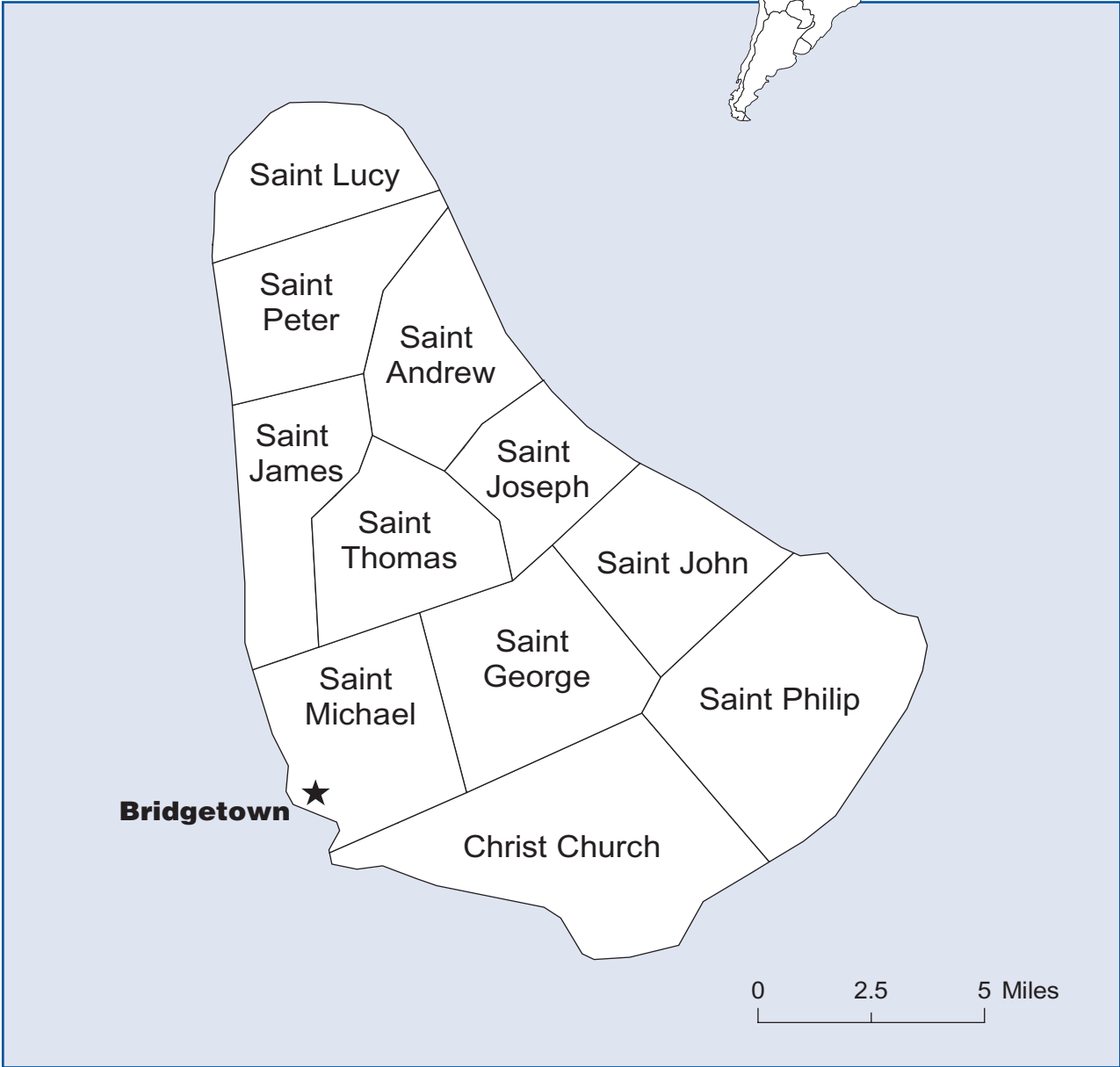


BARBADOS



Sources: Second Administrative Level Boundaries Dataset (SALB), a dataset that forms part of the United Nations Geographic Database, available at: http://www.who.int/whosis/database/gis/salb/salb_home.htm, and the Digital Chart of the World (DCW) located at: <http://www.maproom.psu.edu/dcw>. The boundaries and names shown here are intended for illustration purposes only, and do not imply official endorsement or acceptance by the Pan American Health Organization.

Barbados is the easternmost Caribbean country. The coral island stretches for 34 km and is 23 km wide; its land area is 430 km². The country is mostly flat, with its highest point rising just over 334 m.

GENERAL CONTEXT AND HEALTH DETERMINANTS

The average temperature is 27° Celsius. The annual rainfall is approximately 1,524 mm, with the rainy season falling between June and November. During these six months, there is increased vigilance for hurricanes and attendant disaster planning.

Barbados is divided into 11 parishes. The capital city, Bridgetown, is the most densely populated area. There is a public transportation system and a network of roads, with highways linking the airport, Bridgetown, the seaport, the industrial areas, and the tourist belts on the west and south coasts. Barbados has an international airport, and continues to see significant increases in passenger arrivals and air cargo. In the reporting period, the seaport continued to undergo significant development, which has facilitated the expansion of the cruise ship market.

Barbados has a democratic government with parliamentary elections held every five years. Legislative power is vested in Parliament, which comprises a 28-member elected House of Assembly, a 21-member nominated Senate, and the Governor General, who is the Head of State. The Constitution provides for a Cabinet, comprised of Ministers, that is the principal organ of policy. It is presided by the Prime Minister. The Caribbean Court of Justice has replaced the Privy Council as the final court of appeal in the country.

Social, Political, and Economic Determinants

In 2002–2005, Barbados experienced a sustained annual GDP growth of 3%, low fiscal deficit of 2.5%, net international reserves of six months import cover (in the context of an exchange rate regime which is fixed and stable with a parity of US\$ 1/BDS\$ 2), and price stability. Unemployment in 2005 dropped to 9.6%.

After recording continuous economic growth between 1995 and 2000, the Barbados economy experienced a downturn in 2001, as a result of a global slowdown from the negative repercussions of the September 11, 2001, attacks in the United States. Tradable goods industries were particularly hard-hit, with tourism output down by almost 6%. The manufacturing and agriculture industries contracted by approximately 8% and 6%, respectively. To mitigate the effects of the global recession, the Government undertook an expansionary fiscal policy, which lim-

ited the extent of the economic fallout, but increased the central government deficit from 1.5% of GDP in 2000 to about 3.6% in 2001 and 6.4% in 2002.

Despite the decline in traded activity, GDP rose by about half of a percent in 2002, principally due to growth of 7.7% in construction and an increase of 6.5% in government services.

The economy strengthened further in 2003, expanding by approximately 1.9%, largely reflecting a turnaround in tourism (up 6.9%) and agriculture not related to the sugar industry (up 2.2%), as well as growth in construction and retail services. In 2004 there were 721,000 cruise arrivals, compared with 559,000 in 2003, for a 29% increase. This continued success in the cruise market was largely due to the increasing number of ships home-porting at Bridgetown Port. Cruise ship calls increased from 442 in 2003 to 539 in 2004. The cruise ship passengers to Barbados during the first quarter of 2004 came primarily from the United States (67%), followed by United Kingdom nationals (13%) and Canadian citizens (11%). During the second quarter of 2004, 72% of cruise ship passengers visiting Barbados came from the United States.

Cruise passenger spending rose by an estimated 35%, from US\$ 13.1 million during the first quarter of 2003 to US\$ 17.6 million in 2004. Approximately US\$ 12.4 million was spent by cruise visitors from the United States and the remaining US\$ 2 million by passengers from other countries. In 2005, there were 547,534 stay-over tourists in Barbados, most of them from the United Kingdom (202,764), followed by United States citizens (131,005). New jobs were created as the economy gathered momentum. The rate of inflation in 2005 was 2.4%.

The Government of Barbados is committed to eradicating poverty well before 2015 (Goal 1 of the Millennium Development Goals). An Inter-American Development Bank Poverty Assessment Study undertaken in 1996/1997 calculated the country's poverty line at US\$ 2,752, approximately US\$ 7.00 per person per day. In 2002, approximately 38% of the poor lived in the largest urban parish of St. Michael and 20% lived in rural parishes. In 2005, there were approximately 35,000 persons living below the poverty line.

The 2004–2005 Barbados Economic and Social Report indicated that labor market conditions had improved, with the annual estimated unemployment rate at 9.8%, compared with the 11.0% figure for 2003. Employment as a percentage of the labor force was 91.3%, as compared with 90.0% in 2003.

The number of unemployed persons totaled 14,300, a fall of 1,700 persons since 2003. Both female and male unemployment declined during 2004, with female unemployment recorded at 7,500 women, compared with 8,900 in 2003. The rate of female unemployment decreased to 10.6%, from 12.6% in 2003. Male unemployment stood at approximately 6,700 males, compared with 7,100 in 2003. The rate of unemployment for males was 9.0%, a reduction compared with the 2003 figure of 9.6%.

The labor force increased by approximately 800 persons from 2003 to 2004, rising from 145,500 persons to 146,300. The labor force comprised 75,000 males and 71,300 females. The employed labor force totaled 132,000 persons, 2,500 persons more than the 129,500 employed in 2003.

During the year, the overall labor participation rate was 69.5% compared with 69.2% in 2003, representing a 0.3 of a percentage point increase. Both male and female participation rates increased by 0.2% to reach 75.3% and 64.2%, respectively.

According to the 2005 UNDP report, Barbados had a literacy rate of 98%, which is attributed to the offer of free public education from pre-primary to university level. In 2001–2005, enrollment in primary education was 100%, and education remained compulsory for ages 5–16 years. Several programs such as school meals provided in primary schools, a textbook loan initiative, subsidized transportation, a uniform grant, secondary schools bursaries (scholarships), and a wide range of grants and scholarships at the tertiary level were available to ensure that all students can actively participate. The performance of girls and women in the educational system has been improving—girls are performing at significantly higher levels than boys in core subjects of English, mathematics, social studies, and integrated sciences. The drop-off rate between primary and secondary schools was lower among females than males.

In 2004, approximately US\$ 206.2 million, 17% of the national budget, was allocated to the education and sports sector, an increase of US\$ 1.3 million from 2003. More than half of the investment in education and youth supported the continuation of the Education Sector Enhancement Program, which aimed to improve the learning environment by upgrading physical facilities, teaching skills, and teaching tools, including the use of computer technology.

The Government of Barbados continued to emphasize curriculum reform initiatives, the establishment of the National Accreditation Agency, the University College of Barbados, and expansion in access to early childhood education.

With only 170 m³ of available fresh water per capita annually, Barbados is a water scarce country. Nonetheless, the country has universal potable-water coverage, which is piped into 99% of households; 1% of households access their water through stand-pipes. With 100% access to potable water, Barbados has reached Goal 7, Target 10 of the United Nations Millennium Development Goals. The entire population had access to sewerage and excreta disposal facilities.

Barbados did not experience any natural disasters in the period under review, but the threat of hurricanes has increased in the past four years, and the country has had flooding in low-lying coastal districts. There were no injuries or loss of life due to natural disasters.

Demographics, Mortality, and Morbidity

In 2005, the UN total population estimate was approximately 270,000. National population estimates for the years between 2001 and 2005 vary by no more than 2,000 persons from this estimate, or less than 1%. Figure 1 shows the population structure in five-year age groups for 1990 and 2005, the latter one based on the last census completed in 2000. The figure shows that females accounted for 52% of the total population in 2005 and males, for 48%; the population younger than 15 years old represented 21.5% of the total.

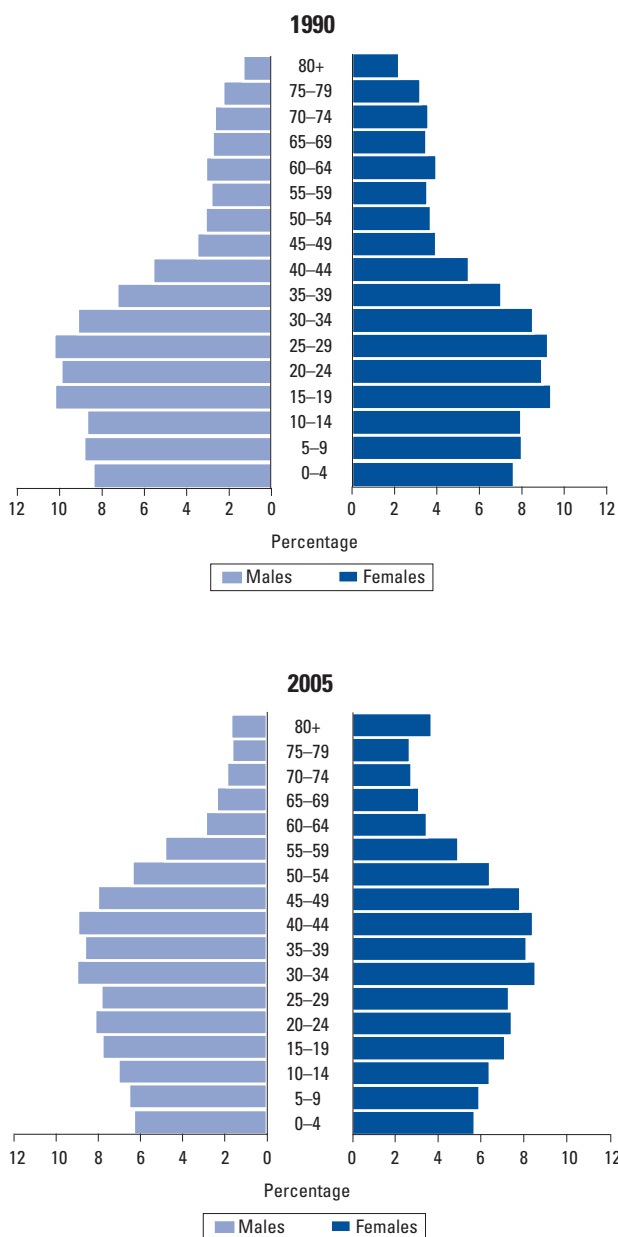
In 2005, the crude birth rate was 11.8 per 1,000 population and the crude death rate, 8.3 per 1,000. That same year, women of childbearing age (15–49 years old) represented 52% of the total female population, with a total fertility rate of 1.5 children per woman. Life expectancy at birth was 72.3 years for men and 78.9 years for women, with an overall life expectancy rate at birth of 75.8 in 2005. The infant mortality rate was 14.3 in 2003. Most of the population lives in Saint Michael, Christ Church, and Saint Philip parishes.

Migration was the major force contributing to variations in population. In 2003, Barbados had one of the largest concentrations of immigrants, with at least 12.3% of the total number of Caribbean migrants in the region. In addition, with the introduction and full implementation of the Caribbean Single Market and Economy, this free movement of labor affected the health care system.

Chronic noncommunicable diseases such as heart disease, cancer, stroke, diabetes, and hypertension continue to be the leading cause of morbidity and mortality among Barbadians. According to information from polyclinics and outpatient clinics, hypertension, diabetes mellitus, and disorders of the circulatory system were conditions commonly seen and treated among older adults (45–65 years old), whereas the impact of road traffic accidents, violence, and HIV/AIDS were more frequently observed among younger adults (20–44-year-olds).

In 2002 there were 2,215 deaths from defined causes, and in 2003 there were 2,436. In those same years, there were only 75 (3.3%) deaths due to ill-defined causes and 71 (2.8%) deaths due to unknown causes. In 2002 there were 2,290 deaths from all causes, of which 1,118 were male and 1,172, female. The largest number of deaths were in persons 65 years old and older (1,680; 932 females and 748 males), followed by deaths in the 5–49-year-old age group (281). The age group 50–64 years old accounted for 272 deaths and the age group under 5 years old accounted for 57 deaths.

FIGURE 1. Population structure, by age and sex, Barbados, 1990 and 2005.



In 2003, there were 2,507 deaths from all causes, distributed virtually evenly in men and women. The largest number of deaths were in persons 65 years old and older (1,822), followed by deaths in the age group 50–64 years old (322) and deaths in persons 5–49 years old (299); there were 53 deaths in children under 5 years old. In 2002, the 10 leading causes of death were diabetes mellitus (221), cerebrovascular diseases (205), diseases of pulmonary circulation and other forms of heart disease (198), hypertensive diseases (162), ischemic heart diseases (150), pneu-

monia (132), malignant neoplasms of the digestive organs except the stomach (114), malignant neoplasm of the prostate (102), septicemia (55), and AIDS (42). In 2003, the leading causes were diseases of pulmonary circulation and other forms of heart diseases (257), diabetes mellitus (246), cerebrovascular diseases (207), ischemic heart diseases (180), hypertensive diseases (159), pneumonia (143), malignant neoplasms of the digestive organs except stomach (115), malignant neoplasm of the prostate (101), septicemia (74), and AIDS (30).

There were 932 deaths in females and 748 in males in 2000. Among persons 15–24 years old, 25 of the deaths were in males and 15 in females. The leading causes of death for males were homicides (5), motor vehicle accidents (3), diseases of pulmonary circulation and other forms of heart disease (3), and accidental drowning and submerging (3). There was one death from AIDS in this age group. The main causes of death among females were diseases of the musculoskeletal system and connective tissue (3), other accidents (2), hypertensive diseases (1), and septicemia (1).

The leading causes of mortality among adults were diseases of pulmonary circulation and other forms of heart disease, which were responsible for 256 deaths, with a rate of 94 deaths per 100,000 population; cerebrovascular diseases, for 207 deaths, with a rate of 76 per 100,000; diabetes mellitus, for 246 deaths, with a rate of 90 per 100,000; hypertensive diseases, for 159 deaths, with a rate of 59 per 100,000; pneumonia, for 143 deaths, with a rate of 53 per 100,000; malignant neoplasms of the digestive organs except stomach, for 115 deaths, with a rate of 42 per 100,000; malignant neoplasm of the prostate, for 101 deaths, with a rate of 37 per 100,000; septicemia, for 74 deaths, with a rate of 27 per 100,000; malignant neoplasm of the breast, for 57 deaths, with a rate of 21 per 100,000; and AIDS, for 30 deaths, with a rate of 11 per 100,000.

HEALTH OF POPULATION GROUPS

Children under 5 Years Old

Infants and children 1–4 years old represented 6.8% of the estimated total population in 2003. That year there were 63 deaths in children under 5 years old; 50 deaths were in infants, of which 32 were neonatal deaths and 18 were postneonatal deaths. The estimated infant mortality rate was 14.3 per 1,000 live births; the corresponding age-specific death rate in children 1–4 years old was less than one death per 1,000 population in 2003.

In 2003, the causes of death in this age group were conditions originating in the perinatal period (37), congenital anomalies (6), pneumonia (3), HIV/AIDS (3), and sudden infant death syndrome (2).

Low-birthweight babies (under 2,500 g) continue to be of concern, with rates fluctuating between 12.8% in 2004 and 13.9% in 2005.

The perinatal mortality rate in 2003 was 14.8 deaths per 1,000 live births, but rates fluctuated over the period. In 2001–2005, the highest rate was in 2001, 22 perinatal deaths per 1,000 live births.

The 2002–2003 Report of the Chief Medical Officer stated that admission to the pediatric ward for malnutrition among children under 5 years old was rare; obesity in children increased, however.

Between 2001 and 2004, immunization coverage was polio, 91%; DPT/HIB, 92%; and MMR, 93%. Children seen in the government clinics are routinely monitored for growth and development.

Children 5–14 Years Old

In 2003, the age group 5–14 years old represented 14.7% of the total population; males represented 7.4% of the population and females, 7.3%. In 2003, there were four deaths in this age group, one due to viral disease, one to leukemia, one due to diseases of the nervous system, and one to malignant neoplasm of unspecified sites. The age-specific death rates were 20 per 100,000 population in 2002 and 10 in 2003.

The number of deliveries among women younger than 15 years old declined from 41 in 2001 to 6 in 2003. The number of terminations of pregnancy halved, decreasing from 8 in 2001 to 4 in 2003.

The 2002 Global Youth Tobacco Survey indicated that tobacco use was initiated at a median age of 11 years among boys and a median age of 13 among girls.

At age 11 years, children are given a booster of diphtheria, tetanus, and polio and the second MMR dose as part of the entry requirement into secondary school. The overall health status of this group is good. There were no deaths in this age group from HIV/AIDS from 2002 to 2003.

Adolescents 15–24 Years Old

In 2003, persons aged 15–24 years old represented 14.7% of the total population; males represented 15.5% and females, 13.9%. There were 34 deaths in this age group in 2002, due to homicide and injury purposely inflicted by other persons (9), motor vehicle accidents (5), diseases of the urinary system (4), and HIV/AIDS (2). In 2003, there were eight deaths in this age group, whose causes were diseases of the musculoskeletal system (3), other accidents (2), diseases of pulmonary circulation and other forms of heart disease (1), accidents caused by fire and flames (1), and homicides and injury purposely inflicted by other persons (1).

In 2003, there were 1,499 deliveries to women 15–24 years, representing 43% of deliveries to women of all ages. In 2003, there were 178 terminations of pregnancy to women 15–24 or 41% of terminations of pregnancy to women of all ages. Statistics from the Maternal and Child Health Services indicated that the

number of new acceptors of prenatal services was 1,030 in 2001 and 914 in 2003.

The increasing incidence of violence and illegal drug use is of great concern; young Barbadians are particularly vulnerable in this regard. This group is at risk for violence, deviant behavior, precocious sexuality, mental health disorders, and substance abuse, including coping disorders rooted in depression and psychosocial stress. Marijuana, alcohol, and, to a lesser extent, cocaine were the drugs of choice among this cohort. This increasing drug use has had economic implications for Barbadian society as productive hours are lost by the workforce as a result, as well as the increased health care costs from treating individuals with substance use problems, who sometimes are at an increased risk of acquiring diseases such as HIV/AIDS and other sexually transmitted diseases. The latter consequence could become a serious threat to public health.

There were two persons in this age group who died from HIV/AIDS in 2002; there was one death due to HIV/AIDS in 2003.

A report of the Barbados Risk Factor and Health Promotion Survey conducted in December 2002 suggested that the mean age at which current smokers started to smoke was around 16.5 years. Other studies suggest that smoking may begin at even earlier ages, however. Reports of the 1999 and 2002 Global Youth Tobacco surveys indicated that whereas more than 30% of students may have smoked at some time, only 1% considered themselves to be regular (daily) smokers.

Among the main causes of illness and deaths in this cohort were homicides, motor vehicle accidents, and other accidents. Deaths in this age group fluctuated from 34 in 2002 to 25 in 2003.

Teen pregnancies remained a serious problem. In 2002, births to teenagers were 18% of all births; in 2003 they were 16%. There were 619 teenage deliveries in 2002 and 573 in 2003. Of the total number of abortions in 2002, 16% (514) were in teenage women; they increased to 19% (432) in 2003.

There is an active children's development center, with 2,740 children enrolled in 2004.

Adults 25–64 Years Old

In 2003, adults 25–64 years represented 52% of the total population, with males accounting for 52% and females for 51%. The total fertility ratio in 2005 was 1.5 children per woman 15–44 years old. Data from the Barbados Family Planning Association indicated that in 2003 and 2004 the family planning methods preferred by adults were oral and injectable contraceptives. With the promotion of early registration for prenatal services, women were seen by the 12th week of gestation and regularly thereafter for monitoring maternal health and fetal growth, as well as to prevent medical complications for both mother and baby during pregnancy. There was one maternal death in 2002, two in 2003, and none in 2004 and 2005.

In 2003, there were 84 deaths among 25–44-year-olds. The leading causes of death in this group were diseases of pulmonary circulation and other forms of heart disease (six), pneumonia (six), and homicide and injury purposely inflicted by other persons (five).

In 2003, there were 103 deaths among persons 45–64 years old, and the leading causes were diabetes mellitus (13), other malignant neoplasms (9), malignant neoplasm of the cervix (8), hypertensive diseases (8), and diseases of pulmonary circulation and other forms of heart disease (8).

Morbidity statistics from the primary health care system indicated that in this age group, conditions treated included hypertension, diabetes mellitus, and disorders of the circulatory system. The male clinic of the Barbados Family Planning Association (NGO) reported a rise in new client visits, from 250 in 2003 to 356 in 2004. The total male visits for 2004 rose 60% to 955, from 597 in 2003.

Older Adults 65 Years Old and Older

In 2003, the population 65 years old and older represented 12% of the general population; males accounted for 10% and females for 14%. In 2003, there were 840 deaths among persons 65 years old and older, and the leading causes were diabetes mellitus (131), cerebrovascular diseases (112), diseases of pulmonary circulation and other forms of heart disease (109), and hypertensive diseases (87).

With an increasingly aging population, there were major challenges for the provision of health care and other social services, especially for persons 75 years old and older. About 4% of the elderly live in institutions, with the remainder living at home, either alone or with relatives.

The Family

In Barbados, the average household size is 3.5 persons. More than 80% of households have telephone service and 90% have installed electricity. The Social Welfare Department reported that among family problems seen, the majority related to family maintenance matters, which ranged from 455 cases in 2003 to 1,118 in 2005. In 2003 there were 55 cases of domestic violence, 330 in 2004, and 191 in 2005.

The Department's family services section continued to provide professional service in intervention and management of individual and family problems, and the empowerment of persons in dysfunctional situations.

In 2004, there were 2,465 cases investigated, compared with 851 in 2003. The Fatherhood Initiative Program processed requests from mothers who sought assistance with securing maintenance for their children. The purpose of the program is to protect and preserve the family, provide fathers with the necessary skills to participate meaningfully in their children's development,

and foster better relationships between the parents. There were 1,150 males counseled in 2004 and 1,066 in 2003. In 2005, the Welfare Department continued to offer counseling. In 2004 3,345 children under 16 years old received monetary grants, compared to 3,357 in 2005.

The Child Care Board processed nearly 2000 inquiries, referrals, and complaints concerning 2,300 children in 2005; approximately 900 were new allegations of abuse, affecting almost 1,000 children.

The National Assistance Program responded to material needs of persons by paying utilities and rent; offering emergency food vouchers; providing dentures, spectacles, and hearing aids; and caring for and supporting persons living with HIV/AIDS.

Workers

Statistics from the National Insurance Office, the social security institution and main provider of sickness and injury benefits in Barbados, showed that at the end of 2004 the total claims received was 72,489, a 16.5% decrease from the previous year. Sickness claims account for approximately 70.3% of total claims received, followed by claims for injury on the job. All occupational accidents were reported to and investigated by the Ministry of Labor and Civil Service's Labor Department.

Persons with Disabilities

Statistics from the National Disability Unit showed that the total number of persons with a disability or a major impairment was 13,142 in 2000. Of them, 537 (4%) were under 5 years old, and 4,714 (35%) were 65 years old and older; 2,868 persons with disabilities (21%) were females and 1,846 (14%) were males. Loss of sight was the most common form of disability for both males and females, with a total of 2,446 cases.

The Children's Development Center had a registration close to 3,000 in 2005.

A training program in recreational therapy was conducted to enhance the provision of services at that institution.

HEALTH CONDITIONS AND PROBLEMS

COMMUNICABLE DISEASES

Vector-borne Diseases

In 2004, 566 cases of **dengue fever** were reported, with 2 confirmed deaths. Serotype 3 was the only serotype identified that year. There were 474 cases of dengue fever in 2005.

Malaria is not endemic in Barbados; there were three imported cases of malaria between 2003 and 2005, but no deaths due to the disease.

In 2004, the number of cases of **leptospirosis** increased due in part to unseasonably heavy rainfall: 30 cases and 2 deaths were reported that year, compared to 22 cases and one death in 2003. Most reported cases were among outdoor workers. At the end of 2005, the number of leptospirosis cases was 21.

There were no cases of **yellow fever**, **Chagas' disease**, **schistosomiasis**, or **lymphatic filariasis**.

Vaccine-preventable Diseases

Thanks to a successful Expanded Program of Immunization, in 2001–2005 there continued to be no cases of **polio**, **neonatal tetanus**, **measles**, **rubella**, or **congenital rubella syndrome**. In 2005, vaccination coverage for polio was 91%; for DPT/HIB, 92%; and for MMR, 93%. In 2004, the varicella (chickenpox) vaccine was administered to at-risk staff in the Ministry of Health.

Intestinal Infectious Diseases

There were no reported cases of **cholera** or **helminthiasis** in the period. Cases of **food-borne illnesses** increased from 62 in 2003, to 173 in 2004, and to 226 in 2005. In 2004 there were 40 cases of **campylobacter** reported, compared with 15 in 2003. This was the highest number of reported cases since 2000. In 2004, there were no reported cases of **shigellosis**; five were reported in 2003. The increased use of sanitary facilities for the disposal of fecal waste was associated with the gradual decline of shigellosis.

Chronic Communicable Diseases

During 2004, Queen Elizabeth Hospital reported 20 cases of **tuberculosis**, compared to 13 cases in 2003. Of these, four were HIV co-infections, nine were imported cases, and one was in a 2-year-old child. In 2005 there were 12 reported cases of tuberculosis, 1 of them drug-resistant. The increase in the number of tuberculosis cases is related to HIV-coinfection and an increase in imported cases. The ease of migration and an increased life expectancy of HIV-infected persons due to the Highly Active Antiretroviral Therapy (HAART) Program will affect the management of tuberculosis. It should be noted, however, that the overall number of tuberculosis cases reported remains low.

At the end of 2005 there were 12 confirmed cases of **leprosy** (Hansen's disease). Of these, two were active cases that had been imported from other Caribbean countries and were being actively treated.

Acute Respiratory Infections

In 2002, there were 132 deaths due to **pneumonia**, of which 85% (112) were in persons 65 years old and older. In 2003 there were 143 deaths from pneumonia, with 60 deaths in persons 65 years old and older. Asthma continued to be a significant cause of morbidity, with more **asthmatic episodes** in all age groups occurring primarily during the rainy season. Asthmatic episodes

treated at the Accident and Emergency Department of Queen Elizabeth Hospital averaged 10,030 cases, of which approximately 3.8% were admitted. In 2003, there were 431 admissions for asthmatic attacks and 406 in 2004.

HIV/AIDS and Other Sexually Transmitted Infections

Information available up to March 2005 shows that there were 34 new HIV cases, compared with the 60 reported for the same period in 2004. Of persons testing positive for HIV, the majority (54%) were 20–44-year-olds, with the highest numbers in persons aged 30–34 years old.

By the end of March 2005, there were 22 new AIDS cases; 35 were reported for the same period in 2004.

There were fewer cases of AIDS reported for both males and females in 2005, but the number of deaths due to AIDS increased, from five by the end of March 2004 to nine by the end of March 2005.

All pregnant women attending prenatal clinics were counseled about and tested for sexually transmitted infections (STIs), including HIV. In 2003, there were 5,360 reported cases of STIs.

NONCOMMUNICABLE DISEASES

Metabolic and Nutritional Diseases

In 2001, there were 25 deaths due to endocrine and metabolic diseases, 24 of which occurred in persons 65 years old and older; in 2003, there were 8 deaths, 7 of which occurred in persons 65 years old and older. There were four cases of protein-calorie **malnutrition** in 2001, one among 35–44-year-olds and three among persons 65 years old and older. There was only one case in 2003, in the age group 45–64 years old. Surveillance of **overnutrition** and **undernutrition** in children under 5 years old is carried out as part of the maternal and child health program.

The 2000 Food Consumption and Anthropometric Survey showed that 30.0% of Barbadian women were obese and 58.0% were overweight; 29.0% of men were overweight and 10.0% were obese. The prevalence of **obesity** increased, mainly due to the adoption of high fat diets and a sedentary lifestyle. Increasing proportions of children are **overweight**, especially among 11–17-year-olds. The prevalence of overweight among preschoolers was estimated to be as high as 3.9% in 2000.

Cardiovascular Diseases

Diseases of pulmonary circulation and other forms of heart disease ranked among the top three of the five leading causes of death, accounting for 256 deaths in 2002 and 198 deaths in 2003. The bottom two of the five leading causes of death were **ischemic heart diseases**, with 150 deaths in 2002 and 180 in 2003, and **hypertensive diseases**, with 162 deaths in 2002 and 150 in 2003.

Hospital discharge statistics for cardiovascular diseases for the years 2000, 2001, and 2002 were 1,092 for 2000, 1,373 for 2001, and 1,763 for 2002.

Malignant Neoplasms

Malignant neoplasm of the prostate remained a concern throughout 2000–2004. In 2000, 63 men were diagnosed with malignant neoplasm of the prostate. In 2000, there were 102 deaths from malignant neoplasm of the prostate, representing 24.2% of all deaths from malignant neoplasms. Other malignant neoplasms included neoplasm of the female breast, with 51 deaths (12.1% of total deaths due to malignant neoplasms); other malignant neoplasms of the digestive organs and peritoneum, with 49 (11.6%); malignant neoplasm of the colon, 46 (10.9%); and malignant neoplasm of the stomach, 32 (7.6%).

In 2004, there were 79 referrals for malignant neoplasm of the breast, 34 for malignant neoplasm of the cervix, and 39 for malignant neoplasm of the prostate; in 2005, the figures were 112, 19, and 41, respectively. The majority of the cases of malignant neoplasms of the breast and of the cervix were among 30–69-year-olds; the majority of cases of malignant neoplasm of the prostate occurred among 50–89-year-olds.

The decrease in cases of malignant neoplasm of the cervix can be attributed to enhanced screening in the public and private sectors. The increase in cases of malignant neoplasm of the prostate points to the need to review and strengthen programs dealing with men's health.

OTHER HEALTH PROBLEMS OR ISSUES

Violence and Other External Causes

The 2004–2005 Barbados Social and Economic Report showed a 3.9% decline in reported crime, following a decline of 17.3% in 2003. The total number of reported crimes was 9,435 in 2004, which represented a drop of 388 cases from the 2003 total. Reported cases of major crimes and of property crimes declined, as a result of the success of policies and programs of the Royal Barbados Police Force. For example, enhanced community-based policing programs have been introduced, including neighborhood watches, setting up of community outposts, and utilizing community profiling. This decline notwithstanding, areas of concern continued to present challenges to the Royal Barbados Police Force, such as the continuing, pervasive use and abuse of illicit drugs, the propensity of resorting to violence to settle disputes, the use of firearms in the commission of certain offenses, and the high number of youth offenders, particularly males.

Mental Health

Most patients in the eight-bed mental health service unit within Queen Elizabeth Hospital were admitted due to a mood

disorder; 20% had some kind of a psychotic disorder. In addition, 80% were female and 15%–20% were children or adolescents. The average length of stay was 10 days.

Approximately 1,000 patients were admitted annually to the Psychiatric Hospital, of which 200–250 were first admissions: 60% were male; 70% were admitted involuntarily. In 2004, there were 1,035 admissions to the Psychiatric Hospital. The bed occupancy rate in 2004 was 82%. The number of deaths also decreased, with only 13 persons dying in 2005. The number of outpatient visits were about 13,000 in both 2004 and 2005. Outpatient services were provided in the public sector and by general practitioners in the private sector.

Environmental Pollution

Test results of groundwater and spring water sampled by the Environmental Protection Department in 2001–2005 showed that measurements for dissolved solids, chlorides, electrical conductivity, pH, and nitrates did not exceed WHO standards. The high nitrate values in Barbados' waters, however, seem to indicate that they have been adversely affected by agricultural activities.

Oral Health

Detection of oral health problems and appropriate intervention was provided for all school-age children up to 18 years of age. An emergency service providing extractions was available at no cost for the elderly and children up to age 16 years. Limited oral and maxillofacial services were available at the Queen Elizabeth Hospital.

Between 2001 and 2003 there were 53,567 visits to the dental health clinics within the public primary health care system. Of these, 20,226 (37.8%) were for prophylaxis; 9,426 (17.6%), for extractions; 9,192 (17.25%), for fillings; and 98 (0.18%), for root canals. In that same period, visits to the polyclinics for oral health reasons ranged from 15,000 to 20,000. Dental clinics used improved treatment modalities, including the use of fluoride releasing restorative materials, in all public-sector dental clinics.

RESPONSE OF THE HEALTH SECTOR

Health Policies and Plans

The Government's vision for a healthy people is to empower individuals, communities, and organizations to pursue health and wellness within a health system that guarantees the equitable provision of quality health care. This, in turn, will fully contribute to Barbados' sustained economic, cultural, social, and environmental development. To this end, the National Health Policy rests on the tenet that health care is a fundamental right of every citizen.

The 2002–2012 Barbados Strategic Plan for Health was developed to reform the health system by bringing about greater effi-

ciency, effectiveness, financial sustainability, equity, and social participation in the delivery of quality services. The Plan, which was crafted with input from within and outside the health sector, addresses 10 priority action areas and has broad strategies and measurement indicators.

The Plan represents a shift from a medical model to a more client-focused model of care. It gives greater emphasis to health promotion, disease prevention, and full stakeholder collaboration. Its strategies include programs for vulnerable groups, such as the disabled and persons with alternative lifestyles, who may be reluctant to seek the formal health care system. This new strategic direction requires that there be greater collaboration with nongovernmental organizations, community-based organizations, civil society, and the private sector and encompasses a new regulatory framework with monitoring mechanisms. Thanks to these reforms, there are now new opportunities for the Government to forge new partnerships and strengthen existing alliances with NGOs to provide support, particularly in care, advocacy information, and education. There are approximately 45 health-related NGOs and community-based organizations on record. The Ministry continued to incrementally amend the Health Services Act and regulations to facilitate the implementation of the reform.

Barbados has pockets of poverty, and the Government has embarked on a poverty eradication program since 1999, which has been further strengthened by the formation of the Ministry of Social Transformation.

A national mental health policy to guide the reform on mental health service delivery was approved by the Cabinet in June 2004.

In 2005, the legislature discussed ways to address communicable diseases, food safety, embalming and transportation of human remains, and animal control. Specifically, the Government has introduced legislation to strengthen the control of imported foods. Policies were developed for disease surveillance and institutional hygiene. In 2005, comprehensive solid waste management legislation began to be prepared. That same year, a draft national policy for the country's greening and beautification was prepared, and minimum standards of care for residential facilities for persons with substance abuse disorders were developed and submitted to responsible government authorities so that regulations could be drafted.

The Health Services Act, Cap 44, and its regulations provide for the comprehensive regulation of all public health matters. Through the Act, the Government regulates and monitors new development projects and other commercial and industrial activities, specifically with respect to their impact on drinking water quality, near-shore water quality, solid and liquid waste management, hazardous waste management, and air and noise pollution. The Government also maintains a food inspection program at ports of entry and at local food processors and shops, supermarkets, restaurants, and other businesses to ensure that food offered for human consumption meets minimum standards.

Organization of the Health System

Under Section 12 of the 1969 Health Services Act, the Ministry of Health is responsible for the health of the population of Barbados; it is the executing agency for the delivery of health care. The Ministry provides a steering role, which includes setting the health sector's vision—defining the strategic direction, policies, regulations, norms, and standards. The Chief Medical Officer is the Ministry's technical head.

The Ministry of Health is the major provider of health care services in the public sector. It provides acute, secondary, and tertiary care at the 554-bed Queen Elizabeth Hospital, including medicine, surgery, pediatrics, obstetrics and gynecology, accident and emergency, psychiatry, and oncology. Subspecialty services include cardiovascular surgery, neurosurgery, and orthopedics. A medical aid scheme is also available for persons requiring medical services that are not available on the island. Queen Elizabeth Hospital is also a teaching hospital and is affiliated with the University of the West Indies School of Clinical Medicine and Research. Mental health services are provided at an 8-bed unit within Queen Elizabeth Hospital and at the 627-bed Psychiatric Hospital. The Psychiatric Hospital provides inpatient, outpatient, and outreach services, with additional limited outpatient services offered at the eight polyclinics. In addition, residential services are provided for persons with substance abuse disorders at two privately managed drug rehabilitation centers. The Government has a contractual arrangement with these centers for the provision of care. The Government also operates four long-term care institutions, with a total bed capacity of 706 beds for residential care of elderly persons. Through a contractual agreement with the private sector, the Government is able to provide care for an additional 300 elderly persons.

Services in the private health care sector continue to expand to include in-vitro fertilization, stem-cell therapy, complementary and alternative medicine, cosmetic surgery, and renal dialysis. There are about 50 nursing and senior citizens' homes in the private sector, providing long-term care for persons 65 years old and older.

It is estimated that 20%–25% of the population has private health insurance coverage. Health insurance packages are marketed specifically to credit unions, trade unions, and large organizations.

Environmental health officers and the Environmental Engineering Division are responsible for regulatory functions that safeguard the quality and safety of food, drinking water, air quality, solid and liquid waste management, control of disease vectors, and the management of hazardous waste. In addition, public health nurses collaborate with environmental health officers to maintain surveillance at the air and sea ports for diseases listed in the International Health Regulations, and investigate cases of notifiable diseases.

The safety and effectiveness of drugs and the operations of pharmacies and pharmaceutical manufacturing plants are the

responsibility of drug inspectors, who function under the drug control regulations. Three drug inspectors work with the Police Department and the Ministry of Health in issues dealing with narcotics and controlled substances. There is legislation to regulate and monitor the operations of private hospitals and of nursing and senior citizens' homes through a multidisciplinary inspection team that comprises a public health nurse, an environmental health officer, a drug inspector, and a nutritionist. There is a provision to incorporate other professionals as needed.

Public Health Services

Primary health care services are provided through eight polyclinics and two satellite clinics strategically located to allow for easy access by clients. Services include maternal and child health, adolescent health, community mental health, dental health, nutrition, general practice clinics, and environmental health services.

Much effort and many resources are invested in the fight against HIV/AIDS. Thanks to added resources dedicated to this effort, the response of the health care system to HIV/AIDS has radically changed. In addition to implementing best practice models for the treatment and laboratory monitoring of patients living with HIV/AIDS, the Government offered enhanced psychosocial support through the counseling and domiciliary care program. At the end of 2004, US\$ 5.6 million was spent on the program, compared with US\$ 7.7 million spent in 2003 and US\$ 6.9 million spent in 2002.

To reduce the number of TB cases the TB control program has been reviewed and strengthened with the introduction of the Directly Observed Therapy (DOTS) initiatives as well as forging closer links with the HIV/AIDS program.

In 2004, the welfare department provided National Assistance Grants for 180 Persons Living With HIV/AIDS (PLWHA); 183 persons also received in-kind assistance, including food vouchers, furnishings, clothing, and dentures. Total expenditure on these National Assistance Grants was US\$ 125,256.

The Barbados Cancer Society launched a breast cancer screening project to promote early detection, and reduce premature deaths due to breast cancer.

During 2004, 320 persons were assessed and referrals made based on these assessments. The Ministry of Health assigned a clinical medical officer from the polyclinics to visit the Children's Development Center to address mental disability rehabilitation.

Medical practitioners are required by law to notify the Ministry of Health of all cases of communicable diseases listed in the health services regulations. The National Epidemiologist leads a team responsible for surveillance of communicable diseases; the team is comprised of environmental health officers and public health nurses who work in collaboration with the public health and private sector laboratories, as well as the *Leptospira* Laboratory.

The Government of Barbados, cognizant of the importance of environmental sustainability to Barbados' economic and social

welfare, remains committed to coordinating sustainable development work programs. To help protect the country's fragile ecology, the Environmental Protection Department periodically monitors groundwater, spring water, and near-shore bathing water.

Active surveillance for the *Anopheles* mosquito was carried out in wetlands as a way to prevent the transmission of malaria. In 2004, US\$ 1.35 million was allocated to the vector control program to control vectors associated with the spread of disease. The mosquito control program targeted *Aedes*, *Culex*, and *Anopheles* species of mosquito.

In 2005, the Coastal Zone Management Unit conducted a beach profile to better understand beach dynamics at high-profile locations. That same year, the Unit collaborated with the University of the West Indies in a temperature monitoring project designed to assist in establishing a long-term coastal water temperature profile for Barbados' coasts. In 2005, US\$ 2.65 million was spent on the coastal infrastructure program.

The marine pollution control section of the Environmental Protection Department investigated 30 complaints, which comprised oil pollution, foul odors, wastewater and sewerage discharges, and petroleum product discharges. In 2005, a solid waste and hazardous materials management section was added to the environmental protection department. The Solid Waste Unit conducted teacher-training workshops to introduce teachers to various educational tools, including the *Guide to the Integration of Solid Waste Management into the School Curriculum*. Other materials included a brochure series; information on a solid waste website; the game, "Waste Buster"; and an educational storybook, "Timmy Turtle and the Litterbugs."

The Barbados Water Authority provides potable water to households throughout the country. Approximately 99% of dwellings are connected to the supply; the remainder have access to potable water. The water supply strategy involves the use of inland deep-water wells and desalination of brackish water. In 2004, 54 million m³ of water was consumed. In 2005, nine public and two agricultural supply wells were monitored. In addition, all wells recorded acceptable mean pH values, ranging from 6.97 to 7.46. Groundwater samples were analyzed for 21 water supply parameters. Five parameters which gave the best description of water quality were selected for detailed analysis. The selected parameters were total dissolved solids, chlorides, electrical conductivity, pH, and nitrates. Seven public springs were monitored in 2005; average total concentrations were in compliance with WHO standards.

In 2005, five beaches were added to the sampling regime of the recreational water monitoring program in an effort to determine whether waters are safe for bathing. Weekly samples are taken and analyzed for fecal coliform and enterococci.

The Government is committed to preserving the country's ecosystem by improving sewage disposal along the densely populated south and west coasts and in Bridgetown. The City of

Bridgetown and the country's southwest coastal area are connected to sewerage systems. The primary objective of providing sewerage connections to these areas was to bring the near-shore water to bacteriological standards in line with international standards and to reduce chemical contamination affecting reefs, marine life, and beaches.

The effluent from sewerage treatment plants was monitored for indicators including total nitrogen, total phosphorous, and chemical oxygen demand. Feasibility studies are being undertaken to provide sewerage services on the west coast. In the meantime, however, hotels in this area operate package sewage treatment plants.

The Government gave priority to solid waste management in order to reduce the quantity of refuse in the waste stream and to address concerns with illegal dumping. The Inter-American Development Bank-funded Integrated Solid Waste Management Program included a composting facility and a chemical waste storage facility. Incentives will be provided to stimulate recycling.

The Ministry of Health's Environmental Health Division is responsible for inspecting all food destined for human consumption. In 2003, the Division inspected 24.8 million kg of meat, poultry, and fish (local and imported). Of these, 2.1% were determined to be unfit for human consumption and were condemned. The Port Health Inspection service was responsible for inspecting all food landing at ports of entry for wholesomeness and for taking food samples for bacteriological, chemical, and organoleptic analysis. It also inspected and monitored the handling of food prepared for export on cruise liners and airplanes and the issuing of relevant certificates. The Port Health Officer inspected all food businesses and restaurants and supervised the disposal of condemned food items.

Surveillance of food catering establishments licensed under the Health Services Act—hotels, restaurants, bakeries and shops, supermarkets, food-processing plants, and itinerant food vendors—was kept up. Temporary restaurant permits were approved for vendors operating at street fairs and festivals. Each year, the Ministry of Health provides training courses for food handlers as a strategy to prevent food-borne outbreaks.

The Government operated a school-meals program that provided daily meals at an affordable price for primary school students. The Welfare Board, the Barbados Red Cross Society, church-based organizations, and other NGOs provided food assistance to the needy. In the public sector, the National Assistance Board assigned home helpers to prepare meals for elderly persons living alone. The Ministry of Health facilitated a food bank program for persons living with AIDS stocked by food donations from the public.

Barbados has a national disaster program that seeks to prepare the country in the event of natural or man-made disasters. This program is community focused but each sector is assigned particular duties and responsibilities.

The Ministry's avian influenza plan was developed in 2005 to enhance surveillance at the ports of entry, wetland surveillance to detect illness in all birds including migratory and wild birds, prophylaxis measures for at-risk populations, and appropriate education for the public.

Individual Care Services

Outpatient services are provided in the public and private sectors. Between April 2004 and March 2005 there were some 3,000 surgeries performed at Queen Elizabeth Hospital. There were 105,286 outpatient visits in 2001, 98,171 in 2002, and 96,310 in 2003. Outpatient visits in the Accident and Emergency Department and in the General Outpatient Clinic were 44,048 in 2001 and 47,050 in 2003.

Polyclinics provided a significant share of ambulatory visits in the public sector. In 2005, the polyclinics provided 391,315 primary care clinic attendances, including maternal and child health services, dental services, and general practitioner visits. Since 2000, catheter changes were done in the polyclinics, rather than at Queen Elizabeth Hospital.

According to the 1998 Report on the Barbados Health Sector Rationalization Program, the private sector provided most medical and surgical ambulatory services, by a modest margin. In terms of dental services, however, the private sector was by far the greater provider, because public sector dental care is offered mainly to children under 18 years old and, to a limited extent, to pregnant women and elderly persons.

Children with developmental challenges are assessed at the Children's Development Center, which provides a wide range of services, including speech therapy, ophthalmology, audiology, psychology, psychiatry, and occupational therapy. Long-term institutional care is provided for children with physical and mental disabilities at the St. Andrew's Children's Center.

In 2005, asthma cards were given to all patients with asthma. Protocols for the management of asthma in polyclinics and schools were developed and distributed.

A diabetes protocol was developed and training in the use of this protocol in the primary health care setting and with all staff levels was provided at Queen Elizabeth Hospital.

In an effort to reduce the number of non-emergencies that arrive at Queen Elizabeth Hospital's Accident and Emergency Department and reduce waiting times for medical care, in 1999 the Government instituted a fast-track system at the polyclinic nearest to the hospital. Approximately 70% of patients seen at the polyclinic were walk-ins and 30% were referrals from Queen Elizabeth Hospital's Accident and Emergency Department.

New classes were added to the sign language program in 2004, some of which catered to parents and relatives of children with disabilities; 115 persons graduated in 2004.

In 2004, 67 persons were granted aids to daily living equipment such as canes, shower extensions, wheelchairs, cushions,

raised toilet seats, and grab bars. An additional 26 persons with disabilities were placed in occupational activities.

More than 205,492 laboratory requests were conducted at Queen Elizabeth Hospital in 2003. Approximately 81% of all tests are performed at either the hospital's laboratory or at the public health laboratory at Winston Scott Polyclinic. Four private laboratories together account for one-fifth of the country's laboratory testing. Bacteriological testing also is done in collaboration with the Caribbean Epidemiology Center (CAREC). The blood bank that functions under Queen Elizabeth Hospital routinely screens donated blood for HIV infection, hepatitis B, hepatitis C, and syphilis.

There were no reported cases of diseases transmitted through blood transfusions during the period under review. There was no evidence that the six reported cases of acute hepatitis B in 2001 and 2002 had occurred as a result of blood transfusion.

There is a referral system between public sector institutions and private providers of specialized health care services, including ultrasound and mammogram, angioplasty, MRI, renal dialysis, and laboratory work. These services are paid for on a fee-for-service basis.

For more than a decade, an independent living model of care has been in place for older persons, carried out through the local branch of Soroptimist International.

Health Promotion

The Ministry of Health focused on health promotion as an approach to attain and maintain health and wellness. The media took an active role in promoting healthy lifestyles by producing regular features on health and by collaborating with the Government, businesses, and NGOs to promote healthy lifestyles.

As part of the effort to build the personal health skills of Barbadians, health and family life topics were introduced into primary- and secondary-school curricula.

Priority was given to asthma education and training, environmental health, and mental health issues. Community mobilization and organization activities were implemented through a national "Healthy Lifestyle Extravaganza," which included health fairs, smoking cessation drives, and community education activities.

The Child Care Board continued its Child Abuse Awareness Program within primary schools. The program aims at keeping children safe from abuse and equipping them with necessary information that can assist them should they become victims. In 2004, 559 children from 13 primary schools participated.

Human Resources

Barbados continues to face the problem of emigration of health professionals, and this depletion of human resources is putting additional pressures on the delivery of quality care to the

population. The health sector continued to experience health human resource shortages, especially in the medical, nursing, physical therapy, occupational therapy, and allied health disciplines. As health professionals have continued to migrate to Europe and North America, the rate of training (especially of nurses) has not kept pace. Between 2002 and 2003, there was a dramatic reduction in registered nurses from 1,422 in 2002 to a mere 648 in 2003. Registered nursing assistants also declined, although not so precipitously, from 363 in 2002 to 307 in 2003.

The Barbados Community College continues to provide training for health professionals such as environmental health officers, medical record clerks, medical laboratory technicians, pharmacists, registered nurses, nursing assistants, and rehabilitation therapy technicians.

In 2004, two staff members of the Convention on the Elimination of All Forms of Discrimination Against Women participated in a workshop for government officials responsible for preparing reports to the Convention.

Health Supplies

The Barbados Drug Service procured essential drugs from a local pharmaceutical manufacturing company and, more extensively, from sources in the United States, Canada, South America, and Europe.

Supplies for medical and other health care purposes are generally supplied for the public sector through a Government central purchasing agency.

The Barbados Drug Service has entered into contract with private participating pharmacies to meet the prescription demands of persons older than 65 years; children under 16 years old; and persons suffering from hypertension, cancer, diabetes, asthma, and epilepsy. In fiscal year 2004/2005 there were more than one million prescriptions submitted by private participating pharmacies through the Special Benefit Service, at a cost to the Government of US\$ 11.7 million. This figure represented an 85% increase in prescription volume and a greater than twofold increase in expenditure compared to the figures in fiscal years 1993–1995.

Vaccines for the Expanded Programs on Immunization are purchased through the PAHO's Revolving Fund for Vaccine Procurement. Reagents for laboratory use and for diagnostic procedures are purchased through the main medical laboratory at Queen Elizabeth Hospital for distribution to other laboratories. Automatic and semiautomatic laboratory testing are in use with a new Elecsys Hitachi machine for hormone and cardiac testing.

Research and Technological Development in Health

The Barbados Eye Study ended in 2002. The Barbados Cancer Study, launched in March 2002, examined family connections and risk factors affecting cancers of the prostate and of the breast in the population. The study was a collaborative effort between

Demographic Transition Prompts Health Sector Changes

A declining birth rate and reductions in the incidences of communicable diseases and nutritional deficiencies have resulted in an increasingly older population with a longer life expectancy. To address these new challenges the Government has launched a Strategic Plan for Health that will be in effect through 2012, which provides for more effective health care for the country's aging population. To secure the Plan, the Ministry of Health has undertaken a reform of its health information system.

the State University of New York at Stony Brook (Coordinating Center), the University of the West Indies, the National Human Genome Research Institute, and the Ministry of Health. This comparative epidemiological study was designed to examine environmental and family/genetic risk factors for prostate cancer and breast cancer in Barbados. As a result of the study, a population-based cancer registry was established. Initially the registry only recorded breast and prostate cancer cases, but will eventually be expanded to include other cancers.

Health Sector Expenditures and Financing

The health sector allocation for fiscal year 2005–2006, less emoluments, was US\$ 122.4 million, compared to US\$ 121.35 million for fiscal year 2004–2005, for an overall increase of 0.7%. The bulk of this expenditure went to hospital services and primary health care. Expenditures for hospital services were estimated at US\$ 136.6 million for fiscal year 2005–2006, compared with US\$ 70.5 million in 2004–2005.

Expenditures on primary health services were estimated at US\$ 27.1 million in fiscal year 2005–2006, an increase of 10.8% from the US\$ 24.5 million figure for fiscal year 2004–2005. Further budgetary allocations included those to the pharmaceutical program, which received US\$ 17.2 million, or 14.0% of the total budget; to the HIV/AIDS prevention and control program, US\$ 4.5 million, or 3.6% of the budget; to direction and policy formulation, US\$ 4.4 million, or 3.5%; and to care for the disabled, US\$ 650,000, or 0.5% of the budget.

In addition to recurrent funding, the Government allocated US\$ 21.5 million for financing various projects within Queen Elizabeth Hospital; an additional US\$ 12.5 million loan was allotted to the hospital. Approximately US\$ 3.5 million in European Union funds have been earmarked for the development and expansion of the cardiac unit and angiographic suite. The European

Union also will provide US\$ 2.75 million for the development of the hospital's information system network.

Technical Cooperation and External Financing

Among the regional and international agencies providing technical cooperation are the Pan American Health Organization (PAHO), Caribbean Regional Drug Testing Laboratory (CRDTL), Caribbean Food and Nutrition Institute (CFNI), Caribbean Epidemiology Center (CAREC), Caribbean Environmental Health Institute (CEHI), the World Bank, the Inter-American Development Bank (IADB), and the European Development Fund. The Ninth European Development Fund program was launched in 2005. This program involves grant funds from the European Union in the amount of US\$ 12.5 million, to be executed over a four-year period. The primary objective was to facilitate the development of a comprehensive and integrated strategy that focuses on policies to benefit the poor, including providing fair financing.

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