 the country's gross domestic product (GDP) fell 35% and exports declined by 75%. The two determining factors underlying the crisis are well known. One is the dissolution of the Soviet Union and the socialist bloc, with which Cuba had maintained 85% of its foreign trade prior to 1989, and the other is the economic embargo the Government of the United States of America imposed on Cuba more than 30 years ago, which was strengthened in 1996 with the approval of the Helms-Burton Act, aimed at blocking foreign investment in Cuba and severely curbing foreign trade.

In the face of this new situation, the Cuban Government has introduced a series of adjustments and restructuring measures aimed at halting the decline and reviving the economy. The Cuban process seeks to achieve sustainability and efficiency without undoing the social gains of the Revolution, to preserve to the greatest extent possible the levels of equity that have been attained, and to prevent loss of employment and livelihood for the population.

The measures implemented include promoting international economic collaboration and foreign investment in Cuba; creating agricultural and industrial free markets that operate on the basis of supply and demand; expanding private enterprise or self-employment; developing new land and cattle cooperatives; introducing a broad-based tax system that taxes state and private activity; progressively reducing subsidies to state-run enterprises; strengthening the system of rationed distribution of goods at subsidized prices, with an emphasis on the most vulnerable groups;

downsizing and decentralizing the central government; and reforming and modernizing financial, banking, and business systems.

In addition to the increase in production and export capacity in traditional items such as sugar, nickel, fish, cement, and tobacco, an effort has been made to develop new sectors with tremendous potential for generating foreign currency revenues, such as tourism, mining, biotechnology, and the pharmaceutical, electronic, and sugar industries.

In 1994, the downward trend of the economy reversed and modest growth in the GDP (0.7%) was reported. In 1995 the GDP increased by 2.5%, and in 1996 it grew significantly by 7.8%. That same year, per capita GDP went up 7.5%, and the minimum wage, the earnings of the population, and the distribution of income all improved. In addition to other positive indicators, it should be noted that the budget deficit fell to 2.4% of the GDP (compared with 33% in 1992 and 3.6% in 1995), total exports grew 33%, labor productivity increased 8.5%, investment went up 54%, personal consumption rose 4%, and collective and government consumption increased 4% and 2%, respectively. The value of the peso, which averaged 60 pesos per United States dollar in 1994 and 32.1 pesos in 1995, dropped to 19.2 pesos per dollar in 1996, which points to a gradual revaluation of the currency. Although the negative trend seems to have reversed and the economy appears to be growing, the country still faces difficulties as a result of unfavorable foreign borrowing terms, especially high short-term interest rates.

On the political front, noteworthy developments include efforts to extend the decentralization of the government (including decentralization of the National Health System) and the economic sectors; to promote and develop popular participation in decision-making processes at all levels through development of grassroots entities within the political structure—the popular councils and municipal governments; and to strengthen the Parliament and its commissions, including

health, sports, and the environment commissions, as the legislative organ of the State.

For an 8-month period beginning in June 1997, the country was immersed in a process of general elections in which the population voted, freely and by secret ballot, for the delegates to the municipal and provincial assemblies and for representatives to the National People's Assembly.

As of 30 June 1996, the estimated population was 11,005,866, and the population density was 99.3 inhabitants per km<sup>2</sup>. The birth rate has declined steadily, reaching a low of 12.7 in 1996, with a reduction of about 30% for the decade. Fertility rates have also decreased. The general fertility rate dropped from 66.1 per 1,000 women aged 15–49 years in 1985 to 46.7 in 1996. At the same time, the group aged 60 and over continued to increase in absolute terms as well as proportionally and in 1996 made up 12.7% of the population. In 1992, persons under 15 years of age made up 22.4% of the population and in 1996, 22.0%. The general mortality rate was 7.0 per 1,000 inhabitants in 1992 (the highest rate during the period 1986–1992) and it reached 7.2 in 1996. Projected life expectancy at birth for the five-year period 1995–2000 is 75.48 for both sexes, 73.56 for males, and 77.51 for females.

Whereas infectious and parasitic diseases were the main causes of death 30 years ago, today the vast majority of deaths are due to chronic and degenerative diseases and accidents. The leading causes of death for all ages are heart disease, malignant neoplasms, cerebrovascular disease, and accidents. These four causes are responsible for 65% of all deaths.

From the political-administrative standpoint, the country is divided into 14 provinces and 1 municipality with special status (Isla de la Juventud). These areas have populations ranging from 0.5 to 1 million—except the city of Havana, which has slightly more than 2 million inhabitants, and Isla de la Juventud, which has 77,429 inhabitants. The urban population has increased from 69.0% in 1981 to 74.5% in 1995, according to intercensus estimates of the National Statistics Bureau of Cuba. The population under 15 in rural areas is proportionally larger than in urban areas (24.3% and 21.5%, respectively). The reverse is true of the populations aged 15–59 years (64.2% and 65.4%, respectively) and 60 and over (11.5% and 13.2%, respectively).

### Mortality Profile

Analysis of the mortality profile according to six major groups of causes and by urban and rural populations in 1996 reveals that adjusted mortality rates in urban, rural-urban, and rural areas were 649.1, 617.4, and 490.6 per 100,000 inhabitants, respectively, with a mortality ratio of 1.3 between the highest and lowest rates. In general, this pattern holds for

all groups of causes, with the exception of conditions that originate in the perinatal period and violence, both of which account for more deaths in rural-urban areas. Provisional data from 1996 indicate that the mortality rates per 100,000 inhabitants associated with five major groups of causes are as follows: diseases of the circulatory system, 311.4; malignant neoplasms, 141.0; external causes, 79.3; infectious and parasitic diseases, 51.4; and all other causes, 136.4.

For a number of years, general mortality has been characterized by a marked predominance of causes associated with chronic noncommunicable diseases. Mortality from diabetes, for example, has risen steadily, increasing from 9.9 per 100,000 in 1970 to 11.1 in 1980 and 23.4 in 1996, with a larger proportion of deaths occurring among women.

## SPECIFIC HEALTH PROBLEMS

### Analysis by Population Group

#### *Health of Children*

Perinatal mortality has decreased significantly, from 14.2 per 1,000 live births in 1992 to 12.4 in 1996, a 13% decrease for the period. Hypoxia, asphyxia, and other respiratory disorders continue to rank among the leading causes of mortality of the neonatal component.

Low birthweight, after declining steadily until 1989, when the rate was 7.3%, began to climb again, reaching 9.0% in 1993. The national program for the prevention and control of low birthweight was subsequently revised and updated, and by 1996 the level had dropped back to 7.3%. The pattern has been similar in all the provinces of the country.

Infant mortality in 1992 represented 2.1% of total mortality in all age groups; in 1996, this proportion dropped to 1.4%. The five leading causes of death in children less than 1 year old accounted for 83% of all infant deaths in 1996. Most deaths were due to conditions originating in the perinatal period, with a rate of 3.2 per 1,000 live births, followed by congenital abnormalities, with a rate of 2.1, and sepsis, influenza and pneumonia, and accidents with rates of 0.5, 0.3, and 0.3, respectively. Mortality from the latter three causes has decreased markedly.

Infant mortality continues to fall: from a rate of 10.2 per 1,000 live births in 1992, it decreased to 7.9 in 1996. In that year, the rates ranged from 9.7 to 6.0 in the western provinces and from 9.2 to 7.6 in the eastern provinces. Of the five central-eastern provinces (Villa Clara, Cienfuegos, Sancti Spiritus, Ciego de Ávila, and Camagüey) Camagüey and Villa Clara had the lowest rates (5.4 and 5.9, respectively). The highest and lowest provincial rates reported in 1990 were 13.6 and 7.6

per 1,000 live births, and in 1996 they were 10.3 and 5.1, which confirms the downward trend of these rates across the country.

Mortality from all causes in the group aged 1–4 years remained stable at 0.6 to 0.7 per 1,000 people in this age group during the last five-year period. The five leading causes of death in this age group are, first, accidents, with a rate of 1.9 per 10,000 inhabitants in 1996; second and third are malignant neoplasms and congenital abnormalities, with rates of 0.6 and 0.8, respectively. Pneumonia, which ranked second as a cause of death among preschool children in the early 1980s, was the fourth leading cause in 1996. Meningitis ranked fifth, with a rate of 0.2 per 10,000.

The crude death rate for all causes in the group aged 5–14 years, which has the lowest mortality in the country, remained at 0.4 per 1,000 children in this age group in 1987, and it dropped to 0.3 in 1996. Accidents were the leading cause of death with rates of 14.7 per 100,000 in 1992, 17.0 in 1994, and 14.8 in 1996. In the latter year, accidents caused 14.8 deaths per 100,000 children aged 5–14 (242 deaths), which was approximately 44.8% of all deaths in this age group and more than double (60%) the number of deaths due to the next four causes: malignant tumors, 4.9 (80 deaths); congenital abnormalities, 2.8 (45 deaths); influenza and pneumonia, 1.0 (16 deaths); and heart disease, 0.9 (15 deaths). Accidents were the leading cause of death in the 5–14 age group, accounting for 38.8% of all deaths in this group, more than in 1992, when the number was 34.5%. Within this group of causes, traffic accidents accounted for 73.4 years of potential life lost (YPLL) per 100,000 people in the group aged 1–4 and 36.7 per 100,000 in the group aged 5–14 years; a greater proportion of males were affected in both age groups.

### *Health of Adolescents and Adults*

Accidents remain the leading cause of death for individuals up to 49 years of age, with a rate of 38.9 per 100,000 in the group aged 15–49 years in 1996, slightly higher than the value of 37.9 reported in 1992, and they are one of the principal health problems of adolescents and young adults. Other important problems in these two groups are the high incidence of sexually transmitted diseases (STDs) and the increase in viral hepatitis type A, the incidence of which increased from 161.2 per 100,000 in 1992 to 217.0 in 1996.

The crude death rate for all causes in the group aged 15–49 years was 1.7 per 1,000 in 1996. Accidents were the leading cause of death in 1996, and they accounted for 20.4% of all deaths in this age group. As in 1992, malignant neoplasms ranked second, with a rate of 28.8 deaths per 100,000 inhabitants. Heart disease ranked third (20.4 per 100,000); suicides

and self-inflicted injuries (18.2) and homicide (10.2) ranked fourth and fifth.

### *Health of Women*

The number of women employed in the public sector increased from 669,100 in 1975 to 1,429,900 in 1990, when 40% of all workers were women. Health care for women and children and the work of the Maternal and Child Health Program are considered top public health priorities.

The average number of prenatal medical visits per woman increased from 17.2 in 1992 to 23.6 in 1996. The average number of well-baby visits per child under 1 year of age increased from 13.4 in 1992 to 23.5 in 1996, which, combined with the visits due to illness, brings the average number of medical visits per infant to 35.0 in 1996.

The rate of induced abortion decreased from 70.0 per 100 deliveries in 1992 to 59.4 in 1996. The Family Planning Program is seeking to expand the variety of contraceptives available, increase their use, and enhance their quality. The prevalence of contraceptive use is estimated at 79%. Maternal deaths due to complications of pregnancy, childbirth, and the puerperium decreased from 3.3 per 10,000 live births in 1992 to 2.4 in 1996.

Mortality from all causes among women aged 50–64 was 8.4 per 1,000 women in 1996. The five leading causes of death were malignant neoplasms (236.8 per 100,000), heart disease (222.3), cerebrovascular disease (79.2), accidents (42.2), and diabetes mellitus (38.9).

### *Health of the Elderly*

In 1996, 84.7% of all deaths occurred among persons aged 50 and over. The over-60 age group accounted for 76.3% of all deaths, and the group aged 65 and over accounted for 68.9%. There has been a rising trend in the number of accidental falls among persons of both sexes aged 60 and over, and they are more frequent among women.

Mortality from all causes in the group aged 65 and over was 54.9 per 1,000 in 1996. The five leading causes of death were heart disease, with a rate of 1,803.9 per 100,000; malignant neoplasms (968.0); cerebrovascular disease (631.3); influenza and pneumonia (378.6); and diseases of the arteries, arterioles, and capillaries (330.2).

Morbidity from communicable diseases in older adults decreased in 1996 compared with the previous year, as did morbidity from acute diarrheal diseases, which fell 6%. On the other hand, medical consultations for acute respiratory infections increased to a rate of 28,212.7 per 100,000 inhabitants. The incidence of tuberculosis in 1996 was also lower than in

1995, although, proportionally, the rate is highest in this age group.

### *Workers' Health*

The country's socioeconomic situation influenced the activity of the workers. Initially, certain occupational risks decreased because of paralysis of the work force in some sectors, which led to a reduction in accidents, especially fatal accidents; however, other risks increased as a result of job changes, reintegration of workers into the work force, and redefinition of duties in factories and other workplaces. The reorientation of many activities toward agriculture and the increase in self-employment have created new challenges for the public health sector in terms of protecting the health of workers. There are two principal occupational disorders linked to urban and industrial environments—hearing loss from excess noise and skin diseases.

Occupational accidents have shown a downward trend. Between 1992 and 1995, the incidence declined from 8.2 to 5.3 per 1,000 workers. During 1995, there were 20,805 disabling injuries, 33,000 fewer than in 1992, and the number of fatal accidents decreased to 72. Of the deaths that occurred, 70% were males, and the largest proportion occurred in the 21–40 age group.

Health care for workers is provided through the National Health and Epidemiology Network by 2,217 general practitioners who work on-site in factories and other workplaces, which helps to strengthen primary health care for workers, with an approach that emphasizes prevention, health promotion, and risk assessment.

## **Analysis by Type of Disease or Health Impairment**

### *Communicable Diseases*

**Cholera and Other Intestinal Diseases.** The incidence of intestinal infectious diseases has increased in recent years due to the influence of environmental and health-sanitation conditions. Between 1989 and 1996, morbidity from hepatitis A increased from 24.5 to 189.0 per 100,000 inhabitants. In 1996, 90.9 medical visits per 1,000 inhabitants were reported for acute diarrheal disease. Morbidity from typhoid fever increased during the period 1989–1996, rising from 0.5 to 0.7 per 100,000 inhabitants at the national level. Mortality from acute diarrheal diseases, some of which are of infectious origin, increased from 4.2 per 100,000 in 1992 to 5.0 in 1996, accounting for 0.7% of all deaths that year.

Implementing the measures needed to control this situation has been made a priority within the health system. In re-

sponse to the ongoing threat of a cholera outbreak, vigorous efforts are under way to strengthen the surveillance system, put in place mechanisms to halt the spread of the disease should any cases occur, and prevent the creation of conditions that would be favorable for an epidemic. To date, however, no cases of cholera have been reported in the country.

**Vaccine-Preventable Diseases.** Five cases of tetanus were reported in 1992 and four were reported in 1996. The effectiveness of the Cuban immunization system is reflected in the elimination of three diseases (poliomyelitis, diphtheria, and measles) as well as in the suppression of two serious diseases (tuberculous meningitis and neonatal tetanus) and the disappearance of two serious complications (mumps meningitis and congenital rubella syndrome). Fifteen cases of measles were reported in 1992, but none has been reported since 1994. No cases of rubella or mumps were reported in 1996. The level of immunization coverage for all vaccine-preventable diseases is satisfactory: more than 95% at the national level. By the year 2000, the country intends to immunize the entire population under 20 years of age against hepatitis B.

**Acute Respiratory Infections.** Respiratory infections, especially acute, short-lived infections, are by far the leading causes of morbidity in Cuba. Although they are relatively benign and seldom fatal, the high incidence of these diseases nevertheless leads to increased absenteeism from work and school and more visits to the doctor. About 60% of these visits are for children under the age of 15, and 41.7% of these are children between 1 and 4 years of age. In 1996, the total number of medical visits for this cause totaled approximately 5 million. In the past three years, the number of affected infants and preschoolers has increased, as has the number of affected persons over the age of 60.

**Tuberculosis.** Tuberculosis was the leading cause of death in the country early in this century. In 1961, it was still among the 10 leading causes of death. During the 1980s, mortality and morbidity from this disease declined throughout the country, and by 1990 the incidence had fallen to 5.1 per 100,000 inhabitants. However, in recent years the number of cases has risen to 12.0, 14.2, and 13.3 per 100,000 in 1994, 1995, and 1996, respectively. The largest concentration of cases is found in the group aged 65 and over and the pulmonary form of the disease is most common, with a total rate for this age group of 38.9 per 100,000 in 1996—35.0 for the pulmonary form and 3.9 for extrapulmonary tuberculosis. In 1994 the activities of the Tuberculosis Prevention and Control Program were stepped up, and at present improvements in detection and diagnosis of the disease are being noted in the majority of the provinces, which have reported a slight decrease in incidence.

**Leprosy.** The prevalence of leprosy has declined steadily since 1989, and by 1993 it had fallen to a level of less than 1 per 10,000 inhabitants. During 1994, the prevalence was 0.7 and in 1995 it dropped to 0.62 per 10,000 inhabitants. In 1996, the rate was 0.57, and the ratio of new cases detected to those who have completed treatment appeared to have stabilized. However, in late 1996 four provinces, three of them in the eastern region of the country, reported rates higher than 1 per 10,000 inhabitants. The indicators for measuring the level of transmission point to a slow decline. Given current rates, the disease is no longer considered a public health problem.

**Vector-Borne Diseases.** No indigenous cases of malaria were reported in the period 1992–1996. With regard to dengue, no indigenous transmission occurred between October 1981 and December 1996. Since January 1997, dengue cases have been reported in the country's easternmost region, in the municipality of Santiago de Cuba. A total of 2,946 cases were confirmed by serological tests; of these 205 were hemorrhagic dengue. Among children, morbidity was very low and only one case of hemorrhagic dengue was reported. Twelve deaths occurred, all in adults. Serotype 2, genotype Jamaica, was identified as the infectious agent in the outbreak. Transmission occurred with infestation indices of less than 2%.

**Rabies and Other Zoonoses.** The incidence of leptospirosis, which has shown a rising trend since 1986, peaked in 1994 (25.8 per 100,000 inhabitants), an epidemic year, after which the incidence declined markedly as a result of the application of prevention and control measures throughout the country. The actions undertaken, which were aimed, above all, at protecting the groups at highest risk, included vaccination and chemoprophylaxis, environmental sanitation, and improving the quality of diagnosis as well as efforts to eliminate the rodent vectors. By 1996 the incidence had been reduced to 12.9 per 100,000 inhabitants. The prevention and control activities are ongoing.

After a 10-year period during which no human cases of rabies were reported, the disease reappeared in 1988. Between that year and 1995, six fatal cases of rabies occurred in humans. No cases were reported in 1996. Of the reported cases, five were transmitted by nonhematophagous bats and one by a feral cat. There were no significant outbreaks of canine rabies during that period. In 1996, 30,202 reports were received of humans being bitten by animals; most cases involved dog bites.

**Pediculosis and Scabies.** Since mid-1994 an unusual increase in medical visits for pediculosis and scabies has been observed. The situation grew worse in 1995, prompting the development of an emergency action plan, which was implemented in 1996. The basic strategy was aimed at ensuring rapid diagnosis and appropriate treatment, control of foci,

active case-finding, ongoing education and involvement of the community, and availability of medications. Various institutions and agencies took part in these activities, but the joint efforts of the Ministry of Education and the Ministry of Public Health were crucial. As a result of these efforts, despite a better system of diagnosis and active case-finding, outbreaks of pediculosis and scabies fell 23% and medical visits for these causes decreased 5%. The reduction was even greater in schools, where most cases occurred.

**AIDS and Other STDs.** Between 1986, when the seroepidemiological detection program was launched, and the end of 1996, 1,468 HIV-positive individuals were detected; of these, 534 developed AIDS and 381 died. More males than females are infected, and most of the infected males (65%) are homosexual/bisexual. The incidence is highest in the group aged 15–19 years, followed by the 20–24 age group. The majority of HIV-infected individuals acquired the infection in Cuba; only slightly more than 15% became infected abroad. Active case-finding reveals that most new cases are detected in contacts of HIV-positive individuals (33.7%), in persons with STDs (15%), and in prisoners (14.1%). The Cuban strategy for addressing this problem includes conducting studies of the groups at highest risk, carrying out epidemiological investigation of 100% of cases, performing analyses of hospital admission records (as well as outpatient care records since 1993), and implementing a comprehensive program of health education for the general population.

Reports of sexually transmitted diseases are on the increase especially in the case of syphilis and gonorrhea, the rates for which in 1996 were 143.7 and 368.7, respectively, per 100,000 inhabitants. Work is currently under way to upgrade the prevention and control program, improve diagnosis and case reporting, and carry out educational activities and promote safe sexual behaviors.

**Infectious Neurological Syndromes.** The incidence of meningococcal disease has continued to decline since the initiation of vaccination in the country in 1986. The rate in 1989 was 3.8 per 100,000 inhabitants, but by 1996 it had dropped to 0.5 per 100,000. Other bacterial meningoencephalitides are associated with endemic levels of morbidity. As for viral meningoencephalitides, an epidemic increase began in 1995 and extended into the first months of 1996. Three types of enterovirus were identified in the samples studied: Coxsackie A9, Echo 30, and Coxsackie B5.

#### *Noncommunicable Diseases and Other Health-Related Problems*

In the past 20 years, the relative importance of noncommunicable diseases and injuries due to violence has increased

and these two groups of causes now account for the largest proportion of deaths in all age groups. Three causes account for the largest proportion of years of potential life lost (YPLL) in the groups between 1 and 64 years of age: accidents, malignant neoplasms, and heart disease, with rates of 10.3, 7.3, and 5.5, respectively, per 1,000 inhabitants.

**Cardiovascular Diseases.** Cardiovascular diseases are the leading cause of death in Cuba, with a crude death rate of 205.9 per 100,000 inhabitants in 1996. Although this number is higher than in 1989 (189.3 per 100,000 inhabitants), the trend, based on age-adjusted rates, is downward. Within this group, the primary cause is acute myocardial infarction, with a rate of 112.7 (more than 50% of all deaths from cardiovascular disease). Males are at greatest risk of dying from heart disease; in 1996 the rate among males was 222.2 per 100,000 inhabitants, compared with 189.4 for females. When mortality from the six major groups of causes is calculated, these diseases are included in the group of circulatory system diseases, which account for the highest mortality in the groups aged 65 and over and 40–64, with rates of 2,776.6 and 205.5, respectively, per 100,000.

A small degree of excess male mortality from this cause is observed, particularly in the case of acute ischemic heart disease; the risk of dying from acute myocardial infarction is greater among males than females (male/female ratio: 1.3). The largest number of deaths occurs among persons over the age of 65, who account for 85% of all deaths from this cause.

Cerebrovascular disease has been the third leading cause of death for several years. In 1996, the crude death rate from this cause was 72.7 per 100,000 inhabitants, higher than in 1989 (64.3 per 100,000). Nevertheless, standardized rates indicate a downward trend. In 1989, the number of male deaths exceeded the number of female deaths according to mortality rates for both sexes, but in 1996 the male/female ratio was 0.9. Most of these deaths (79.5%) occur in the over-65 age group.

According to data from the World Health Organization (WHO), mean blood pressure in the Cuban population, compared with other countries, is in the medium-low range. Maintenance or reduction of these levels could have a beneficial effect on the population in the medium and long terms by reducing the frequency of cardiovascular and other diseases. The prevalence of high blood pressure (30.6%) is high but similar to that of other countries; one in three Cubans aged 15 or over suffers from hypertension. A national survey of risk factors in 1995 detected 12% new hypertensives. Of all the hypertensive patients interviewed, only 45.2% were being monitored regularly.

**Malignant Tumors.** For the past 26 years, malignant neoplasms have been the second leading cause of death in all age groups. The crude death rate from this cause increased from 128.8 per 100,000 inhabitants in 1990 to 137.3 per

100,000 in 1996; however, the adjusted rates for the same years went down from 116.6 to 111.0 per 100,000 inhabitants. The number of deaths from malignant tumors varies according to sex; the rates per 100,000 are 156.1 for males and 118.3 for females. The highest rates occur in the groups aged 50–64 and 65 and over. Mortality rates adjusted for place of residence show higher rates in urban areas (121.5 per 100,000 inhabitants) than in rural-urban areas (117.3) or rural areas (94.5). YPLL per 1,000 people aged 1–64 years ranged from 6.7 to 7.6 between 1980 and 1996.

The incidence of all forms of cancer, including both crude and adjusted rates, decreased during the three-year period between 1992 and 1994. The adjusted rate fell from 176.8 per 100,000 inhabitants in 1992 to 159.2 in 1994. The incidence by sex declined more markedly in females (from 164.7 per 100,000 in 1992 to 142.2 in 1994) than in males (from 189.8 to 177.9 per 100,000 during the same period).

For the period 1985–1993, the five most frequent cancer sites were the lung, prostate, skin, bladder, and colon for males and the breast, skin, cervix, lung, and colon for females. Comparatively, during the three-year periods 1988–1990 and 1991–1993, there was an increase only in adjusted rates of colon cancer among men (9.3 to 9.9 per 100,000 inhabitants) and breast cancer among women (29.8 to 31.7 per 100,000 inhabitants). The rates fell for the other sites.

In 1996, as part of the Early Cervical Cancer Treatment Program, 1,023,913 women aged 20 and over were screened, yielding a screening rate of 26.0%. Of the positive cases, 88% were detected at stage 0 and 11% were detected at stage 1. The mortality rate increased from 6.2 per 100,000 in 1995 to 6.8 per 100,000 in 1996. The incidence during the period 1991–1993 was 4.9 per 100,000 inhabitants, similar to the previous three-year period. The program has not produced the expected results.

The preventive activities assessed in the national risk factor survey of 1995 (Pap smear, breast examination and self-examination, among others) reflect a moderate level of performance. Among the women over the age of 30 surveyed, 26.6% had performed a breast self-examination in the preceding 12 months, and 53.5% had performed a self-examination on at least one occasion.

**Chronic Obstructive Pulmonary Disease and Bronchial Asthma.** These disorders are among the leading causes of death in all age groups. They occur in both sexes similarly and are most frequent among persons over the age of 55. In 1995 the crude death rate from these causes for both sexes was 22.4 per 100,000 inhabitants, higher than in 1989 (16.7). Mortality from bronchial asthma has shown a rising trend. In 1996 the crude death rate from asthma was 5.3 per 100,000 inhabitants, higher than the rate of 4.4 registered in 1989 and similar to the rate of 5.5 recorded in 1995. More females than males die from asthma, and this excess female

mortality has become more marked in the past three years. In 1996 the death rate among males was 4.4 per 100,000, and among females it was 6.1. According to specialists, this pattern is linked to women's greater exposure to harmful environmental factors (domestic fuels), which exacerbates asthma attacks, coupled with difficulties in the provision of medical care and outpatient monitoring for asthmatic patients. A plan aimed at reversing this trend is currently being implemented as part of the new program for the treatment and control of asthma.

**Accidents.** Accidents remain the fourth leading cause of death for all ages and the leading cause in the group aged 1–49 years as well as the primary cause of premature death as measured by YPLL (10.0 per 100,000 people aged 1–64 years). Mortality from accidents has shown a slight rising trend, based on adjusted rates. The largest proportion of accidental deaths are due to motor vehicle traffic accidents, with a rate of 19.7 per 10,000 inhabitants in 1996. Within this group, deaths of cyclists increased steadily between 1990 and 1995. There is a marked sex differentiation. Accidents are far more common among males, in particular those aged 40 and over. Among females, mortality from this cause is much lower, and the age groups most affected are those between 20 and 29 years old, with a rate of 9.1, and 70 and over, with a rate of 13.2. Falls are the most frequent cause of accidental death among females, with rates of 17.9 per 100,000 women in 1992 and 19.9 in 1996, much higher than the female rate of death from traffic accidents (8.0).

**Diabetes Mellitus.** Diabetes mellitus was the seventh leading cause of death for all ages in 1996, with a rate of 23.4 per 100,000 inhabitants. It causes more deaths among females than males (31.4 per 100,000 inhabitants in 1996 compared with 15.5 per 100,000 for males). There are also differences among urban and rural populations, with adjusted rates of 22.2 and 13.4, respectively, per 100,000 inhabitants. Based on the records of family physicians, it is estimated that the prevalence of the disease in 1996 was 19.3 per 1,000 inhabitants.

**Suicide.** Deaths from suicide and self-inflicted injuries decreased from 21.1 per 100,000 inhabitants in 1992 to 18.2 in 1996. During the period 1981–1996, suicide was greater among males in all but one age group; in the group aged 10–19, the rate was greater among females.

**Epidemic Neuropathy.** An outbreak of epidemic neuropathy has been ongoing since 1992. The epidemic began in the western region and spread to the rest of the country in early 1993. From 1994 to 1996 the disease showed an endemic pattern, and by the end of 1996 a cumulative total of 54,640 cases

had been reported, yielding a case rate of 496.5 per 100,000 inhabitants. Of the reported cases, 41.3% were the optic form of the disease. The epidemiological pattern by age, sex, and severity of the various clinical forms has not varied. The clinical optic form is most frequent among males in the group aged 45–64 years, and the peripheral form predominates in females aged 25–44. In a follow-up analysis of all cases reported since 1992, 47,994 patients were evaluated (88.4% of the total) and 39,754 were given a clinical discharge (82.8%); 8,729 were found to have sequelae (18.8% of all patients evaluated). The patients with sequelae to the peripheral form have been included in the Community Rehabilitation Program, and those with sequelae to the optic form (impaired vision) are receiving rehabilitation services in three specially equipped centers located in the cities of Santiago de Cuba, Pinar del Río, and Havana. Doctors continue to treat the disease with A, E, and B-complex vitamins, and a national campaign is under way to promote two vitamin supplements.

**Oral Health.** In 1996 there were more than 17 million visits to the dentist in Cuba, which makes the rate 1.6 visits per person. Of these visits, more than 85% were for general dentistry services provided in the framework of primary health care. During the year, 3,361,122 persons were examined; 51.7% of them were under the age of 15 years. Of all those examined, 28.4% were found to have good oral health. Of those under 15 years of age, 31.8% had good oral health. The preventive program continues to be carried out at the national level, and during the year 24,103,414 fluoride rinse treatments were administered to children aged 5–14 years and 1,324,971 topical fluoride treatments were given to children under the age of 4 years. Oral cancer was detected in 1,922 of the patients examined.

According to the findings of the National Oral Health Survey carried out in 1995, 43.6% of children aged 5 and 6 years old are free of dental caries, while the DMFT (decayed, missing, filled teeth) index for 12-year-old children is 1.86 times higher than the target proposed for the year 2000.

**Natural Disasters.** The most recent natural disaster was Hurricane Lili, which struck Cuba on 17 October 1996 and caused severe economic damage to housing and agriculture. Nevertheless, thanks to the population's preparedness and the preventive evacuation of some 200,000 people, no human lives were lost. To enhance the country's capacity for disaster management, a disaster medicine center was established in June 1996.

**Behavioral Disorders.** In 1995, the National Institute of Hygiene, Epidemiology, and Microbiology, in collaboration with the National Statistics Bureau, conducted the first national survey of risk factors and preventive activities for non-

communicable diseases. This was a representative survey of households in each province of the country and the special municipality of Isla de la Juventud. The study population consisted of urban dwellers (75% of the Cuban population) over the age of 15.

Systematic efforts to prevent and control tobacco use, which have been under way since 1985, have succeeded in halting the rising trend of tobacco use and reducing its prevalence. During the five-year period 1990–1995, tobacco use decreased. The current prevalence of tobacco use is 36%. The percentage of males aged 15 and over who smoke regularly is 48.1%, and that of females is 26.3%.

Frequency of consumption and quantity consumed were the criteria used to evaluate consumption of alcoholic beverages. The results can be considered acceptable in terms of the population as a whole, given that 55% of those surveyed reported not having consumed any alcoholic beverage in the preceding 12 months or having done so fewer than five times. Men aged 20–29 and 40–59 are the groups at highest risk.

**Nutritional Diseases.** The nutritional situation, evaluated on the basis of body mass index, compared favorably with that in 1982 and is related to apparent levels of consumption per capita in the period 1992–1995, according to data from the National Statistics Bureau. However, a larger proportion of people with chronic energy deficiency and underweight was noted in those aged 20–59 years and, to an even greater extent, in those over the age of 60, although the levels vary from region to region within the country. Overweight and obesity are more frequent among women and tend to increase with age.

The nutritional status of children aged under 1 and 1–4 years, based on the weight-for-height indicator, has remained stable and is similar to that found in previous years. In 1996, 1.8% of children under the age of 1 year were below the third percentile. In the group aged 1–4, the proportion was 0.8%. Since 1996 the country has established sentinel sites where height-for-age is assessed, because it is considered necessary to measure the effect of the nutritional situation on the linear growth of these age groups.

Iron deficiency anemia is the most common nutritional problem in Cuba. It affects more than 40% of women in the third trimester of pregnancy, around 50% of infants between 6 and 11 months of age, between 40% and 50% of children aged 1–3 years, and between 25% and 30% of women of childbearing age. A project to enrich flour with iron is being developed.

In 1995, the National Food and Nutrition Institute (INHA) conducted a national study of iodine intake levels. Analysis of iodine excretion in the urine of schoolchildren revealed mild to moderate deficiencies in the areas studied, especially in mountainous areas. In accordance with the criteria of the In-

ternational Council for Control of Iodine Deficiency Disorders, the United Nations Children's Fund (UNICEF), and WHO on iodine deficiency, the populations in the regions identified exhibited manifestations of deficiencies of this micronutrient. For this reason, to ensure adequate levels of iodine intake, the Ministry of Industry, in coordination with the INHA, other institutions of the Ministry of Public Health, and other State agencies, has begun to produce iodized salt.

Vitamin A intake, as measured by analysis of data on apparent consumption and nutritional surveillance, is also low. There are no national studies on serum levels of this nutrient, but work is under way to enrich foods with vitamin A as a preventive measure. Intake of vitamin B continues to fall below recommended levels.

## RESPONSE OF THE HEALTH SYSTEM

### National Health Plans and Policies

In 1991, the Ministry of Public Health drafted a document entitled *Objetivos, propósitos y directrices para incrementar la salud de la población cubana 1992–2000* ["Objectives, Aims, and Guidelines for Improving the Health of the Cuban Population 1992–2000"], which defines health goals and objectives to be achieved by the year 2000. In 1996 five strategies and four priority programs were identified. The strategies include reorientation of the health system toward primary care and the family doctor and nurse program, which is considered the pillar of the system; revitalization of hospital care; revitalization of high-technology programs and research institutions; development of a program on natural and traditional medicine and remedies; and care with an emphasis on system objectives, such as dentistry, optical services, and health transport. The priority programs are those on maternal and child health, chronic noncommunicable diseases, communicable diseases, and care of the elderly.

As a fundamental part of the changes of the revolutionary period, since the 1960s the Government has introduced several important reforms in the health system. Reform of the health sector in Cuba can be said to be more an ongoing process than a temporary or finite phenomenon. Nevertheless, a number of factors in the current context justify a fresh approach to health reform, including the effects of the economic crisis of recent years on the health situation and on health services, changes in the national context and the transformation that has been under way in the country since 1989, the process of State reform, and the contradictions inherent in the health system.

The Ministry of Public Health has developed a strategy for responding to existing, emerging, and reemerging problems. The strategy seeks to increase the efficiency and quality of

health services; to ensure the sustainability of the system, especially in financial terms; and, although a high level of health equity has been achieved, to work to eliminate the small reducible inequalities in health care and in the use of health services in different regions and population groups. The strategy emphasizes promotion of health and prevention of disease in the framework of strengthening primary health care and family medicine, decentralization, intersectoral action, and community participation, as well as improvement of services at the secondary and tertiary levels.

The process of decentralization and the creation of a new structure of government that allows for more grassroots involvement (through the popular councils) has encouraged active participation of the social sectors in health management at the local level. In 1995, as an outcome of the integrative policy for the development of the National Health System, health councils were established at the national, provincial, municipal, and popular council levels. These health councils are made up of representatives of the various social sectors and civic organizations and are headed by a government representative at each level. They have facilitated intersectoral collaboration and have increased the capacity for social participation in the identification and solution of health problems in the community. The country, as part of the "health initiative" process aimed at mobilizing national and international resources to support reform and modernization of the sector, has developed a master investment plan that sets out the basic problems, outlines strategies and actions for addressing those problems, and recommends a series of investment projects for resolving or mitigating them.

Currently, a revamping of the National Health System is being considered with a view to making more efficient use of resources and investments. Among other changes, it has been proposed that the number of hospital beds and teaching institutions be reduced and that some products made by the pharmaceutical industry be eliminated.

## Organization of the Health Sector

### *Institutional Organization*

In Cuba the State assumes full responsibility for the health care of its citizens. Health is considered the key ingredient for quality of life and is seen as a strategic objective in the development of society.

In 1983 the Parliament adopted the Public Health Law, which lays out the general activities to be carried out by the State to protect the health of Cuban citizens. The law establishes the organization of the sector and the services to be provided by the State, with the Ministry of Public Health as

the lead agency, and it specifies the functions of health authorities at the provincial level. It also regulates the delivery of health care and contains provisions relating to the social nature of the practice of medicine, application of a preventive approach in the provision of services, appropriate use of science and technology, priority attention to maternal and child health care, outpatient and inpatient hospital care, transplants of organs and tissue, control of epidemics, government health inspections, health and epidemiological prophylaxis, and health education. The Public Health Law is complemented by other legislation, including environmental laws, basic sanitation regulations, a decree-law on international health regulations, and law and regulations on occupational health and protection of workers.

Despite the development attained by the sector in recent years, the Public Health Law needs to adapt to new factors and determinants, which have modified the public health environment, both internally and externally. Among these factors is the new health strategy, which is oriented toward primary care and is embodied in the family doctor and nurse program, development of new programs for the incorporation of high technology in the sector, and the need to adjust the National Health System to the economic changes taking place in the country without compromising its basic principles.

Because this goes beyond the scope of the Public Health Law, it has been determined that a new judicial framework should be adopted to allow for greater intersectoral action and community participation. Since 1995, the Health Commission of the Cuban Parliament, in conjunction with the Ministry of Public Health, has been in the process of revising the existing legislation.

**Organization of the National Health System.** The National Health System is organized at three levels (national, provincial, and municipal), which mirror the country's administrative structure. The National Assembly (Parliament) and the provincial and municipal assemblies have permanent working commissions. In addition, the National Health Commission also deals with issues relating to sports and the environment and advises the leadership of the National Assembly and Council of State in these areas. Local organs of government in the provinces and municipalities have a commission that is responsible for health-related issues at that level. In the Cuban Parliament, the Commission on Health, Sports, and the Environment is the highest-level regulatory body charged with oversight of the various government institutions responsible for these areas.

The national level is represented by the Ministry of Public Health, which serves as the lead agency and fulfills methodological, regulatory, coordination, and control functions. Directly under the Ministry are university centers, highly specialized medical research and care institutions, the Union of

the Medical-Pharmaceutical Industry and its laboratories, and firms that market and distribute medical equipment, as well as one firm that imports and exports drugs and high-technology medical equipment.

The provincial level is represented by the provincial public health offices, which are under the direct financial and administrative authority of the provincial administrative councils. The principal units under the responsibility of the provincial governments are the provincial and intermunicipal hospitals, blood banks, provincial health and epidemiology centers, training centers for health professionals and mid-level health technicians, and the network of commercial pharmacies and optical shops.

At the municipal level are the municipal public health offices, which come under the financial and administrative responsibility of the municipal administrative councils. The units overseen include polyclinics; rural, local, and municipal hospitals; municipal health and epidemiology units and centers; oral health clinics; social welfare institutions for the elderly and persons with mental or physical disabilities; maternity homes; and other establishments. The nuclei of municipal activity are the popular councils, a set of small communities that form an organ for coordination with certain executive authorities, thus giving concrete expression to the concepts of administrative decentralization and public participation in decision-making and in the government of the nation. The councils work in close coordination with the municipal health system.

#### *Organization of Health Regulatory Activities*

Since 1993, the country has been working to develop an integrated surveillance system. Health trend analysis units have been created from the national to the municipal level. The function of these units is to integrate all monitoring and surveillance information in the context of each program, department, service, or strategy of the health system. At the same time, they conduct rapid assessments and epidemiological investigations in relation to the principal health problems, undertake a quarterly analysis of the health situation at each level, and follow trends and make forecasts for the short and medium terms. During the past year, an evaluation component has been added.

The Regulatory Bureau for Health Protection, created in 1996, is the highest official health regulatory institution in the country. Its mission is to ensure, together with other agencies, fulfillment of the specific objectives, functions, and faculties approved in the legislation on monitoring and surveillance of all products that may affect human health; regulate and monitor the approval, execution, and evaluation of biomedical research projects or any other type of research involving human

subjects; and evaluate, register, regulate, and control domestic and imported drugs, medical equipment, disposable materials, and other health care products.

The National Drugs Program was established in 1991 with a view to ensuring more rational use of drugs and improving the quality of medical care. This program was considered necessary because of drug shortages, which resulted from economic constraints and a consequent reduction in imports, and the lack of control over the prescribing, dispensing, and circulating of pharmaceutical products, as well as the persistent practices of self-medication and polypharmacy (administration of excessive medication). In 1994, the program was reformulated and measures were implemented to require a medical prescription for most drugs (exceptions include common antipyretics and analgesics and oral contraceptives); to regulate prescriptions written by doctors according to their medical specialties; to assign patients to drug distribution units in their area of residence; to strengthen the work of the pharmacotherapeutic committees; and to maintain the regulations on distribution of consumer products intended for long-term or lifelong use.

A special effort has been made to revise the essential drugs list, as a result of which it has been possible to reduce the number of active principles to 343 distributed among 29 drug classes with 439 dosage forms. In addition, there are traditional and natural medicinal products. The official drug control center is responsible for ensuring that products meet international quality standards. It is recognized internationally as the agency authorized to evaluate and register drugs, receive information, conduct inspections, analyze and authorize products for marketing, grant and revoke production licenses, and suspend the circulation and sale of drugs when necessary.

### **Health Services and Resources**

#### *Organization of Services for Care of the Population*

**Health Promotion.** The health promotion strategy in Cuba stresses planning and execution of local projects, community organization, participation of all productive and non-productive sectors, and the political will to support the development and implementation of health promotion activities.

The maximum expression of this strategy is the healthy communities movement, which seeks to pool local resources to promote health, with a solid basis of political support and the participation of various social sectors and the community within a specific territory, which permits coordination of political, technical, and community objectives.

The Cienfuegos Comprehensive Health Promotion Project was implemented in 1989 with the participation of the gov-

ernment of the city of Cienfuegos. The project was recognized by PAHO as an innovative experience in the Region. The national [health promotion] network, composed of 28 municipalities, was created in December 1994, and within two years it had expanded to include 51 municipalities. The Ministry of Public Health and the Cuban Parliament have made development of the network a priority objective. The project also has the support of PAHO.

Another important aspect of health promotion is mass communication. Special air time is allotted for this purpose on radio and television and on national networks as well as local stations. Alliances have been forged with professionals in these media and there are now specialized health journalists in both. All health programs incorporate a health education component, and to ensure their effectiveness health professionals are systematically trained in educational methodologies, especially those who work in the area of primary health care. The production of educational materials has increased, although difficulties persist because of the country's economic situation.

**Water Supply.** Cuba's hydraulic potential, although it is not uniform in density throughout the country, is sufficient to ensure the provision of water for household, agricultural, and industrial activities; 1,200 m<sup>3</sup> of water per person per year is available for all uses. Of the total volume of water supplied to the population, 72% is of underground origin, and 28% is from surface sources; 68.3% of the total population (7.5 million) receives water from aqueducts, 89.3% in urban areas and 10.7% in rural areas. The rest of the population is served by other means (tank trucks and others), especially in rural areas. Nevertheless, the quantity and quality of the water supply have deteriorated substantially. With regard to quantity, water service is available for an average of 13 hours a day, with sizable differences among provinces, which has a negative effect on sanitation and control of vectors. Water quality is affected by the lack of treatment, which, in turn, is due to shortages of chlorine in its various forms and aluminum sulfate; in addition, chlorination equipment is frequently out of order. To correct this situation, various measures have been taken since 1994, including chlorination in about 50% of existing facilities and putting family doctors in charge of dispensing chlorine powder to families in the highest-risk areas. By directive of the central Government, in 1997 water supply systems will be upgraded in 371 rural communities with a total of 119,838 inhabitants, of which 300 are served by water tank trucks, 63 require treatment to make the water potable, and the remaining 8 need expansion of services.

**Sewerage Systems.** Coverage of liquid waste disposal is 91% for the country as a whole, and 34.2% of the total population has sewerage services. All dwellings constructed in areas without sewerage—most of which are concentrated in

rural areas—have individual collection and treatment systems, mainly latrines and septic tanks. Problems with sanitary disposal of excreta and liquid waste persist, collection systems are overburdened and in poor condition technically, and back-ups and breakage of sewer lines continue to occur frequently, with the consequent overflowing. All these problems increase the risk of contamination of drinking water supply systems. The provincial water supply and sewerage authorities have adopted measures for the organization and optimization of resources, but the results obtained have been insufficient to solve the problem.

**Solid Waste Disposal.** The situation with respect to solid waste is similar to that of liquid waste. Collection and final disposal of solid waste has been affected by transport and fuel supply problems that began in 1992 and continue to the present. This situation has given rise to the appearance of microdumps, especially in cities. Other solutions have been sought, including the use of animal-powered garbage wagons, cleanup of refuse dumps, and sanitary controls, but none of these measures has been sufficient.

To improve the health-sanitation situation, in 1994 a comprehensive national sanitation plan was implemented with civil defense participation. Supervision and control teams were created with a view to ensuring a water supply of adequate quality and quantity, proper treatment and final disposal of solid and liquid waste, and correct application of vector control and sanitation measures.

**Prevention and Control of Air Pollution.** Air pollution is not a major problem in Cuba, although some areas, especially Havana and other cities, are affected by air pollution from industrial activity: cement factories, thermoelectric power plants, and chemical plants, and, to a lesser extent, use of fuels for domestic purposes. In recent years, there has been an increase in the use of crude oil and petroleum products with a high sulfur content, which has increased the potential for pollution, with the associated health risks and ecological and economic damages. The national air pollution monitoring system, part of the surveillance system, has been seriously impaired by lack of resources; of 18 monitoring stations, only 6 are operating, and there are irregularities in the information they generate. The national air pollution monitoring program is aimed primarily at identifying and controlling the problems of each source of pollution, by updating inventories and inspection and identification of the areas at highest risk for air pollution and by improving the capacity of the system at the primary care level for the detection, assessment, and control of environmental risk factors.

**Food Safety.** Cuba has been working to reduce the number and frequency of illnesses due to consumption of foods con-

taminated with germs that are harmful to health. Biological, chemical, and toxicological studies, as well as strengthening the technical components and the efficacy of official health inspections, were some of the objectives. In addition, the hazard analysis critical control point (HACCP) methodology—which combines the scientific approaches employed in addressing the health and epidemiological problems surrounding food safety—was also adopted.

The food surveillance laboratory network comprises 14 health and epidemiology centers at the provincial level and 33 at the municipal level. The data processed by these centers are produced through sampling conducted in 136 health centers and 470 health areas within the system. The sampling plan was developed bearing in mind the risks posed by various foods and the existing resources in each province, and corrective health measures were introduced in areas where contaminated foods were found.

**Food Aid Programs.** In 1993, food intake in Cuba dropped 30% compared with 1989. The availability of foods fell below the level needed to meet the nutritional requirements of the basic market basket. In 1994 household food consumption increased by about 6%, mainly as a result of increased availability of agricultural and livestock products, foods supplied by independent producers, sales made with foreign currency in specified shops, and production of foods in work and educational centers for on-site consumption. All these measures, combined with growth in the production of various agricultural products, led to an improvement in the food situation compared with that in 1993, although some levels of availability remain unsatisfactory.

There are of three general types of national food safety programs: (1) programs aimed essentially at monitoring and assessing the food and nutritional status of the population and adopting preventive or curative health measures according to the situations at hand; (2) programs that seek to increase the production of foods, both quantitatively and qualitatively; and (3) social policy programs targeted to the entire population, addressing product availability, and especially the food and nutrition needs of vulnerable groups.

#### *Organization and Operation of Personal Health Care Services*

The National Health System comprises a network of institutions that are easily accessible and provide coverage to 100% of the population. In 1996 the system included 66,263 hospital beds (6.0 per 1,000 inhabitants) and 14,265 beds in social welfare institutions (1.3 beds per 1,000 inhabitants). Medical care is provided through a network made up of 281 hospitals, 11 research institutes, 442 polyclinics, and a contingent of family doctors practicing in workplaces and schools

in the community. In addition, there are 164 health posts, 209 maternity homes, 26 blood banks, and 4 health spas. Oral health care is provided in 168 dental clinics. Social welfare services include 190 homes for the elderly and 27 homes for disabled persons of different ages and with various types of impairment. The family doctor and nurse program serves 97% of the Cuban population.

Hospital admissions have shown a downward trend in recent years. In 1996, admissions totaled 1,419,895 (12.9 per 100,000 inhabitants). In the same year, there were 77,499,250 medical visits (7.0 per person) of which 57,563,213 were outpatient visits (5.23 per person) and 19,936,037 were emergency room visits (1.8 per person). The ratio of outpatient to emergency visits was 2.9.

Family doctors, who number 28,350 and provide 97% of the national coverage, provided 74% of the outpatient consultations. Traditional and natural medicine services were expanded, as were outpatient surgical services, and in 1996 home health care services also increased, which reflects the growing trend toward an outpatient health care model.

More than 100 operating rooms that had been closed because of physical resource problems were refurbished and put back into service, and the country slowly began to recover its surgical capacity. The number of surgical operations, which had decreased from 777,737 in 1990 to 598,329 in 1995, rose to 811,895 in 1996.

The integrated emergency system was enhanced in all provinces of the country. Within primary health care services, 33 emergency care subsystems are currently functioning and 18 more are being implemented. The objective is to reduce the case fatality rate in these services and bring down hospital mortality in minimum care services so that the services that provide care for gravely ill patients can provide adequate coverage. In addition, the medical emergency system was implemented in all the provinces and in the special municipality of Isla de la Juventud. Evaluations have shown the effectiveness of this system, which has reduced morbidity among hospital staff by an average of 40%.

The number of dental visits per person in 1996 (1.6) was higher than that reported in earlier years of the 1990s, which points to a recovery of this indicator in terms of use of oral health services by the population.

The National Disability Prevention, Treatment, and Rehabilitation Program seeks to reduce the frequency of disabilities or impairments through the creation of a grassroots rehabilitation structure. Within this structure, the family doctor and nurse are key figures, as the professionals who detect risks or incapacitating illnesses. They are supported by a multidisciplinary team that includes psychiatrists, psychologists, social workers, and physical therapy and physical fitness technicians.

Mental health services are oriented not only toward the biomedical aspects of mental health, but also toward promotion

of health, prevention of mental illness, and social rehabilitation. Pediatric hospitals provide child psychiatry services. Out-patient care for adults is available at all the polyclinics in the country. Cuba has 981 practicing psychiatrists, 173 of whom specialize in child psychiatry, as well as some 800 psychologists. One of the country's immediate objectives in the area of mental health is to increase the capacity to provide mental health services at the primary care level and to reduce hospitalization of psychiatric patients, facilitating the social reintegration of long-term patients.

The population of Cuba is one of the four oldest in Latin America and the Caribbean (12.7% of the population is 60 years old or more), and projections for the years 2000 and 2025 are that this proportion will increase to 14% and 21%, respectively. Therefore, it will be necessary to adapt and increase the operating capacity of the system to care for older adults in order to maintain the vitality of this important age group as long as possible and avoid hospitalization and diseases. To this end, in 1996 the program on health care of the elderly was restructured. The program has three subprograms: a community subprogram, social institutions (homes for the elderly), and the hospital subprogram. These programs seek to enhance the level of health, thereby reducing morbidity and mortality, complications, and sequelae.

### *Human Resources*

In 1996, the country had 60,129 physicians—that is, 54.6 per 10,000 inhabitants; 9,600 dentists (8.7 per 10,000 inhabitants); and 76,013 nursing personnel (69.1 per 10,000 inhabitants), 12,716 (16.7%) of whom were university-trained. Since 1990, the number of mid-level personnel entering the health professions has decreased, although they will continue to be graduated in order to meet the requirements of development plans, in particular the growing demand for primary care personnel. The adverse economic conditions of the period 1992–1994 were reflected in the availability of human resources, and in late 1993 a reduction in the availability of mid-level technicians was observed, particularly in the area of nursing. Since 1995, economic recovery has led to greater stability of personnel. With regard to the training of upper-level specialists in the field of public health, the policy designed during the 1990s continued to be applied. That policy seeks to reduce the numbers of students entering schools of medicine and dentistry and to stabilize admissions to nursing degree programs. The total number of mid-level technicians in 1996 was 192,781. The number of students entering mid-level technical training programs has gradually decreased in recent years as the number of these technicians has risen to meet the demand in the country's network of health institutions.

### *Inputs for Health*

Cuba was plunged into a profound economic crisis just as it was implementing a major investment program for the development of its medical and pharmaceutical industry. Nevertheless, after 1993, the worst year of the crisis, a period of recovery began, especially in the production of drugs for domestic use. Total production of drugs remained at similar levels throughout the period, except in 1993, when it dropped considerably. Domestic consumption increased 13.2%. The production of biologicals and reagents increased substantially during the period. Drug marketing was oriented toward meeting the needs of the population and supporting the priority programs of the Ministry of Public Health.

### *Expenditures and Sectoral Financing*

Cuba's health system is financed out of the state budget, the purpose of which is to ensure the achievement of development objectives, while encouraging greater efficiency in the provision of the necessary resources. The population receives free preventive, curative, and rehabilitation services, which range from primary care, routine medical attention, and dentistry to hospital care requiring the use of highly sophisticated medical technologies. In addition, all necessary diagnostic testing and drugs are provided free of charge to pregnant women and to persons receiving outpatient care in the context of certain programs.

Out-of-pocket expenditures for families include drugs prescribed for outpatient treatment, hearing aids, dental and orthopedic apparatuses, wheelchairs, crutches and similar articles, and eyeglasses. The prices for all these items are low and are subsidized by the State. Low-income segments of the population receive monetary and material assistance, including prostheses and drugs.

Despite the economic difficulties of recent years, spending on public health has increased steadily, which reflects the political will to maintain the successes achieved in this area. In 1994, health spending, which includes current health expenditures by all agencies in the country, totaled 1,061.1 million pesos, 17% higher than in 1989. This absolute increase was accompanied by a relative increase in public health spending as a proportion of GDP, total spending, and public spending. In 1994, health spending represented 7.8% of the GDP, 7.5% of total spending, and 14.6% of public spending.

In the period 1992–1996, there was a significant decrease in investment, which in 1994 represented only 3.1% of total spending. The health system did not suffer serious damage as a result of this situation, however, because considerable investment had been made in the sector during the 1980s.

With regard to the structure of current spending, about 60% is devoted to payment of wages, and this figure has tended to grow in absolute terms as a result of the incorporation of new professional and technical personnel into the sector.

In the early 1990s, 141.1 million pesos were being spent on drugs. By 1994, this number had declined to 123.8 million. However, the 1994 value does not take into account 60 million pesos spent on vitamin supplements supplied free of charge to the population to control the neuropathy epidemic that affected the country in the period 1992–1996. In 1995, spending on drugs began to increase again (135.3 million pesos), but the amount spent remained insufficient to meet the needs of the system.

Between 1990 and 1994 spending on hospital care decreased while primary health care expenditures increased. In 1994, primary health care accounted for 36% of current expenditures and hospital spending accounted for 45%, in comparison with 32% and 52.7%, respectively, in 1990.

The decisive factor for ensuring the sustainability of the National Health System is foreign currency financing for the sector. Since 1993, all imports of supplies by the Ministry of Public Health must be financed out of the foreign currency budget that the State allocates for this purpose.

In 1989 foreign currency spending by the health sector totaled US\$ 227.3 million. By 1994 this figure had dropped to only US\$ 90.1 million. In 1996, although it increased to US\$ 126.5 million, this amount was insufficient to cover necessities. This severe reduction in foreign currency financing seriously affected supply. For example, production of drugs by the domestic pharmaceutical industry dropped by more than one-third between 1990 and 1993. The reduced availability of foreign currency financing has also had an impact on the ability of the health sector to procure disposable medical sup-

plies used in health care units and for diagnostic procedures, as well as in optical and dental services.

Cuba has received little foreign aid to maintain the vitality of its health system because its access to traditional sources of financing is seriously hindered by the United States of America's blockade. The country has received humanitarian aid totaling around US \$20 million annually. In recent years, various means have been identified and developed for acquiring foreign currency directly by and for the health sector.

#### *External Technical and Financial Cooperation*

With regard to multilateral cooperation, Cuba has entered into agreements with United Nations agencies specializing in health: PAHO/WHO, UNICEF, the United Nations Food and Agriculture Organization (FAO), the United Nations Population Fund (UNFPA), and the United Nations Development Fund (UNDP). Since 1989, this collaboration has played a very important role in that Cuba, in addition to obtaining the benefits of being a member country, has strengthened its relations with institutions of excellence and has been able to disseminate some of its own advances and technologies. In addition, Cuban experts have been able to participate in the work of these agencies. Multilateral cooperation has been oriented toward the development of human resources, family planning, development of the pharmaceutical industry, research on various health problems, procurement of vaccines, and educational activities.

Cuba has depended on the collaboration of Canada, Chile, Spain, France, Italy, Mexico, and Sweden for conducting research and human resources training projects and for providing input.