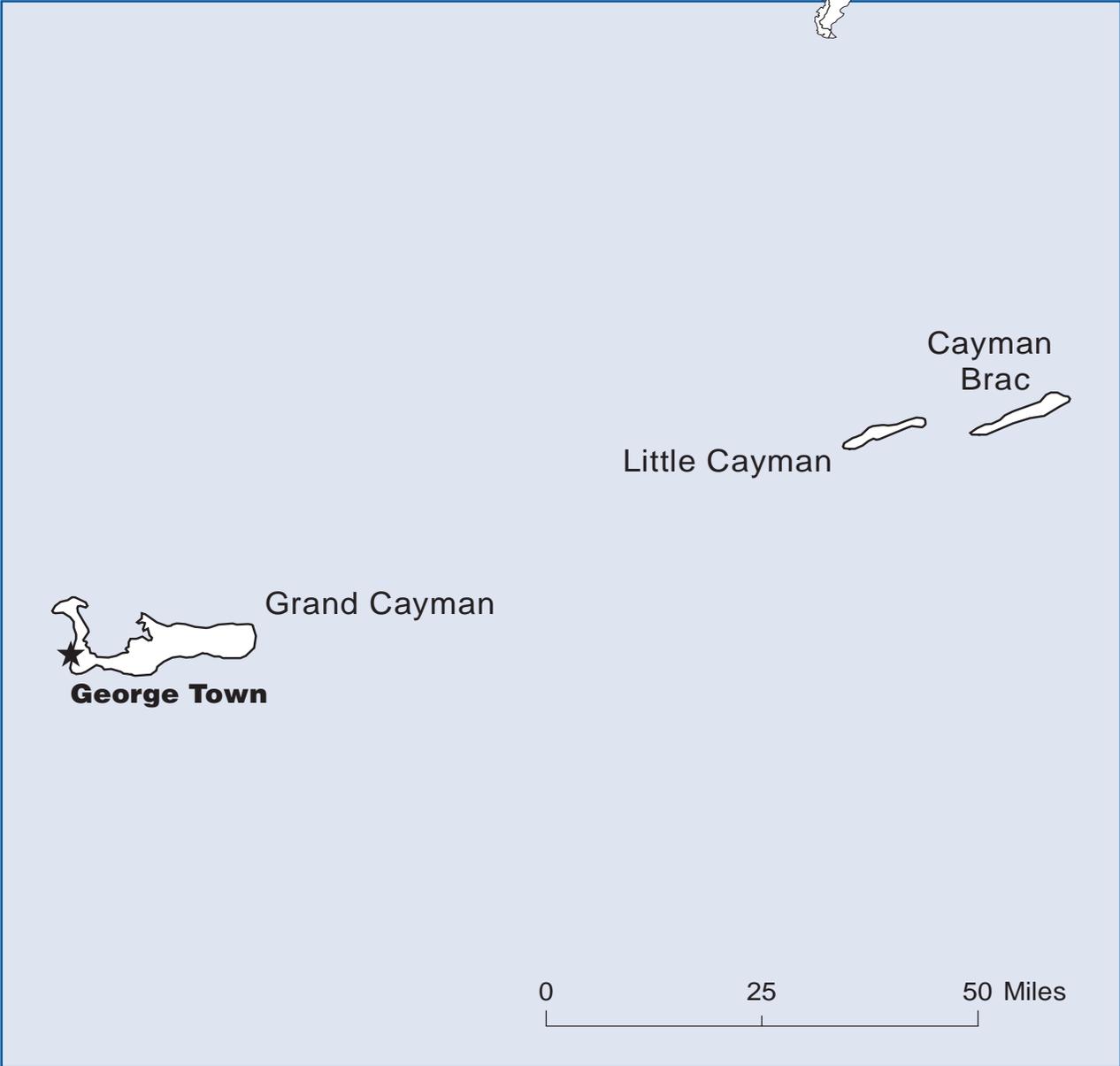


# CAYMAN ISLANDS



**T**he Cayman Islands, a British overseas territory, comprises the islands of Grand Cayman, Cayman Brac, and Little Cayman. The territory spans approximately 250 km<sup>2</sup> in the western Caribbean Sea, about 240 km south of Cuba and 290 km west of Jamaica. Grand Cayman is by far the most populous and largest island, with an area of 197 km<sup>2</sup>.

## GENERAL CONTEXT AND HEALTH DETERMINANTS

The two “sister islands” of Cayman Brac and Little Cayman are located about 145 km east of Grand Cayman and have areas of 36 km<sup>2</sup> and 26 km<sup>2</sup>, respectively. The capital, George Town, is located on Grand Cayman. All the islands are generally low-lying, with the exception of a massive limestone bluff that rises on Cayman Brac.

### Social, Political, and Economic Determinants

The Governor, who represents the Queen of the United Kingdom, heads the territorial government and presides over the Executive Council, which includes three official members and Ministers elected by the Legislative Assembly; Ministers delegate policy implementation and administrative matters to Permanent Secretaries. The Parliament has 15 seats, two of which are held by women.

The Cayman Islands are politically stable and economically strong. With an average income of around \$42,000, Caymanians enjoy the highest standard of living in the Caribbean. The islands print their own currency, the Cayman Islands Dollar (KYD), which is pegged to the U.S. dollar at a fixed rate of 1 KYD = 1.227 USD.

The GDP growth rate in 2002 was 5.3% and an estimated 1.7% in 2005. Economic growth is mainly fueled by the finance and tourism sectors, as the islands can receive as many as 10,000 visitors a day.

At year-end 2005, the population was estimated to be 52,466 (residents only, including those with work permits) compared to 40,200 in 2000. Of the total population, 50.2% is male and 49.8% female. The vast majority of the population resides on Grand Cayman, with a population of over 50,000. Cayman Brac is the second most populated with about 2,000 residents, followed by Little Cayman with around 200 permanent residents. The sharp increase in total population over the past five years is attributed to the rapid increase in the number of foreign work-permit holders and their dependents; although this influx has served to fill the gap left by a shortage of local workers, it has burdened the territory's services, including health care. The population growth rate for 2005 stood at 2.6%, an increase compared to the 2.1%

rate for 2001. In 2005, life expectancy at birth was 80.0 years (77.3 years for males and 82.6 years for females) and represented an increase over the 2002 figure of 79.2 years (76.4 years for males and 81.6 years for females). The crude birth rate in 2005 was 12.9 births per 1,000 population, compared with 13.5 births per 1,000 population in 2002.

The population comprises a mix of more than 100 nationalities. About half the population is of Caymanian descent; some 60% is of mixed race; and, of the remaining 40%, about half is Caucasian and half of African descent. The inhabitants are almost exclusively Christian, and the largest denominations are Presbyterian and Anglican.

With regard to some of the leading determinants of health, the adult literacy rate in 2005 was estimated at 99%, and schooling is free and compulsory for all children between the ages of 5 and 16; health care is provided free of charge to all schoolchildren, and all persons in Cayman have equal access to health care; approximately 95% of the population has access to safe piped water, and the remaining 5% have access to safe water provided by tanker trucks; public sewerage covers approximately 10% of the population, with the remaining 90% served by onsite wastewater treatment plants such as septic tanks, aerobic wastewater treatment plants, and cesspool onsite wastewater treatment plants.

### Demographics, Mortality, and Morbidity

A comparison of the population distribution between 1990 and 2005 shows an aging population (see Figure 1). In 2005, the population under 20 years of age comprised 3% less of the total population than in 1990, and the population in the 60 years and older age group comprised 3% more of the total population than in 1990.

All deaths in the Cayman Islands, whether of Caymanians or of work-permit holders, are registered. Deaths of residents average approximately 120 per year, and the annual crude death rate held steady from 2002 to 2005, fluctuating between 5.2 and 4.8 deaths per 1,000 population (mortality data of tourists are analyzed separately). The leading causes of death can be seen in Table 1. Ischemic heart disease, cerebrovascular diseases, and neoplasms are the three leading causes of death and account for 30.4% of all deaths. Patterns for causes of death in males and

females differ: disaggregating leading causes of mortality by gender shows that malignant neoplasms of the trachea/bronchus/lungs and the prostate are leading causes of death for males, and acute respiratory infections (influenza and pneumonia) along with malignant neoplasms of the breast are the leading causes of death for females. During the period 1994–2000, 90 deaths occurred due to external causes, which represents an annual average of 13 deaths (11% of total deaths). Leading external causes of death are road traffic accidents at 30 deaths (33.3%), accidental drowning at 20 (22.2%), homicides at 16 (17.8%), suicide at 5 (5.6%), undetermined intent at 4 (4.4%), house fire at 3 (3.3%), and all other accidents at 12 deaths (13.3%). The male-to-female ratio for external causes of death was 4 to 1, with a male-to-female ratio of 15 to 1 for homicides. It is worth noting that the territory is particularly vulnerable to hurricanes, and that in September 2004 Hurricane Ivan caused two deaths and an estimated US\$ 10 million in damages to the territory's infrastructure.

## HEALTH OF POPULATION GROUPS

### Children under 6 Years Old

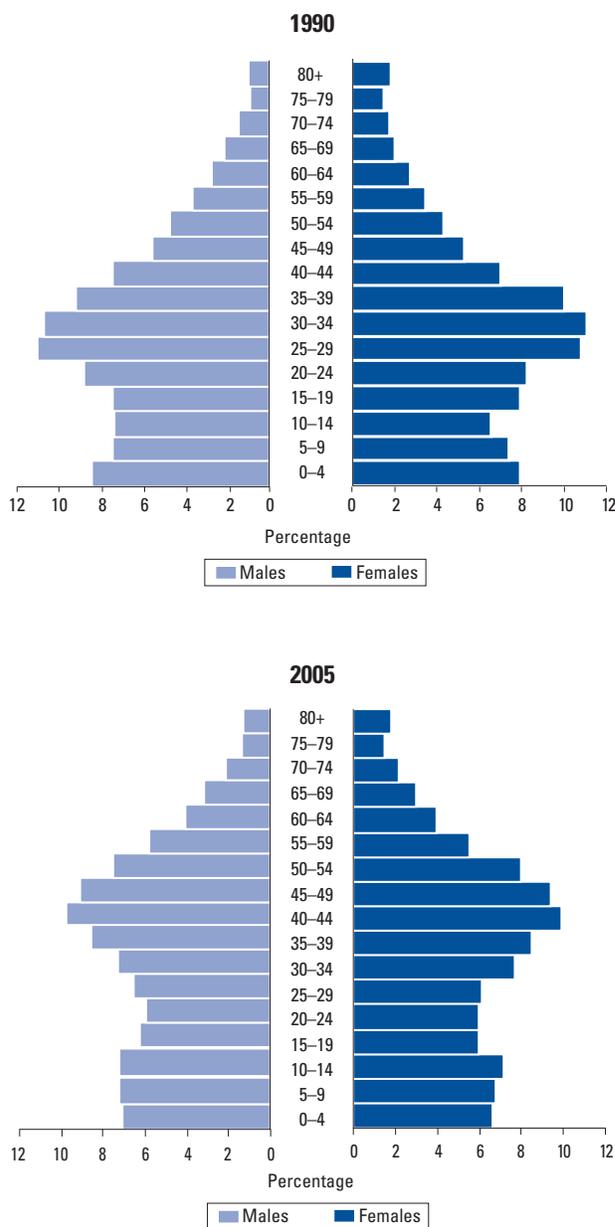
During the period 2002–2005, a total of 20 infants died, five of them in 2005. For the four-year period, the infant mortality rate was 7.9 deaths per 1,000 live births, the neonatal mortality rate was 5.1 deaths per 1,000 live births, the postneonatal death rate was 2.8 deaths per 1,000 live births, and the perinatal mortality rate was 13.9 per 1,000 births. The main causes of death were extreme prematurity, congenital abnormality, dysfunction of a diseased brain, and neonatal asphyxia. The proportion of newborns weighing less than 2,500 g at birth was 7% in 2005.

In the period 2002–2005, 22 deaths occurred in children under 5 years of age. Of total hospital discharges in 2002, 409 (10%) were of patients in the under 6 year age group. The five leading final diagnoses on discharge from the hospital in the under 6 year age group were diseases of the respiratory system

**TABLE 1. Leading causes of mortality, numbers, and percentage of total deaths, Cayman Islands, 1998–2000.**

Causes of death	No.	% of total deaths
Ischemic heart disease	68	18.1
Cerebrovascular diseases	24	6.4
Malignant neoplasms of trachea/bronchus/lung	22	5.9
Influenza and pneumonia	21	5.6
Diabetes	17	4.5
Malignant neoplasms of prostate	14	3.7
Heart failure and complications	13	3.5
Hypertensive disease	12	3.2
Land transport accidents	10	2.7

**FIGURE 1. Population distribution (%), by age and sex, Cayman Islands, 1990 and 2005.**



(34% of all final diagnoses for this age group); symptoms, signs, and abnormal clinical and laboratory findings (15%); intestinal infectious diseases (14%); diseases of the digestive system (12%); and injury, poisoning, and other external causes (7%). Of all discharges from the hospital in 2002, children under 6 years of age accounted for 35% of all asthma cases and 69% of all cases of respiratory conditions due to chemicals, gases, fumes, and vapors (including reactive airway dysfunction syndrome).

## Chronic Diseases and Sickle Cell Anemia

Ischemic heart disease, cerebrovascular diseases, and malignant neoplasms took the greatest toll in the Cayman Islands between 1998 and 2000—they were the three leading causes of death, accounting for 30% of all deaths. Sickle cell anemia follows closely. To help ease the burden from these diseases, the Government has stepped-up screening and follow-up for those affected with this disease.

### Children 6–10 Years Old

In 2002 in the 6–10-year age group, 174 children were discharged from the hospital, comprising 4.3% of total discharges. Leading final diagnoses for 6–10-year-olds discharged from the hospital included diseases of the respiratory system (27%); diseases of the digestive system (20%); injury, poisoning, and other external causes (16%); symptoms, signs, and abnormal clinical and laboratory findings (9%); and certain infectious and parasitic diseases (6%).

Immunization coverage of school-age children in 2005 for measles, mumps, and rubella (MMR) and diphtheria, tetanus, and pertussis (DTaP) or tetanus and diphtheria (TD) was 98%.

### Adolescents 11–14 and 15–19 Years Old

In 2002 there were 94 hospital admissions in the 11–14-year age group. The five leading causes of admission to the hospital of this group were injury, poisoning, and other external causes (24%); diseases of the digestive system (23%); diseases of the respiratory system (14%); diseases of the genitourinary system (7%); and symptoms, signs, and abnormal clinical and laboratory findings (6%).

In 2002, 67 adolescents 15–19 years of age were admitted to the hospital. Admissions of this group comprised complications of pregnancy, normal delivery, and cesarean sections (25.4%); injury, poisoning, and other external causes, with a 2:1 male-to-female ratio (20.9%); symptoms, signs, and abnormal clinical and laboratory findings (10.4%); disorders of the digestive system (7.5%); diseases of the respiratory system (7.5%); and mental disorders, of which all were females under 18 years (6.0%), including three cases of depressive episodes and one adjustment disorder. Of all births between 1995 and 2004, 2.4% were to women under 18 years, but the yearly percentage steadily declined from 4.1% in 1995 to 1.6% in 2004; during that 10-year period, only three pregnancies occurred in the <15-year age group—one each in 1996, 1997, and 1998 and none since 1999. To assist youth in making responsible decisions, the Life Skills program in schools offers family life education sessions. All adolescents graduating high school in 2005 were fully protected against tetanus.

### Adults 20–64 Years Old and 65 Years and Older

In 2002 patients in the 15–64-year age group accounted for 2,009 hospital discharges (49% of all discharges). Excluding 550 discharges for hospitalizations due to pregnancy, childbirth, and the puerperium (27%), 1,459 discharges were due to illness. The leading discharge diagnoses of persons in this age group were injury, poisoning, and other external causes at 251 (17%); diseases of the digestive system at 221 (15%); diseases of the genitourinary system at 167 (11%); diseases of the circulatory system at 147 (10%); and mental and behavior disorders at 100 (7%).

The proportion of women attended by trained personnel during pregnancy fluctuated very little from 2002 to 2005, when it stood at 98.6%. The proportion of women attending clinic during the first trimester of pregnancy increased from 45% in 2002 to 62% in 2005. In 2002 the cesarean section rate at the Cayman Islands Hospital was 8.2%. In 2004 the total fertility rate was 1.9 children per woman. Over the last 10 years only one maternal death occurred, in 2005.

According to the Health Services Authority (HSA), in 2002 there were 588 hospital discharges for those 65 years of age and older—46% of which were male and 54% female (14.4% of total discharges). The leading causes of 543 hospital discharges defined by cause in this age group were diseases of the circulatory system with 151 discharged patients (27.8%); diseases of the respiratory system with 78 (14.4%); diseases of the digestive system with 64 (11.8%); endocrine, nutritional, and metabolic disorders with 38 (7.0%); diseases of the genitourinary system with 35 (6.4%); injuries and other consequences of external causes with 33 (6.1%); diseases of the musculoskeletal system and connective tissue with 24 (4.4%); diseases of the eye with 16 (2.9%); and malignant neoplasms with 15 (2.8%). Half of the patients were admitted once; the remainder were admitted more than once, usually for the same condition.

### The Family

Females 15–49 years of age comprised 62% of the total female population. The number of households increased from 8,115 in

the 1989 census to 14,908 in the 1999 census, representing an average annual increase of 679 households. Single-parent households—those without a spouse or common law partner—increased from 951 to 1,425 in the same 10-year period, but as a percentage of total households dropped slightly from 11.7% to 9.6%. In 1999, the proportion of single-parent households with 1 or 2 children out of all such households increased to 83.5%, as compared to 78.6% in 1989, while the proportion of single-parent households with 4 or more children decreased from 10% in 1989 to 5.8% in 1999.

### Workers

Child labor does not exist in the Cayman Islands, as compulsory schooling precludes employment of children under 16 years of age. Prostitution is illegal, but in certain areas there is an illicit commercial sex trade; an HIV/AIDS strategic plan makes provision for educating and counseling those who work in that high-risk trade.

## HEALTH CONDITIONS AND PROBLEMS

### COMMUNICABLE DISEASES

#### Vector-borne Diseases

Three cases of **malaria** were reported in 2004, and one in 2005. One case of **dengue** fever was reported in 2004, and none in 2005.

#### Vaccine-preventable Diseases

During the period 2001–2005, no cases of **diphtheria**, **neonatal tetanus**, **pertussis**, **rubella**, or ***Haemophilus influenzae* type b** were reported. The last reported case of **polio** was in 1957, and of **measles** in 1991. The national immunization program includes the following vaccines: injectable polio, diphtheria, acellular pertussis, tetanus, *Haemophilus influenzae* type b, hepatitis B, MMR, varicella, and seasonal influenza; the varicella and pentavalent combination (DTaP/IPV/Hib) vaccines were introduced into the national schedule in 2000. Vaccination coverage of antigens administered from 2001 to 2005 ranged from 87% to 92%. In 2004, 92% of children had received the three-dose primary series of DPT, Hib, and polio vaccines; 87% had received the first dose of the MMR vaccine; 92% had received BCG; 77% had received three doses of the hepatitis B vaccine; and 81% had received the varicella vaccine. After the ravages of Hurricane Ivan in 2004, public health staff offered tetanus boosters to anyone who had not had a booster in the previous five years—about 15,000 doses, for a coverage of 40%; 85 cases were reported in 2004, and 33 in the first six months of 2005.

#### Infectious Intestinal Diseases

**Food-borne illnesses** and **gastroenteritis** continue to pose significant health problems. Flooding and limited water supplies due to Hurricane Ivan increased the incidence of gastroenteritis on the islands: 1,399 cases were reported to the Public Health Department in 2004. Cholera, typhoid, and hepatitis A are not endemic.

#### Chronic Communicable Diseases

The reported incidence of **tuberculosis** is very low, ranging from 0–4 new cases per annum and with one case reported in 2004. No case of tuberculosis has been reported in children for the past 20 years.

#### Acute Respiratory Infections

In 2004, 310 cases of **influenza** were reported. Of all hospital admissions 9% were due to diseases of the respiratory system; excluding asthma and respiratory neoplasms, 51% of admissions for all other respiratory diseases were due to acute respiratory infections. In 2004, 20 cases of asthma were admitted, 35% of which were children under 5 years of age.

#### HIV/AIDS and Sexually Transmitted Infections

From 1985, with the first reported case of AIDS, to mid-year 2005, 68 residents tested positive for HIV, including one new case in 2004. By mid-year 2005, 36 cases of AIDS had been reported, of which 25 (69%) had died. By September 2005, 34 persons were reported to have tested positive and were living with HIV/AIDS; 29.7% of those were between 25 and 39 years of age. An estimated 70% of HIV infection was transmitted via heterosexual contact; the next most common mode of transmission was by homosexual contact; and a small percentage was due to perinatal transmission and drug use. Illegal residents and foreigners seeking employment within the country are not included in these statistics—an important consideration given the impact that foreigners seeking employment have on the islands' HIV services. It is mandatory for those seeking work permits to be tested for HIV, and those individuals represent the largest category of people accessing HIV testing services. Mandatory testing also exists for antenatal clinic attendees, prisoners, prisoners' contact officers, and returning expatriates. The guidelines and procedures are in place for two prenatal screenings of women, and HIV-positive mothers are given AZT to prevent transmission of the infection to their infants. Between 2001 and 2005, 575 pregnant women were tested for HIV, and none of them tested positive. Two cases of mother-to-child transmission of HIV occurred between 1989 and 2005. In September 2005, 23 persons were receiving antiretroviral drugs.

Illicit intravenous drug abuse is not a problem in the Cayman Islands. No cases of HIV transmission through transfusion of blood and blood products or needle stick injuries have been reported.

## NONCOMMUNICABLE DISEASES

### Metabolic and Nutritional Diseases

Consistent with the recommendation of WHO, breast-feeding is encouraged as the best, and preferably exclusive, source of feeding for infants from birth to 6 months; moreover, all island hospitals observe the Code of Marketing of Breast Milk Substitutes. The Cayman Islands Hospital complies with many criteria of the WHO/UNICEF Baby-Friendly Hospital Initiative and is working towards certification as a “baby-friendly hospital.” A 2005 study revealed that 94% of mothers started breast-feeding, 76% continued to breast-feed when their infants were six weeks of age, but that as children grew older and mothers returned to work the proportion breast-feeding dropped to 60% at four months and 35% at six months.

The rate of newborns at **low-birthweight** (< 2500 g) has held steady at 7%.

In 2001, the Health Services Authority Nutrition Services, with the assistance of the Caribbean Food and Nutrition Institute, conducted a survey on local young child feeding practices. Based in part on that survey and a follow-up workshop, a young child feeding policy was developed in 2003. Body mass index (BMI) assessments were conducted in 2003–2004 of children 10–13 and 3–5 years of age. The assessments found that 24.6% of schoolchildren aged 10–13 years were overweight and 14.7% were at risk of being overweight (compared to 20.9% overweight and 16.3% at risk in 1997–1998); that is, 39.3% of children 10–13 years were already observed to have a serious health risk factor. The assessments further showed that, of children 3–5 years old, 14.1% were overweight and 13.1% were at risk for overweight—indications of an early onset of abnormal weight gain.

Pregnant women and preschoolers are routinely provided with vitamin supplements.

### Cardiovascular Diseases

In the period 1998–2000, **ischemic heart disease** was the leading cause of death, accounting for 68 deaths or 18.1% of all deaths defined by cause.

### Malignant Neoplasms

The number of cases of malignant neoplasms reported annually from 2001 to 2005 ranged from 33 to 49, with an annual average of 41. In the period 1998–2000, malignant neoplasms of the trachea/bronchus/lung were the third leading cause of mortality, accounting for 22 deaths; malignant neoplasms of the prostate were the sixth leading cause, accounting for 14 deaths; among females, seven deaths occurred due to malignant neoplasms of the breast.

## OTHER HEALTH PROBLEMS OR ISSUES

### Disasters

As mentioned above, the territory is prone to hurricanes, and in September 2004 Hurricane Ivan proved particularly destructive. HAS opened district medical shelters to house special-needs patients and nearby residents and deployed physicians, nurses, and other health care workers, as well as ambulances, to those shelters. Cayman Islands Hospital provided shelter, food, and potable water to almost 1,100 persons for a week, greatly depleting hospital resources. Some 80% of the health care workers had moderate-to-major damage to their houses.

### Mental Health and Addictions

In 2002, 131 hospital discharges for mental and behavior disorders were related to: psychoactive substance use (42 discharges or 32.1%); mood affective disorders (likewise 42 or 32.1%); schizophrenia and delusional disorders (24 or 18.3%); neurotic, stress-related, and somatoform disorders (12 or 9.2%); and other disorders such as adult personality, physiological development and emotional disorder, and organic, including symptomatic, mental disorders (5 or 3.8%).

A drug and alcohol survey of 985 households, carried out in 2000, found that alcohol and tobacco are by far the most commonly used substances, with 61.2% and 46.6% of respondents reporting having ever used these substances, respectively, over their lifetimes. Men were significantly more likely to have consumed alcohol over the previous 12 months (68.5%) than were women (44.8%). The highest percentage of heavy drinking (an average of four or more drinks in one drinking session) was found among 20–29-year-olds (41.7%). Smoking among men over the past 12 months exceeded that among women, and the 20–29-year-olds were the most likely to smoke. The percentage of persons using marijuana over the past 12 months was small (3.5%), as was the use of other illicit or nonmedical drugs; marijuana use is most prevalent among persons under 30 years old and, more specifically, in the 15–19 age group. About 30% of the population was using at least one form of prescription drug at the time of the survey. Half of respondents using a cough syrup or painkiller containing codeine (15% of the adult population) did so without the advice of a physician or used more than the physician advised; barbiturates were used by 5% of the population, and about one-fifth reported at least some use without a prescription.

## RESPONSE OF THE HEALTH SECTOR

### Health Policies, Plans, Strategies, and Programs

The Health Services Authority initiated development of a five-year strategic plan, the six key components of which are: design of an efficient organizational structure for HAS; implementation

of steps to ensure the financial viability of HAS; implementation of measures to ensure that health care delivery meets or exceeds internationally accepted standards; creation of an environment in which patients and families are encouraged to participate actively in achieving wellness; improvement in external communication to gain public confidence and support to achieve the mission and objectives of HAS; and establishment of an environment that ensures internal communication, fosters job satisfaction, and encourages staff commitment to improve productivity and customer service.

Among initiatives in health legislation and regulation, the national breast-feeding policy was updated in 2001 to include provisions of the new WHO standard of exclusive breast-feeding. Although the Convention of the Elimination of Discrimination Against Women (CEDAW) was ratified by the United Kingdom, it has not yet been extended to the Cayman Islands. No legislation deals with family planning and reproduction. With regard to sexual rights, the legal age of consent is 16 for both males and females. Abortion is prohibited, the only exception permitted by law being when abortion is necessary to preserve the life of the mother. The Health Insurance Law makes it mandatory for everyone to have health insurance coverage, thereby ensuring that it is extended to children. Various sections of the Health Services Law dealing with health service fees ensure the right of children to basic health care services and state that a Caymanian and spouse do not have to pay fees for antenatal or contraceptive services, including those of clinics, devices, and drugs provided at health care facilities.

The Health Practice Commission has responsibility for the inspection and certification of health care facilities and the registration and licensing of health professionals through the health practice councils. It was set up under the Health Practice Law (2002), which defines “health care facilities” as premises where a registered practitioner provides health services: clinical examination, nursing care, dental care, provision of blood and blood products, diagnostic procedures, provision of medical and surgical services, and provision of pharmaceuticals, advice, or counseling. The Commission also advises the Director of Planning on applications for development of health care facilities and the Minister of Health Services on policy relating to health practice, including determining the types of health professions that should be permitted to work on the islands; and it provides guidance to the Health Practice Councils and monitors their performance. Health professionals are regulated by the Health Practice Councils, the Medical and Dental Council, the Nursing and Midwifery Council, the Pharmacy Council, and the Council for Professions Allied with Medicine (e.g., chiropractors, mental health counselors, opticians, optometrists, and radiographers).

### Organization of the Health System

The Ministry of Health and Human Services oversees and regulates health care services. Health care is provided by both the

Health Services Authority, a Crown corporation, and the private sector. Cayman Islands Hospital is located in the capital of George Town, and health centers, which provide all primary care services, are located in various districts; full-time nurses are present at all health centers, and the frequency of physicians’ visits varies depending on a community’s size. Given the islands’ small population and area, the management of health services is centralized, but senior managers have decision-making authority in accordance with general policies and guidelines.

The privately owned and operated Chrissie Tomlinson Memorial Hospital is open to all visitors and residents. The hospital includes an outpatient department, two major operating rooms, a maternity ward, an intensive care unit, and a pharmacy; it offers the following services: urgent care, computerized axial tomography scanning, radiology, ultrasound, mammography, magnetic resonance imaging, nuclear scanning, laboratory, physiotherapy, endoscopy, physical therapy, occupational therapy, and ambulatory surgery. In addition, several dental practices are available, including a new private dental clinic, Cayman Dental Services, in George Town with resident dental surgeon/specialists on call 24 hours/day.

The Health Insurance Commission (HIC) monitors the performance of the health insurance industry and serves five major functions: advising the minister responsible for health insurance on any matter relating to health insurance; requiring every health care facility and registered health practitioner to file with the HIC annually and whenever they change their fees for services provided; investigating and settling disputed claims to health benefits and answering questions about the provision of health insurance; providing advice to the Governor-in-Cabinet on premium rates charged by health insurers; and managing the segregated insurance fund, including the collection of monies on behalf of the government from premiums charged by approved insurers to cover medical costs for indigent persons. CINICO is a government-owned insurance company formed to provide health insurance coverage to civil servants (employees and pensioners) and other residents who have had difficulty obtaining coverage through their employer or from the private insurance market. According to HIC, in 2006 59% of the population was covered by private insurance, 24% was covered by CINICO, and 17% was not covered.

### PUBLIC HEALTH SERVICES

The Health Services Authority is governed by a 15-member Board of Directors that sets broad policies for the Authority; its day-to-day operations are managed by a Chief Executive Officer and a team of senior managers.

Prominent among health promotion activities is Breast-feeding Awareness Week, observed every year in August. A breast-feeding support group is actively involved in weekly breast-feeding clinics at the Women’s Health Center, in school education programs,

in a young parents program, and in workplaces for mothers who are returning to work. Instruction on healthy eating during pregnancy and lactation and on infant feeding (from birth to 1 year) is offered free of charge through prenatal education classes.

The Department of Environmental Health works closely with the Public Health Department to conduct field investigations of food-borne illnesses and similar suspected or confirmed disease outbreaks. Both departments also offer health awareness training to barbers, beauty parlor operators, cosmetologists, and those doing tattooing and body piercing; training focuses on specific diseases, such as skin infections and blood-borne pathogens, general health, and sanitation.

An active surveillance system is in place for collecting notifiable disease data; a nurse epidemiologist visits the hospital several times a week to identify any communicable disease occurrences. An epidemiological team set up in 2000 and comprised of representatives from the Environmental Health and the Public Health departments and the Cayman Islands Hospital Laboratory, which serves as the territory's public health laboratory, regularly assesses the epidemiological situation; staff from the Veterinary Department, the Mosquito Research and Control Unit, and other physicians are consulted as the need arises. In addition, a new information system has been set up to render health care delivery more efficient and patient centered, while enabling sound financial management through adequate capturing of charges and relevant statistical information.

The Water Authority, a statutory body of the Government, is charged with providing and implementing the Cayman Islands' water and sewage infrastructure and protecting its water resources. In Grand Cayman, the authority supplies water to the district of George Town and eastward into the village of East End. A private company holds a government franchise to provide piped water supplies to the West Bay Beach area and the district of West Bay. The Water Authority operates a small piped water supply system in Cayman Brac to serve a few customers. Potable water is provided via water tankers to customers not on the piped system. A private operation has been granted a government franchise to provide piped water to a very limited area of Little Cayman Island. Water quality is monitored internally by the companies and externally by the Department of Environmental Health.

In addition, the Water Authority operates a sewerage system that provides services to the tourist hotel areas of Grand Cayman. All other sewage treatment and disposal is through septic tanks with deep-well injection or soak-away fields. Septic tank collection services are available through private companies, and the waste is treated at the Authority's wastewater treatment plant. Adequate excreta disposal facilities cover 99.5% of the population.

Residential solid waste is collected twice a week in Grand Cayman and three times a week in Cayman Brac and Little Cayman. Commercial collection is carried out at least on a weekly basis, with restaurants having daily collections. All three islands have sanitary, government-managed landfills—the only legal disposal

sites in the territory. According to a 2005 PAHO report on the regional evaluation of municipal solid waste management in Latin America and the Caribbean, 57.7 tons of solid waste is generated by the Cayman population daily. Such a quantity of waste emphasizes the importance of proper disposal techniques, without which the risk of leptospirosis, hantavirus, and other rodent-borne diseases, as well as water and air pollution, multiplies.

The Environmental Health Laboratory is equipped to analyze and monitor food quality, and a program to monitor ready-to-eat foods is in place at selected food establishments. Based on a financial evaluation, the Social Services Department provides financial assistance to obtain food to those who are economically deprived.

### Individual Care Services

The Health Services Authority provides patient care through the Cayman Islands Hospital and Faith Hospital on Cayman Brac. The 125-bed Cayman Islands Hospital is the principal health care facility, with accident and emergency services, a wide range of medical and surgical services, a critical care unit, and pharmacy and laboratory services (including a forensic unit). Faith Hospital, an 18-bed facility, serves the residents of Cayman Brac and Little Cayman and provides primary, basic secondary, and emergency care; it also has an inpatient unit, an operating theater, a maternity unit, an accident and emergency department, outpatient clinics, and a public health department. In Little Cayman, clinics are conducted throughout the week by a registered nurse and are complemented by a weekly physician visit. The resident nurse also makes home visits and, together with a paramedic, provides pre-hospital care service including 24-hour emergency care and transport service for the residents in Cayman Brac. Primary health care is offered at four district health centers in Grand Cayman and at another in Little Cayman. Dental and eye care services are offered at the health service complex in Grand Cayman.

Radiological and laboratory facilities are available in all public and private hospitals. There is a central blood bank in Grand Cayman and a collecting center at Faith Hospital, which performs the immuno-hematology testing for units collected at their site, while all spectrum-analyzer screens are performed at the Cayman Island Health Services Pathology Laboratory. Procedures are in place for the collection of autologous and therapeutic units. All units collected are screened for HIV, hepatitis B, hepatitis C, and syphilis. The donor pool is small and does not support the production of random platelets, making it necessary to import platelets when requested. Blood is also imported in emergency cases. Donations ranged from 710 in 2001 to 864 in 2005.

The primary objective of the school health program is to promote health and wellness and to facilitate health education for all levels of students. School health services are made available to all students regardless of race, gender, or nationality. Schools are

required to conduct health screening, including vision and hearing, problem identification, and immunization; all public schools have a resident or visiting school nurse to offer those services, and private schools are also offered health checks and the updating of immunizations.

The Health Services Authority provides a comprehensive newborn screening program at both the Cayman Islands Hospital and Faith Hospital that covers over 50 inherited disorders, identifies infants at risk, and establishes early diagnosis and treatment. Pregnant women are offered testing for sickle cell disorder as well as for other disorders if their family history so indicates; they also receive genetic counseling and follow-up recommendations regarding tests for partners, other children, and the like. A school health coordinator, public health nurse, and genetics coordinator are on a multidisciplinary committee of an early intervention program that focuses on children 0–5 years of age who are at risk, are developmentally delayed, or have specific disorders. If a child is suspected of having a genetic disorder, the physician can order genetic tests and the parents can receive pre-test counseling. The Lighthouse School has approximately 60 children with special needs, including cerebral palsy, autism, Down syndrome, and various learning disabilities. A school nurse from the Public Health Department visits the school twice weekly to provide immunization coverage and to attend to chronic and acute problems. A general practitioner and a genetic coordinator perform annual physical examinations on the students, making referrals as needed to specialists. The Public Health Department offers a monthly pediatric genetics clinic for persons with known disorders as well as for those with suspected disorders who need evaluation and testing. As part of genetic counseling, pedigrees are drawn on persons with known genetic traits or disorders. Public awareness talks aim to make adolescents aware of certain disorders with an historically high incidence due to the isolation, and consequential consanguinity, of the Cayman Islands population over several hundred years; the incidence of disorders has decreased greatly as the islands have become a multinational community.

A no-tolerance approach to domestic violence prevails throughout the territory, which has a number of agencies that fight domestic violence: the Royal Cayman Islands Police Service, which has a family support unit that is responsible for the investigation of cases; the women's resource center, which educates and informs the public on issues relevant to women and the family; and the Cayman Islands Crisis Center, established to provide a safe home for the victims of domestic violence—mainly women and children. Annual reports of the Royal Cayman Islands Police Service for 2000 and 2002 indicate an increase in domestic violence cases from 917 to 1,517; some of that increase is real, while some of it may be due to improved reporting procedures.

The Mental Health Department provides comprehensive psychiatric and psychological services to adults, children, and geri-

atric patients. Outpatient clinic services, with two psychologists, see adults, children, and adolescents in all the districts and sister islands, with daily outpatient clinics and emergency coverage 24 hours/day in George Town; disorders treated include schizophrenia, depression, anxiety disorders, dual diagnosis disorders, and developmental disorders with behavioral features. Monthly clinic services are offered to prisons and consultations are provided to the police. An eight-bed acute psychiatric inpatient unit, staffed with psychiatric nurses and an occupational therapist, provides day hospital services. Two community nurses provide community outreach, follow-up, and treatment for chronic patients. In addition, detoxification services in conjunction with substance abuse services are offered. Schools are supported by psychologists who offer educational testing and therapy interventions.

### Health Supplies

As no drugs or other medical supplies are manufactured locally, all drugs, reagents, syringes, needles, and equipment are imported; any such supplies that have been approved in the United States or the United Kingdom are automatically approved for use in the Islands (any other drugs or medical equipment must be approved by the Health Practitioners' Board). Vaccines are procured through the Revolving Fund operated by the Pan American Health Organization. The Health Services Formulary includes all essential drugs.

### Human Resources

In 2004 the following health workers were registered: 74 doctors, half of whom worked in private practice; 18 dentists, two-thirds of whom worked in private practice; 226 nurses, one-sixth of whom were in private practice; and 236 other health care workers.

### Health Sector Expenditures and Financing

The budget of the Health Services Authority increased steadily from US\$ 46.8 million in 2000 to US\$ 54.9 million in fiscal year 2003–2004, US\$ 62.1 million in 2004–2005, US\$ 71.9 million in 2005–2006, and US\$ 72.3 million in 2006–2007. The steep increase in 2005–2006, the year following Hurricane Ivan, relates to subsequent reconstruction efforts. On average, the health budget represents 12.5% of the Government's budget (the range in recent years has been from 11.4% to 14.5%). Data on private sector financing are not available.

PAHO, CAREC, and CFNI provide training through fellowships and workshops—support that amounts to US\$ 25,000/year. The Cayman Islands receives no external funding for health care delivery.

