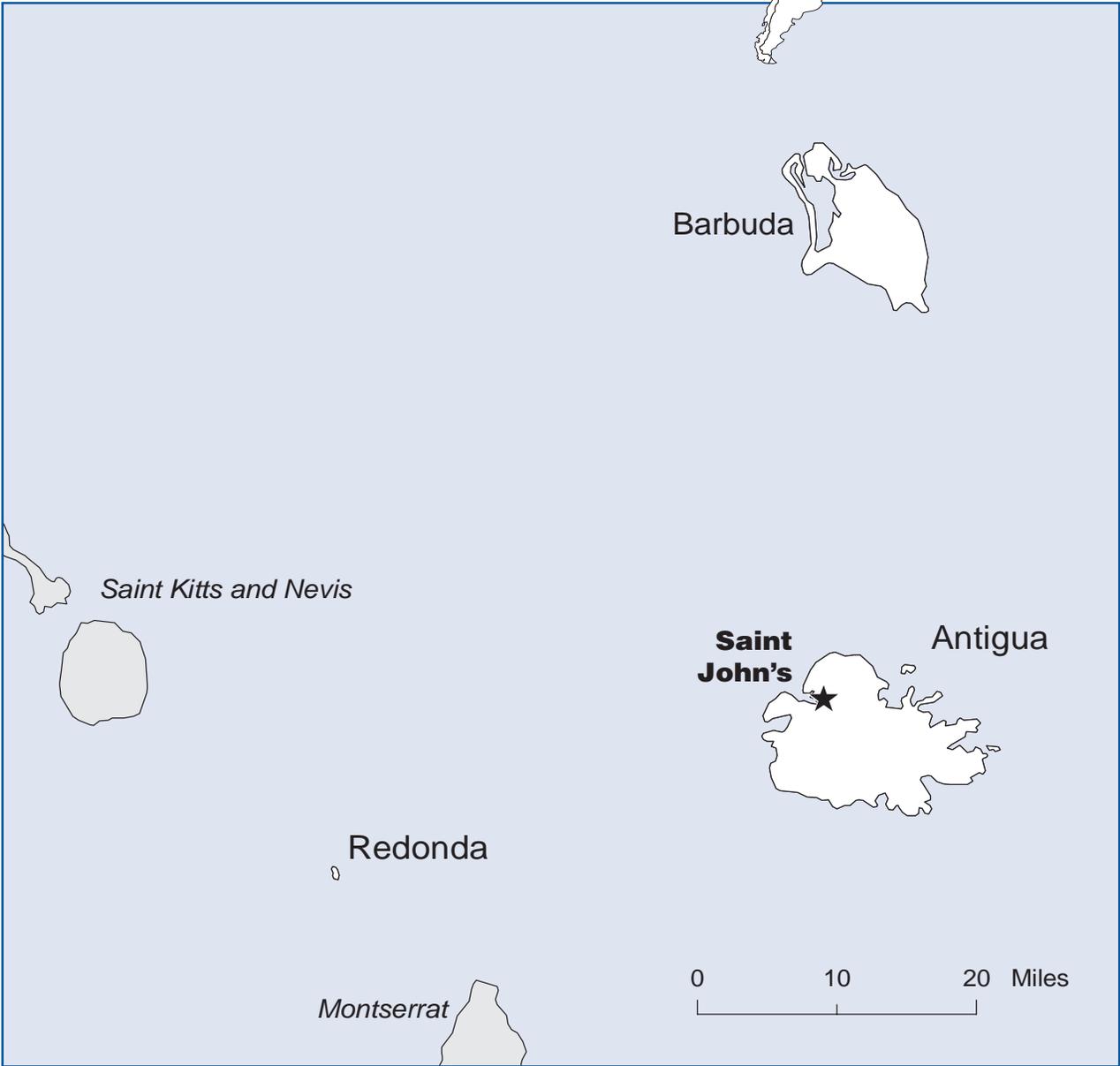


# ANTIGUA AND BARBUDA



**T**he nation of Antigua and Barbuda includes the islands of Antigua, Barbuda, and the small uninhabited rocky island of Redonda, which lie at the center of the Eastern Caribbean's Leeward Islands. The country's total area is approximately 440 km<sup>2</sup>, with Antigua measuring 280 km<sup>2</sup> and Barbuda, 160 km<sup>2</sup>; Redonda measures 1.6 km<sup>2</sup>.

## GENERAL CONTEXT AND HEALTH DETERMINANTS

Antigua, a volcanic-origin island, has rolling limestone hills and valleys to the north and east, flat central plains, and mountainous terrain to the southwest; the island's highest point is Boggy Peak, which rises 402 m. Barbuda is made up mainly of limestone and is relatively flat. Antigua boasts having 365 beaches, one for each day of the year.

Without any high mountains and after deliberate cutting down of trees to plant sugarcane during the colonial era, both islands have very low rainfall, approximately 40–42 inches annually. Droughts occur every 3 to 7 years, with the last one recorded in 2001, when only 30.9 inches of rain was reported. There are few streams and no rivers. The low rainfall requires that Antigua and Barbuda rely heavily on desalination plants for its water supply.

### Social, Political, and Economic Determinants

Antigua and Barbuda became independent from Great Britain in 1981, and the country developed its own system of government based on the Westminster model. It is governed by an elected Parliament with majority and opposition parties. The island is divided into 17 administrative constituencies, including Barbuda. Executive authority is vested in a Cabinet, headed by a Prime Minister, and comprises 18 ministers. Barbuda's affairs are administered mainly by the Barbuda Council, which was set up by an Act of Parliament in 1976. The Council consists of 11 members and 2 ex-officio members.

In 2003, the economy grew by 3.2%, compared with 2.1% growth in 2002 and 1.5% in 2001. Per capita gross domestic product (GDP) at market prices rose from EC\$ 24,859 in 2001 to EC\$ 27,575 in 2004. Nominal GDP at market prices (in millions of EC\$) was EC\$ 1,918 in 2001, EC\$ 1,938 in 2002, EC\$ 2,036 in 2003, EC\$ 2,210 in 2004, and EC\$ 2,362 in 2005.

The economy depends heavily on tourism for foreign exchange, employment, and government revenue. Following years of decline, tourism showed signs of recovery, and in 2002 tourism-related activities grew by 2.1%, following reductions of 7.6% and 0.9% in 2001 and 2000, respectively. In 2001–2005,

tourism accounted for about 12% of the GDP. In 2005, tourism grew by 7% reflecting the impact of the English cricket tour, as well as increased air transportation from the United States and the United Kingdom.

According to a 2006 United Nations report, the expansion in the tourist industry in 2002 was reflected in the number of stay over visitors, which increased by 1.7% following a 3.7% drop in 2001. The increase in cruise-ship passenger arrivals stimulated an upsurge in tourist-related activities (hotel occupancy and use of restaurants, for example) and contributed largely to the marginal increase in economic growth. It is estimated that the tourism sector employs approximately 25% of the active labor force, accounting for about 85% of the foreign exchange earnings.

There was a 2% increase in agricultural output in 2003, despite a reduction in crop production caused by an extended dry period in the first half of that year. The manufacturing sector rose by 4% in 2003—the production of beverages, construction materials, and furniture for domestic consumption accounted for this growth. Offshore financial services were a key economic diversification strategy. To attract offshore businesses, a 50-year tax exemption is applied to most forms of dividend, interest, and royalty income paid by and to foreign investors. Efforts to regulate the sector resulted in a drop in the number of registered offshore banks. Other major contributors to the economy include construction, wholesale trade, retail trade, and government services.

The International Monetary Fund Interim Index indicated that the inflation rate was near zero in 2000. In 2004, real economic output grew by 5.2%. This positive level of growth was mainly due to robust economic activity in tourism and related services, transportation services, and banking and insurance services. Among the sources of economic growth for 2005 was the continued expansion of construction, banking, insurance, and manufacturing sectors. In 2005, the government instituted a personal income tax system to ensure improvement in the nation's economic situation.

The total adult literacy rate in 2005 was 88.5% (88% for males and 90% for females). Education is free and compulsory for ages 5 to 16 years old. The quality of tertiary level education continued to improve. In 2000, the School of Nursing and the School of Pharmacy were integrated into the Antigua State College. The

local center for the University of the West Indies, an institution jointly operated by the English-speaking Caribbean governments, provided continuing education. The American University of Antigua and Barbuda College of Medicine, which opened in 2003, prepares students for the United States Medical Licensing Examination (USMLE) and provides a foundation for graduate studies. The university is required to offer a small number of scholarships to Antiguan students. In 2003, the Antigua and Barbuda Hospitality Institute, a public institution providing training for the hotel and restaurant industry, was set up. The Antigua and Barbuda Institute of Continuing Education was established in September 2005 through a merger of the Youth Skills Training Project, the Evening Institute, and the Golden Opportunity Program. The Institute, whose mission is to enhance education and training of adults to ready them for participation in the labor force, encompasses the Division of Continuing Education, the Division of General Education, and the Division of Industry and Commerce.

According to the 2001 Population and Housing Census, there were 36,233 persons employed in the country in 2000. The hotel and restaurant industry had the most employed persons, 5,081, or 14% of all employed persons. There were 4,846 persons, or 13.4% of the labor force, employed in wholesale and retail trade; 4,376, or 12.2%, in public administration and defense; 3,122, or 8.6%, in construction activities; and 2,808, or 7.7%, in transport, storage, and communication. Males (18,199) slightly outnumbered females (18,046) in the labor force. The percentage of working-age persons (15–24 years old) in the population increased from 61.3% in 2002 to 64.8% in 2005.

Antigua's and Barbuda's susceptibility to drought, coupled with an unreliable water supply, require residents to collect and store potable water in cisterns, drums, and tanks during the rainy season. These practices encourage mosquito breeding, which with it accompanying health problems. Moreover, the unreliable water supply endangers hygiene and increases vulnerability to water-borne diseases. The 2001 Population and Housing Census showed that of 20,437 households, 75% had household piped water connections. The remaining households relied on standpipes, wells, water tanks, or unpiped private catchments to get their water. Flush toilets were linked to a sewer system in only 2.4% of the households; 70.2% had flush toilets linked to septic systems; 25.3% had pit latrines; and 2.1% had unknown types of toilet facilities.

In 2005, Antigua and Barbuda produced 83,988,429 kg of solid waste, including waste from cruise ships (634,720 kg, or 0.76%). Most of the collected waste was disposed of at the Cook's landfill. A site in Saint Peter parish is used sparingly to dispose of special waste, such as expired pharmaceuticals, hazardous chemicals, and lead acid batteries. In 2005, a state-of-the-art sanitary landfill facility was constructed at Plantation in Barbuda.

The government is aware of the hazards associated with unsanitary food handling conditions, especially by street vendors during annual celebrations when the country attracts large num-

bers of visitors. In the years between 2001 and 2005, there were 195, 209, 243, 244, and 210 annually reported cases of food-borne diseases, respectively.

Antigua and Barbuda can experience hurricanes from June to November. There were no hurricanes or flood-related problems in 2001–2005.

### Demographics, Mortality, and Morbidity

Mid-year revised estimates for 2001–2005 showed a steady rise in the size of the population, from 76,886 in 2001 (36,109 males and 40,777 females) to 82,786 in 2005 (see Figure 1). In 2001, there were 16,397 immigrants in Antigua and Barbuda, representing 21.3% of the population. Most came from Guyana (5,410, or 7.0% of the total population), Dominica (3,966, or 5.2%), Jamaica (3,335, or 4.3%), United States of America (2,194, or 2.9%), and the Dominican Republic (1,492, or 1.9%). Antigua and Barbuda attract many migrants looking for work. And due to the steady inflow of immigrants, measures must be put in place for managing this population.

The population growth rate was 1.9% in 2002 and 2003; it was 2.0% and 4.5% in 2004 and 2005, respectively. The estimated resident population for 2010 is projected to be 90,801 (approximately 42,642 males and 48,159 females).

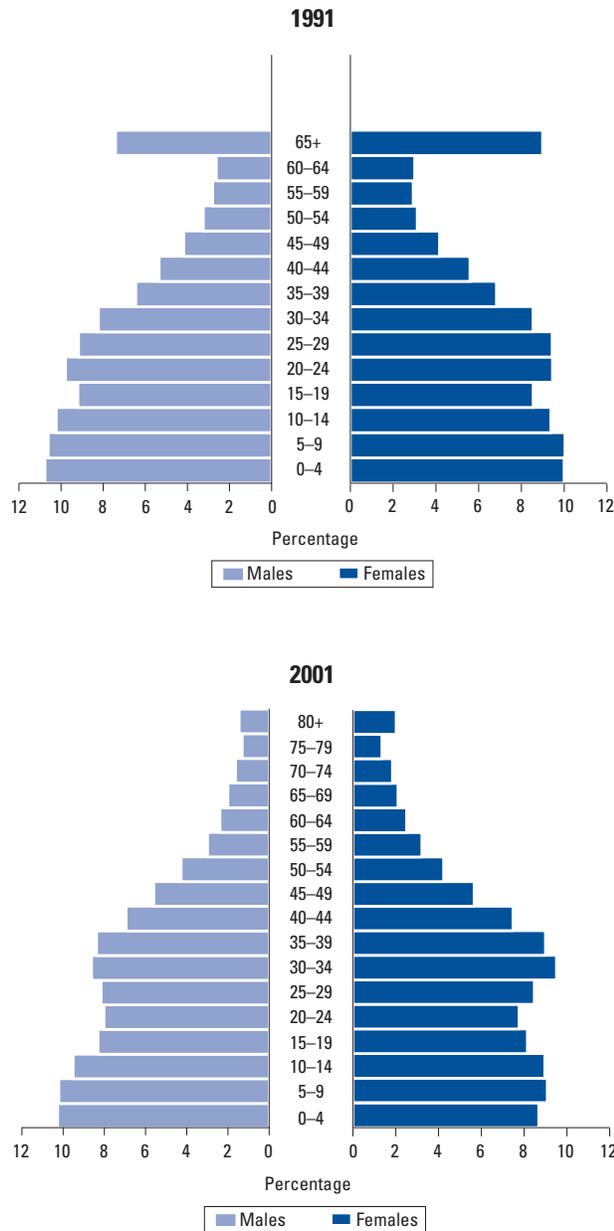
The population lives in six parishes: Saint John, Saint George, Saint Peter, Saint Phillip, Saint Paul, and Saint Mary. Saint John's, the capital, is divided into two major population areas: St. John's City, home to 32% of the population, and St. John's Rural, with 27%. Barbuda's population is 1,325 persons (2% of the total population), representing a slight increase from the figure of 1,252 in the 1990–1991 census.

The population density was 175 inhabitants per km<sup>2</sup> in 2002 and 188 inhabitants per km<sup>2</sup> in 2005. In 2005, the population density of Antigua was 291 persons per km<sup>2</sup> and the population density of Barbuda was 8 persons per km<sup>2</sup>.

In 2005, life expectancy at birth was 71.9 years (69.5 for males and 74.4 for females). The crude birth rate per 1,000 population averaged 15.7 between 2002 and 2004, decreasing to 14.7 in 2005. The crude death rate per 1,000 population was 5.8 (444 deaths), 5.8 (454 deaths), 6.4 (516 deaths), and 5.9 (485 deaths) for the years between 2002 and 2005. The infant mortality rate decreased from 22 infant deaths per 1,000 live births in 2004 to 16 in 2005. This decrease is attributed to improved prenatal and child care services. Fertility rates were 61.6, 62.6, 58.6, and 55.1 births per 1,000 females aged 15–49 years for the years between 2002 and 2005. There were no reported maternal deaths in 2002–2005. The dependency ratio was 38.7% from 2002 to 2003 and 35.1% from 2004 to 2005.

An analysis of the health situation and trends in 2001–2005 showed that noncommunicable diseases, such as malignant neoplasms, heart disease, diabetes mellitus, hypertensive disease, and cerebrovascular disease, and accidental and intentional injuries were among the leading causes of morbidity and mortality.

**FIGURE 1. Population structure, by age and sex, Antigua and Barbuda, 1991 and 2001.**



Certain conditions originating in the perinatal period was among the leading causes of mortality among children.

The five leading communicable diseases in 2002 were acute respiratory tract infections, gastroenteritis, ciguatera poisoning, chickenpox, and food-borne illness. In 2003, they were acute respiratory infections, gastroenteritis, influenza, ciguatera poisoning, and food-borne illness. In 2001–2005, there were 230 re-

ported cases of scabies. There were also 725 cases of influenza reported between 2001 and 2003.

In 2002, there were 444 deaths, 431 of which were defined by cause. The ten leading causes of death for the general population in 2002 were malignant neoplasms, with 77 deaths, or 17.9% of total deaths defined by cause; heart diseases, with 68, or 15.8%; diabetes mellitus, with 52, or 12.1%; hypertensive diseases, with 38, or 8.8%; cerebrovascular diseases, with 37, or 8.6%; accidental and intentional injuries, with 25, or 5.8%; diseases of the digestive system, with 24, or 5.6%; diseases of the respiratory system, with 22, or 5.1%; certain conditions originating in the perinatal period, with 18, or 4.2%; and HIV/AIDS, with 9, or 2.1%.

In the years from 2001 to 2004, infant mortality rates were 17.5, 14.5, 21.6, and 16.1 infant deaths per 1,000 live births, respectively. Early neonatal (under 7 days old) death rates in 2002–2005 were 11.7, 10.5, 15.1, and 9.5 neonatal deaths per 1,000 live births, respectively. The decrease between 2004 and 2005 was probably due to improved prenatal and child care services. The annual number of deliveries in the years between 2002 and 2005 were 1,222, 1,255, 1,287, and 1,246, respectively; the number of stillbirths were 21, 14, 15, and 28 for those same years. The five leading causes of mortality in 2004 were the same as those in 2002.

## HEALTH OF POPULATION GROUPS

### Children under 5 Years Old

According to the 2001 Population and Housing Census, children under 5 years old accounted for 9.4% of the total population. There were 1,201 live births in 2002; of these, 91.8% were delivered at Holberton Hospital, Antigua’s only general hospital. That same year, 7.3% of births occurred at Adelin Medical Center, the only private hospital on the twin-islands. Only 0.8% of births were delivered outside of the medical care system. In 2003, there were 1,241 live births. Of these, 93% were delivered at Holberton Hospital, 6% at Adelin Medical Center, and only 0.9% were born outside the medical care system. Between 2001 and 2004, the annual number of stillbirths was 21, 14, 15, and 29, respectively. Hospital data show that the prevalence of low birthweight (under 2,500 g) ranged from 5.3% to 7.5% in 2001–2004.

Neonatal deaths comprised 59% to 72% of all infant deaths between 2002 and 2005, with a median of 14 neonates dying annually. Infant deaths for each of these years were 21, 18, 33, and 22, respectively. In 2002 in children 0–4 years old, there were 18 deaths due to certain conditions originating in the perinatal period; two due to diseases of the central nervous system; one due to diseases of pulmonary circulation and other forms of heart disease; and one each due to pneumonia, congenital abnormality, and accidental/intentional injury. Of 18 deaths by known causes in 2003, 12 were due to certain conditions originating in the perinatal period, five to congenital anomalies, and one to diseases of the digestive system. Health center data show that the

percentage of infants exclusively breast-fed at 6 weeks was approximately 36% in 2001–2004. The proportion of mothers partially breast-feeding at 3 months after birth was more than twice that of mothers exclusively breast-feeding in the same period.

Child Health Services are provided for children under 5 years of age at various health centers throughout the country, including monitoring of growth, development, and nutritional status as well as prevention of childhood diseases through immunization.

Immunization coverage against DPT, measles, and polio was high in 2001–2005: for DPT and measles it ranged from 97% to 99%; polio coverage ranged from 93% to 99%.

Food and nutrition indicators show that in 2002, 5.3% of children 0–5 years old had anemia. In 2004, 2.7% had anemia. In 2001–2004, the percentage of underweight (weight-for-age) remained stable, at around 1.3%. In the same time period, the number of cases of gastroenteritis in children under 5 years old averaged 713 cases annually; it declined to 440 cases in 2005.

In 2001, the number of pediatric admissions to Holberton Hospital was 471.

No infants born to HIV-positive mothers (15–25 years old) in 2001–2005 tested positive for HIV infection.

### Children 5–9 Years Old

The 2001 Population and Housing Census showed that children in this age group accounted for 9.6% of the total population in 2001. In 2000–2002, there were only three deaths in children 5–9 years of age.

### Adolescents 10–14 and 15–19 Years Old

Adolescents 10–14 years old accounted for 9.2% of the total population in 2001; 15–19-year-olds accounted for 8.2%. In the age group 15–19 years old, 0.4% had disabilities. In 2002, there were 170 live births in the age group 13–19 years old: of these, 14, or 8.3%, were to women 13–15 years old; 43, or 25%, were to women 16–17 years old; and 113, or 67%, were to women 18–19 years old. Births to teenagers are considered high-risk births, particularly those in young women 13–16 years old. In 2003, live births peaked among 13–19-year-olds, at 209. This was due to a marked increase in the number of live births to females 16–18 years old.

### Adults 20–59 Years Old

Persons in this age group accounted for 54.2% of the total population in 2001, with males accounting for 45.9% and females for 54.1%. Persons with disabilities represented 0.9% in this age group. Leading causes of mortality for defined causes among 20–59-year-olds in 2000–2002 were AIDS, with 30 deaths (9.8%

of all deaths in this age group); diabetes, with 19 deaths (6.2%); female breast cancer, with 15 deaths (4.9%); hypertensive diseases, with 15 deaths (4.9%); and heart failure and complications, with 15 deaths (4.9%). Women outnumbered men among HIV-positive persons aged 25–29 years old by a ratio of 5 to 4. Another issue of concern was the impact of HIV/AIDS on the working age population and in youth attending school. In 2002, 1.65% of the adult population was living with HIV/AIDS, and of an estimated 1,128 persons living with HIV/AIDS, 99.7% were between 15 and 49 years old.

There were 427 women who had made at least four visits to prenatal clinics up to the 32nd week of gestation in 2002 and 489 in 2003. Based on United Nations estimates of 1,528 live births in Antigua and Barbuda in 2000, about one-third of pregnant women attended government prenatal clinics that year. The country has set a target of having at least 90% of pregnant women reaching full term with hemoglobin levels at or higher than 11 g/dl, indicating the absence of anemia. In 2001–2005, fewer than 3% of pregnant women tested showed hemoglobin readings below 11 g/dl at term.

Maternal and child health data indicate that oral contraceptives were the most frequently used birth control method; other methods included condoms, injectable contraceptives, and the intrauterine contraceptive device.

The number of overweight persons (BMI greater than 25) increased from 424 in 2002 to 549 in 2004. The number of obese persons (BMI greater than 30) increased from 450 in 2002 to 739 in 2004.

The 2006 report of the United Nations Development Program stated that there were evident gender disparities in tertiary education: at the University of the West Indies School of Continuing Studies, only 20 of the 191 students enrolled for the 2003–2004 academic year were male.

### Older Adults 60 Years Old and Older

According to the 2001 Population and Housing Census, there were 7,218 persons 60 years old and older; 44.2% were males and 55.8% were females. In the age group 90–94 years old, there were 123 females, and only 60 males; in the age group 94 years old and older, women (22) far outnumbered men (8).

Retirement age in government service and in many private institutions is set at 60 years old. Retired government officers are given a gratuity and/or pension, but many seek employment after the age of 60 in order to supplement this income. In 2001, 28.2% of the population aged 60 years old and over were gainfully employed. Of the older adult population, 6% was considered disabled; hemiplegia and blindness due to cataracts, glaucoma, and diabetes were common causes of disability among the elderly.

## The Family

Reports from the Child and Family Guidance Center indicate that in 2001–2005 there were 31 reported cases of sexual molestation; notably, 29 of the victims were 3 to 14 years old. In the same period, there were 22 attempted suicides, 5 of which were among 3–14-year-olds. In 2003–2005, the most common cases seen at the Child and Family Guidance Center were sexual molestation cases, behavioral issues, attention deficit hyperactivity disorder/attention deficit disorder (ADHD/ADD), and hyperactivity.

A United Nations Development Assistance Framework report indicated that women far outnumber men in the teaching profession. In 2003–2004, of the 458 teachers working in government primary schools, 401 (88%) were female; of 37 principals, 33 were female.

Statistics from the Directorate of Gender Affairs indicated that in 2001–2005 there were 1,180 calls to hot line services regarding domestic violence. Women represented 82% of all calls received; emotional abuse was the most common complaint.

## Workers

In collaboration with the AIDS Secretariat, public and private-sector organizations, and the workers' union, in 2001 the government developed an HIV/AIDS policy for the workplace. The policy established the employer's position and practices as they relate specifically to HIV-infected employees and/or family members.

## HEALTH CONDITIONS AND PROBLEMS

### COMMUNICABLE DISEASES

#### Vector-borne Diseases

There were two imported cases of **malaria** in 2001 and in 2005; all four were in males. In 2001, there were nine cases of **dengue fever**, four in 2002, and none between 2003 and 2005.

#### Vaccine-preventable Diseases

Between 2002 and 2005, annual reported cases of **hepatitis B** ranged from 2 to 24 cases. There was one reported case of **measles** in 2001 and one in 2004.

There were no reported cases of **acute flaccid paralysis**, **non-neonatal tetanus**, **fever with rash**, or **mumps** in the reporting period. Yellow fever vaccines are available to persons traveling to areas where the disease is endemic. There were no reported cases of **poliomyelitis**.

#### Intestinal Infectious Diseases

In the years between 2001 and 2005, there were 284, 240, 276, 255, and 192 reported cases of ciguatera poisoning, respectively. In 2002–2003, **ciguatera poisoning** ranked third and fourth

among leading causes of communicable diseases. The number of reported cases of **gastroenteritis** among those 5 years old and older continued to decline, from a peak of 1,067 cases in 2002 to 923 in 2005. Reported cases of **food-borne illnesses** totaled 1,101 in 2001–2005, including 53 cases of salmonellosis and 24 cases of shigellosis that occurred in 2001. There were no reported cases of cholera.

Between 2000 and 2001, there were six cases of **typhoid fever**.

#### Chronic Communicable Diseases

In 2001–2005, there were 16 cases of **tuberculosis**, 5 of which were in HIV-positive persons. Reported cases of tuberculosis increased between 2004 and 2005: there was one case in 2001, four in 2002, one in 2003, four in 2004, and six in 2005. In 2004, there was one reported case of **leprosy** (Hansen's disease), which was successfully treated.

#### Acute Respiratory Infections

The number of reported acute respiratory infections decreased from 19,175 in 1995–2000 to 16,056 in 2001–2005. Acute respiratory infections ranked first among the leading communicable diseases in 2002 and 2003, with 5,888 and 6,115 reported cases, respectively. In 2002 there were 275 infants diagnosed with acute respiratory infections; in 2003, there were 259. In children 1–4 years old, new reported cases of acute respiratory infections totaled 494 in 2002 and 689 in 2003. Among the population older than 5 years old, the number of reported cases peaked at 5,200 in 2001. Reported cases of acute respiratory infections in 2003–2005 fluctuated from 3,239 in 2003; to 3,099 in 2004; and to 4,202 in 2005. In 2004, a hotel reported one case of Legionnaire's disease.

#### HIV/AIDS and Other Sexually Transmitted Infections

The first case of AIDS was diagnosed in Antigua and Barbuda in 1985, in a homosexual male. In 1985–2005, the cumulative total was 553 confirmed cases. Heterosexual transmission is the leading mode of transmission. Of the 205 new AIDS cases in 2001–2005, 55.1% were in males and 44.9% in females. The number of new AIDS cases increased from 32 in 2001 to 62 in 2005. By the end of 2003, the Caribbean Epidemiology Center (CAREC) and the United States Centers for Disease Control and Prevention estimated that 702 persons were living with HIV/AIDS in the country. In 2001–2005, there were 50 deaths due to AIDS—the highest number of deaths (15) occurred in 2001. Of the 10 deaths in 2004, 5 were males and 5 females—all 25 years old and older. Of the 10 deaths in 2005, 8 were males and 2 were females—all in persons 20 years old and older. As part of the effort to prevent the mother-to-child transmission of HIV/AIDS, 99% of pregnant women were tested for HIV; those testing positive received antiretroviral drugs free of cost. In addition, these women were given infant formula and encouraged not to breast-

feed. Of the 553 cumulative confirmed cases of HIV infection at the end of 2005, 22 were in children 0–9 years old.

In 2005, Antigua and Barbuda's Ministry of Health, Sports, and Youth Affairs; Her Majesty's Prison; and CAREC conducted a two-day survey on HIV seroprevalence among male inmates in the prison. In addition to determining the HIV prevalence rate, the survey aimed to provide evidence to support the development of expanded, confidential, voluntary counseling and testing; prevention education; and care and treatment for incarcerated HIV-positive males. Of 163 male inmates, 100 (61%) participated in the survey. The mean age of the participants was 32 years, with the youngest being 15 years and the oldest 66 years. Three inmates tested positive for HIV for a prevalence rate of 3.0%.

Clinic data showed that in 2001–2003, the three leading sexually transmitted infections were syphilis (195), candidiasis (117), and gonococcal infection (111).

### Zoonoses

There were no cases of zoonotic diseases in 2001–2005.

## NONCOMMUNICABLE DISEASES

### Metabolic and Nutritional Diseases

Clinic statistics showed that there were 898 new cases of diabetes mellitus and its complications in persons 20 years old and older in 2002 and 1,009 in 2003.

### Cardiovascular Diseases

In 2003, there were 4,822 first-reported cases of hypertension and 214 cases of heart disease.

### Malignant Neoplasms

In 2002, there were 58 incident cases of malignant neoplasms. Males accounted for 56% (33) of all incident malignant neoplasms. The leading sites were prostate (19), stomach (5), colon (2), and 1 each of esophagus, liver, and bladder. Of the 25 (44%) incident cases of malignant neoplasms in females, the leading sites were breast (8), colon (4), liver (3), esophagus (2), and 1 each in lung and bladder. In 2003, there were 59 cases of neoplasms—males accounted for 61% and females 39%. Of the 36 incident cases among men, neoplasm of the prostate accounted for 50% and for females, neoplasm of the breast and cervix accounted for 26% each.

## OTHER HEALTH PROBLEMS OR ISSUES

### Mental Health and Addictions

In 2004, there were 184 persons admitted to the Mental Hospital (123 males and 61 females), compared to 153 in 2005 (95 males and 58 females). Hospital statistics for 2001 showed 176

admissions, of which 30% (52) were for substance abuse and psychosis. The number of new patients aged 20 years and older first admitted for drug and alcohol abuse in 2003 was 25.

## RESPONSE OF THE HEALTH SECTOR

### Health Policies and Plans

The Government of Antigua and Barbuda considers that access to health care is a fundamental right of every Antiguan and Barbudan. In 2004, the government introduced a multi-sector "Agenda for Change." Under the rubric "Quality Health For All," the Agenda plans to introduce a national health insurance plan, build a public nursing home to upgrade the current geriatric Fiennes Institute, introduce a disability assistance grant, and significantly reduce taxes on many over-the-counter pharmaceutical products. The Agenda also includes a plan to provide a pension for all senior citizens, eradicate poverty and improve the quality of life of the poor and needy, provide equal opportunity for the physically challenged, and deliver improved public services.

The 2001–2004 period was distinguished by major health developments, such as the commissioning of four new health centers. The 2005 Cricket World Cup Projects (Incentives) Act was enacted to stimulate investments and construction in anticipation of the country's hosting the 2007 Cricket World Cup. It is expected that the resulting increase in tourists will generate employment, but it also will overburden the country's health infrastructure.

### Organization of the Health System

The Minister of Health, Sports, and Youth Affairs provides leadership in public health care, health regulations, and service delivery. Technical and administrative staff assist the Permanent Secretary in achieving the government's goals and objectives. The Chief Medical Officer is the chief technical advisor to the Ministry and is responsible for coordinating health services in hospitals and health centers.

The Ministry of Health is the primary provider of public sector health care services. Holberton Hospital, a 141-bed hospital in Antigua, is the main provider of public, inpatient, and outpatient services. The Adelin Medical Center, a 21-bed facility, is the only private inpatient hospital in Antigua. Health services in Barbuda are provided at the eight-bed Hannah Thomas facility; there also is the 100-bed geriatric Fiennes Institute.

The national health system is financed through public taxation and levies supporting the Medical Benefits Scheme, which provides medication coverage for diseases such as asthma, diabetes, glaucoma, hypertension, cardiovascular disease, heart disease, sickle-cell anemia, leprosy, and certified lunacy. Beneficiaries are contributors, persons under 16 years old, and persons 60 years old and older. Some employees are enrolled in personal

## Antigua and Barbuda Strikes Back at HIV/AIDS

The economically active population in Antigua and Barbuda is being hardest hit by the country's HIV/AIDS epidemic. Of the estimated 1,128 persons living with HIV/AIDS, almost all are between 15 and 49 years old. Moreover, women outnumber men among HIV-positive persons 25 to 29 years old. In response, the Government has joined hands with public and private stakeholders to develop an effective HIV/AIDS policy for the work place. The policy sets out the practices employers must follow in dealing with HIV-infected employees and their families. In addition, to help prevent mother-to-child transmission of HIV/AIDS, 99% of pregnant women have been tested, and those testing positive are provided free antiretroviral drugs.

or private insurance schemes. Medical care and compensation to workers injured on the job are the responsibilities of employers and the Social Security Department.

### Public Health Services

Primary health care services in the districts include maternal and child health, health education, environmental sanitation, community mental health, nutrition, diabetic and hypertension screening and care, communicable disease control and surveillance, and home visitations. In 2001–2004, four new health centers became operational. Health centers use a team approach to deliver health care services. The team includes a resident medical officer, environmental health officers, family nurse practitioners, public health nurses, district nurse midwives, and clinic aides. These clinics also offer pharmacy services.

In 2001, the Government introduced a National HIV/AIDS Care, Treatment, and Prevention Policy. The policy encompasses the guiding principles that determine the protocols, practices, and services to be provided. The Government has prepared a Strategic Plan for the National Response to HIV/AIDS, 2002–2005 to guide the country's response to the increasing AIDS epidemic. The Plan acknowledges that prior efforts have been centered around the health sector and that the solutions for reducing the spread and the impact of the disease go beyond health. In 2004, the Government initiated voluntary counseling and testing for HIV/AIDS patients. In 2005, a Care and Treatment Manual and a Procedure Manual were developed by the AIDS Secretariat to ensure that all groups providing care for and treatment to persons living with HIV/AIDS used a standardized protocol. In 2005, the AIDS Secretariat appointed a Clinical Care Coordinator as the main provider of HIV/AIDS treatment, as a way to coordinate reporting activities and provide training on HIV/AIDS and the use of antiretrovirals. In 2001–2005, seven health facilities initiated voluntary counseling and testing for HIV/AIDS patients—all health centers and Holberton Hospital in Antigua, and the Hannah Thomas Hospital in Barbuda. Other initiatives conducted in

2003–2005 included a social marketing program on condoms, school-based AIDS education for youth, programs to ensure safe injections in health care settings, programs for men who have sex with men, CD4 count testing every three months, and public education to address the issues of stigma and discrimination.

The Directly Observed Treatment, Short Course (DOTS) program continues to be an integral part of the community health services for the treatment of tuberculosis. Contact tracing of TB patients is actively pursued.

In 2003, a multisectoral team was established for developing a plan for coping with severe acute respiratory syndrome (SARS). In 2005, the team drafted a plan for addressing a potential influenza pandemic.

The Ministry of Health's Information Unit, which is responsible for collecting, analyzing, and disseminating public health information, continues to require strengthening and upgrading. Disease surveillance activities are carried out by a national epidemiologist attached to the Ministry's Medical Division. There is active surveillance for vaccine-preventable diseases. There is one public health laboratory and four private ones on the island.

The National Solid Waste Management Authority (NSWMA) is responsible for the storage, collection, transportation, and disposal of waste in Antigua and Barbuda; it is comprised of four major program areas: administration, collections, disposal, and public education. The Authority conducts regular public awareness campaigns that include active collaboration with non-governmental and community-based organizations to implement waste management projects. Antigua and Barbuda will continue to face challenges such as an increasing population, higher waste generation per household, and limited land space to dispose of solid waste. The Government continued to seek financing for a central sewerage system.

Efforts to ensure the safety of food served in hotels and by itinerant vendors include certification, health promotion, and education programs. Intensive education campaigns are conducted prior to major events such as carnival, sailing week, and cricket season. Sanitary inspectors from the Ministry of Health are re-

sponsible for periodic visits to the food and beverage departments in the hotel industry and restaurants for quality assurance assessments. In 2005, the government drafted legislation dealing with food safety, animal health, and plant health.

### Individual Care Services

Holberton Hospital provides general and specialized services, including internal medicine, surgery, orthopedics, obstetrics and gynecology, radiology, and pathology. The private sector and foreign specialists provide services in nephrology, ophthalmology, neurology, and oncology. Rehabilitation services at Holberton Hospital include physiotherapy, occupational therapy, speech and language therapy, and respiratory therapy; the hospital also provides emergency medical services. Adelin Medical Center provides both outpatient and inpatient care. Barbuda residents are served by the Hannah Thomas Hospital, which mainly operates as an outpatient facility.

Some health specialty services such as radiotherapy are not accessible on the island, and patients must travel to neighboring islands or the United States for tests such as magnetic resonance imaging and for a variety of treatment options, including radiotherapy and chemotherapy. There are 26 health clinics and these make referrals to the Holberton Hospital. These clinics also hold specialized clinics for the management of diabetes, hypertension, prenatal services, child health, and birth control. There is no organizational framework for program development and implementation in the area of mental health. Consequently, the government continues to seek external assistance to upgrade and strengthen its mental health services. Institutional care for the elderly is provided at the 100-bed Fiennes Institute, which will be upgraded in the future.

### Health Promotion

There are two separate systems for oral health care for Antigua and Barbuda. In Barbuda, the Barbuda Council is responsible for dental care, and it has organized an active fluoride rinse program for primary schoolchildren between the ages of 6 and 10 years. There is a fluoride varnish program for children between the ages of 3 and 5 years. The Council has contracted a private dentist to organize these programs and provide basic dental care such as filling cavities, cleaning teeth, extracting teeth, and performing root canals for the general population.

In Antigua, the central government is responsible for dental care in the public sector. A fluoride rinse program was implemented in public and private primary schools in 2002. Basic dental services including fillings, cleanings, extractions, and fluoride treatments are carried out at St. John's Health Center for schoolchildren 17 years old and younger and for persons 60 years old and older. Emergency services, extractions, and x-rays are provided for persons between 18 and 59 years of age.

### Human Resources

The Ministry of Health, Sports, and Youth Affairs is responsible for human resources working in public health. There is a shortage of medical personnel in the public sector and, among other initiatives, the Government is addressing this through technical cooperation agreements with the government of Cuba, whereby a cadre of health personnel (anesthetists, radiologists, internists, an oncologist, nurses, pharmacists, and laboratory technologists) from that country is deployed to Antigua and Barbuda on fixed-term assignments to complement national health personnel. Table 1 shows the number and breakdown of health sector personnel.

### Health Supplies

The Ministry of Health is responsible for the regulation and control of pharmaceutical services and general medical supplies. The Government continues to receive assistance from the Eastern Caribbean Drug Service. Vaccines are procured by the government through the Pan American Health Organization's Revolving Fund. There is a National Drug Formulary and a National Formulary Committee that regulate the purchase and use of pharmaceuticals.

### Health Research and Technology

The renal dialysis unit at Holberton Hospital has five dialysis machines. There were 21 persons on dialysis in 2005. The only intensive care unit is located at that hospital; in 2004, it received new ventilators and cardiac monitors. In 2004 a magnetic resonance imaging (MRI) machine was obtained in the private sector. This reduced the number of persons who had to travel overseas for this diagnostic service. In 2004, the Holberton Hospital received a Doppler ultrasound unit, a new general ultrasound unit, and a spiral CT scanner.

### Health Sector Expenditures and Financing

In 2001–2005, the total expenditure on health averaged 12.6% of the national budget. According to Antigua and Barbuda estimates of recurrent revenue and expenditure, the recurrent expenditure in health in 2004 was US\$ 27.9 million and the estimated recurrent expenditure in health was US\$ 24.5 million. Of the latter amount, 38% was allocated to Holberton Hospital, 21% to the Central Board of Health (environmental health), and 14% to the Medical General Division (primary health care).

### Technical Cooperation and External Financing

International, non-governmental, and national agencies provide technical cooperation in Antigua and Barbuda through grants, loans, and technical cooperation in the health sector. They include international agencies such as the United Kingdom's De-

**TABLE 1. Public health sector personnel categories and persons covered, by type of health worker, 2005.**

Category	Total	Persons covered
Physicians	53	1,302
Dental surgeons	3	23,000
Anesthetists	2	34,500
Nutritionists/dietitians	2	34,500
Trained nurses	175	394
Ward assistants	44	1,568
Medical technologists	5	13,800
Phlebotomists	1	69,000
Laboratory assistants	2	34,500
Laboratory technicians	2	34,500
Physiotherapists	1	69,000
Radiographers	7	9,857
Pharmacists	6	11,500
Emergency medical technicians	13	5,308
First responders	3	23,000

partment for International Development (DFID), the Clinton Foundation HIV/AIDS Initiative, UNAIDS, United States Agency for International Development, U.S. Centers for Disease Control and Prevention, the United Nations Assessment Assistance Pro-

gram, the Pan American Health Organization, regional health institutions, and the International Labor Organization. National groups include the Antigua and Barbuda Red Cross, special-interest groups, and service clubs.