Antigua and Barbuda is situated in the hurricane zone. The country is also subject to earthquakes and droughts.

Antigua and Barbuda gained independence from Great Britain on 1 November 1981. The country is governed as a parliamentary democracy; the Queen of England is the country’s titular head. There is a bicameral legislature. Under the constitution, elections are scheduled every five years. The Barbuda Council was established by the Barbuda
Local Government Act in 1976. The Council administers and regulates agriculture, forestry, public utilities, and roads and also raises and collects revenues. With respect to health, the Council is responsible for the administration of the country’s public health, medical, and sanitary facilities, and health services.

Antigua and Barbuda is a member of the Organization of Eastern Caribbean States (OECS) and cooperates with other OECS countries in areas such as economic policy, defense, pharmaceutical procurement, and international diplomacy. Antigua and Barbuda uses the Eastern Caribbean currency, with the exchange rate of US$ 1.00 = EC$ 2.70.

The country has few natural resources; its economy is based on tourism, construction, manufacturing, and financial services. During 2006–2008, the economy grew, but real gross domestic product (GDP) decreased in 2009 and 2010 due to a decline in tourism and construction, the weak recovery in the global economy, and the closure of the Sanford Group of Companies, a privately-held group of companies that had sizeable investments in the country. Public- and private-sector employment increased in 2006, but in 2010 there was a freeze on salaries, wages, and new employment in the public sector. GDP in market prices stood at US$ 1,131.76 million (EC$ 3,055.76 million) in 2009. That same year, the Government formulated the National Economic and Social Transformation (NEST) Plan, which identified policies and programs to address fiscal and debt sustainability, encourage economic activity, and secure the social welfare of the peoples of Antigua and Barbuda, by focusing on such areas as communications and financial services.

According to the 2001 census, the population stood at 76,866. The projected population for 2010 was 90,801, with 42,642 males and 48,159 females (see Figure 1 for Antigua and Barbuda’s population structure in 1990 and in 2010). The general fertility rate has fluctuated from year to year; in 2010, it stood at 51.75 per 1,000 women of childbearing age (see Table 1). Life expectancy at birth in 2010 was given as 77.4 years for females and 73.3 years for males. During 2006–2010, the crude birth rate varied from 14.22 per 1,000 population in 2006 to 13.82 in 2010. The crude death rate was 5.82 per 1,000 population in 2006 and 4.86 in 2010. The annual population growth was estimated to be 1.3%.

![Figure 1. Population structure, by age and sex, Antigua and Barbuda, 1991 and 2010.](image)

The population increased 35.5% between 1991 and 2010. In 1991, the population structure showed a pyramidal shape in age groups older than 35 years, and relative similarity in younger age groups. By 2010, the pyramidal shape shifts to older age groups and there is relative similarity in age groups younger than 50 years. This reflects the stabilization of low fertility in the previous five decades and lower mortality at younger ages.

**Source:** United States Census Bureau, International Database, 2009, updated December 2010.

* Each age group’s percentage represents its proportion of the total for each sex.
in 2010 (see Table 1 for selected demographic indicators for Antigua and Barbuda during the reporting period).

Based on 2010 mid-year population estimates, approximately 98% of the country’s population lived in Antigua, and 32% lived in rural areas. The country experienced both inward and outward migration. It is worthwhile to note that in 2010, an estimated 20,900 persons (23.6% of the population) immigrated to Antigua and Barbuda, mainly from Dominica, Guyana, Jamaica, and the United States (2). Economic wealth and close proximity to developed countries are some of the attractive features that draw low-skilled workers to the country.

Antigua and Barbuda’s access to information and communication technology has increased in the reporting period. Between 2006 and 2010, fixed telephone lines increased from 44.14 per 100 population to 47.05, Internet users rose from 62.64 per 100 population to 80.00, and cellular phone subscriptions climbed from 129.69 per 100 population to 184.72 (3).

Between 2006 and 2010, Antigua and Barbuda made much progress in health. There has been a general reduction in both infant and maternal mortality, and life expectancy has increased. Moreover, the burden of communicable diseases decreased, thanks to several factors. On the one hand, the work of the country’s Expanded Program on Immunization led to high coverage levels and a subsequent decrease in the incidence of vaccine-preventable diseases. On the other, improvements in sanitation and food handling also contributed to the decline in some communicable diseases. In addition, the work of the Central Board of Health, a division of the Ministry of Health that is responsible for environmental health, has maintained dengue and leptospirosis at endemic levels. The availability of antiretroviral drugs has been a factor in reducing the number of deaths due to HIV/AIDS and providing a better quality of life for persons with HIV.

The maternal and child health services have qualified staff on hand; all patients receive antenatal care and deliveries are handled by trained health professionals. The overall health system also has improved. The new 185-bed Mount St. John’s Medical Center offers a wide range of services, from primary care to advanced critical care. The country embraced primary health care by putting in place strategies such as intersectoral collaboration and health promotion. The Ministry of Education collaborated with the Ministry of Health to facilitate immunization programs in schools and the media played a major role in disseminating health information to the public on such topics as immunization scheduling and family planning. Public education

### Table 1: Selected demographic indicators, Antigua and Barbuda, 2006–2010.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live births (No.)</td>
<td>1,198.00</td>
<td>1,289.00</td>
<td>1,438.00</td>
<td>1,404.00</td>
<td>1,242.00</td>
</tr>
<tr>
<td>Deaths (No.)</td>
<td>479.00</td>
<td>504.00</td>
<td>542.00</td>
<td>505.00</td>
<td>507.00</td>
</tr>
<tr>
<td>Births to teenaged women (No.)</td>
<td>134.00</td>
<td>169.00</td>
<td>215.00</td>
<td>180.00</td>
<td>146.00</td>
</tr>
<tr>
<td>General fertility rate (per 1,000 women of childbearing age)</td>
<td>47.68</td>
<td>45.97</td>
<td>61.53</td>
<td>58.97</td>
<td>51.75</td>
</tr>
<tr>
<td>Infant deaths (No.)</td>
<td>9.00</td>
<td>15.00</td>
<td>20.00</td>
<td>16.00</td>
<td>13.00</td>
</tr>
<tr>
<td>Crude birth rate (per 1,000 population)</td>
<td>14.22</td>
<td>14.44</td>
<td>16.60</td>
<td>15.90</td>
<td>13.82</td>
</tr>
<tr>
<td>Crude death rate (per 100,000 population)</td>
<td>5.82</td>
<td>5.87</td>
<td>6.19</td>
<td>5.67</td>
<td>4.86</td>
</tr>
<tr>
<td>Infant mortality rate (per 1,000 live births)</td>
<td>9.18</td>
<td>13.18</td>
<td>17.38</td>
<td>11.39</td>
<td>10.46</td>
</tr>
<tr>
<td>Male life expectancy at birth (years)</td>
<td>73.62</td>
<td>71.78</td>
<td>71.62</td>
<td>72.85</td>
<td>73.30</td>
</tr>
<tr>
<td>Female life expectancy at birth (years)</td>
<td>78.47</td>
<td>80.65</td>
<td>78.05</td>
<td>78.69</td>
<td>77.40</td>
</tr>
</tbody>
</table>

Source: Compiled by the Statistics Division and Ministry of Health, Antigua and Barbuda, 2011.
has played an important role in health. Activities in other sectors and agencies have benefited health. The Lions Club provided eye care services and prostate cancer screening, and the religious community routinely disseminated health information and facilitated screening programs for noncommunicable diseases. The Medical Benefits Scheme (MBS) offered financial assistance and pharmaceutical supplies to qualified residents of the twin island Caribbean state of Antigua and Barbuda.

**HEALTH DETERMINANTS AND INEQUALITIES**

In a Survey of Living Conditions conducted in 2007, the indigent line was estimated to be US$ 917 (EC$ 2,449) per year, or US$ 2.51 (EC$ 6.71) per day. Antigua and Barbuda’s poverty line was estimated at US$ 2,366 (EC$ 6,318) per year. Indigents made up 3.7% of the population; the poor but not indigent, 14.6%; and those considered vulnerable, 10.0%. The nonvulnerable population was 71.7% (4).

Two districts had higher than average poverty levels. In St. John’s City, the most heavily urbanized in the country, the level was 22.3%, and in St. Philip, the most distant parish on the country’s eastern end, it was 25.9%. Barbuda had the lowest poverty level, at 10.53% (4). The survey also shows that the young represent a disproportionately high portion of the indigent. While persons 0–14 years old accounted for 26.6% of the country’s total population, they made up 32.5% of the total indigent population and 36.2% of the nonindigent poor.

Unemployment across all consumption quintiles was 2.2% among male household heads and 3.3% among female household heads.

Antigua and Barbuda has attained Millennium Development Goal (MDG) 2 (universal primary education). School attendance is compulsory between the ages of 5 and 16 years. In 2007, the total adult literacy rate was 99.0% (males, 99.1%, and females, 98.1%). In the 2009–2010 school year, net enrollment in the country’s primary schools was 80.1% overall, with males at 82.5% and females at 76.6% (5). Non-nationals made up 18.3% of all schoolchildren throughout the educational system.

The MDG assessment conducted by a national task force reported that there was a higher enrollment of boys than girls in primary education but that there was a higher enrollment of girls in secondary and tertiary education.

The Ministry of Education, Youth, Sport, and Gender Affairs is the national entity charged with promoting gender equality and women’s empowerment. Antigua and Barbuda is committed to ending gender-based violence through several initiatives such as a 24-hour crisis hotline, emergency accommodation for victims of domestic violence, and ongoing education awareness campaigns. Similarly, in March 2007, the country signed on to the United Nations Convention on the Rights of Persons with Disabilities and since then has taken steps toward ratifying the Convention.

**THE ENVIRONMENT AND HUMAN SECURITY**

Antigua and Barbuda is a signatory to various international protocols that deal with the environment and has developed policies, plans, and programs to address environmental issues. A National Environmental Management Strategy and Action Plan 2004–2009 was developed in 2004.

**ACCESS TO CLEAN WATER AND SANITATION**

The country has very low annual rainfall (40–42 inches), with droughts occurring every three to seven years. It has no rivers and very few streams. Two desalination plants supply roughly 70% of the water; other sources include surface water and wells. Barbuda depends heavily on underground wells for its water supply. In 2007, 89.3% of the population had access to safe drinking water and 72.9% had access to improved sanitation facilities; the 22.7% of the population considered to live in poor quality housing relied on pit latrines or even more rudimentary sanitation facilities (4).
**Solid Waste**

There is one sanitary landfill in Antigua (Cooks) and one in Barbuda (Plantation). Most of the waste collected in Antigua is transported to and disposed of at the Cooks landfill. The Burma site has been used to dispose of special wastes such as expired pharmaceuticals, hazardous chemicals, and lead acid batteries. Data from the National Solid Waste Management Authority indicated that there was an increase in the household waste generated during 2006–2010. Household waste increased from 20,518.94 tons in 2006 to 22,682.52 tons in 2009. Commercial waste amounted to 11,707.70 tons in 2006 but decreased to 8,268.24 tons in 2009.

**Deforestation and Soil Degradation**

According to the National Environmental Management Strategy and Action Plan, 2004–2009, poor agricultural practices and roaming livestock were the major cause of land degradation. Hurricanes have caused coastal erosion. The World Bank estimated that in 2010, 22.7% of the surface of the country was covered by forest (6).

**Air Pollution**

Various sources, including the World Bank, revealed that carbon dioxide emissions amounted to 425,000 tons in 2006, 436,000 tons in 2007, and 447,000 tons in 2008 (7).

**Persistent Organic Pollutants**

The country’s National Implementation Plan for the Management of Persistent Organic Pollutants (POPs), 2008–2015, includes the following priorities: raising awareness of POPs and pesticides and the need for their safe management and disposal; maintaining and updating national inventories of POPs and pesticides; and establishing administrative procedures to regulate and control the importation of polychlorinated biphenyls (PCBs). Transformer oils containing PCBs were identified in two large transformers. One was intact and is still in use; the other is out of service and all the oil has been removed. The contents of older, smaller transformers and those in private use that have not been monitored are of concern (8).

**Road Safety**

Data from the Royal Antiguan Police Force showed that motor-vehicle accidents increased over the 2006–2010 period. There were 836 accidents in 2006, 1,132 in 2007, 1,016 in 2008, 1,618 in 2009, and 1,806 in 2010. There were an average of eight fatalities per year during this reporting period. Between 2008 and 2010, men were responsible for 297 road accidents with injuries, and females for 182. In those accidents, 19 men and 2 women died; of the male fatalities, 9 were drivers, 5 pedestrians, 3 cyclists, and 2 passengers; of the female deaths, 1 was a pedestrian and the other, a passenger.

**Violence**

Data from the Royal Antiguan Police Force showed that in 2006–2010, there were 70 cases of murder and 10 cases of attempted murder. In those same years, there were 133 rapes, but rape cases declined markedly, dropping from 46 in 2008 to 8 in 2010.

**Disasters**

During the period under review, Hurricane Earl in 2010 and Hurricane Omar in 2008 affected the country. Hurricane Omar damaged and destroyed homes and caused flooding. The estimated cost of reconstruction and other activities related to Hurricane Earl was US$ 12,767,922; costs related to Hurricane Omar were US$ 210,000.

**Climate Change**

Antigua and Barbuda is a small island developing state and is susceptible to sea level rise; air- and
sea-surface temperature increases; more frequent and more severe hurricanes; and changes in rainfall patterns. These vulnerabilities will severely affect the tourism and food production sectors. Adaptation efforts to the new or changing environment were under way, including improving disaster response capabilities, establishing an institutional base for handling climate change, and implementing an integrated water management plan.

**Food and Nutritional Security**

Data from the Food and Agriculture Organization showed increased consumption of protein (from 70 g/person/day to 82 g/person/day) and fat (from 74 g/person/day to 83 g/person/day) in the periods 2000–2002 and 2005–2007, respectively (9). The total amount of the 2010 national budget devoted to agriculture was US$ 11,603,833 (EC$ 31,330,535), representing 32% of the national budget for that year.

**Food Safety**

There were no reported cases of avian flu in the period under review, 2006–2010. There were 37 confirmed cases of salmonella over the period, 21 of which occurred in 2010.

Antigua and Barbuda has a robust food safety program designed to prevent foodborne illness. At the heart of this program is the training of food handlers according to established principles of safe food handling: in 2007, 2,511 food handlers received such training; 1,109 did in 2008; 2,784 did in 2009; and 1,634 in 2010.

**Health Conditions and Trends**

**Health Problems of Specific Population Groups**

**Maternal and Reproductive Health**

During the reporting period, Antigua and Barbuda made considerable progress with respect to MDG5 (improving maternal health). All pregnant women received antenatal care from health care professionals and some 90% of births were delivered in a hospital by trained personnel. There were four maternal deaths between 2006 and 2010. The single maternal death in 2010 was due to postpartum hemorrhage as a result of disseminated intravascular coagulation. Contraceptive use by women for all methods was 44.6% in 2007.

As part of the country’s program to prevent mother-to-child transmission (PMTCT) of HIV, 2,287 pregnant women were tested between 2007 and 2009; 6 (0.26%) were found to be HIV-positive. In 2010, 605 pregnant women were tested; 2 tested positive and were enrolled in the PMTCT program. Eight weeks after birth, both women’s children were tested, using the HIV DNA PCR test to ensure early diagnosis of HIV in babies born to HIV-positive mothers. The test was administered for free, and both children were found to be HIV-negative.

Cases of anemia in pregnant women reached a peak in 2008, with 183 cases, which subsequently declined to 98 in 2009 and to 73 in 2010.

**Children (under 5 years old)**

The population under 1 year old was 6,571 in 2006–2010. There were 73 infant deaths in that period, and the infant mortality rate ranged between a low of 9.18 per 1,000 live births in 2006 and a high of 17.38 in 2008. The majority of infant deaths were due to prematurity. The country’s Expanded Program on Immunization was very successful; in 2010, coverage with vaccines in the immunization schedule for infants was 100%.

The proportion of the population under 5 was estimated to be 10.4% in 2010. There were 32 deaths in the population 1–4 years old during the reporting period. Coverage against measles, mumps, and rubella (MMR) was 100% in 2010 for 1-year-old children. Acute respiratory infections and gastroenteritis were the leading causes of morbidity in children under 5 years old. In the 2006–2010 period, this age group accounted for 11,422 cases of acute respiratory infections and 2,770 cases of gastroenteritis.
Children (5–9 years old)

Children aged 5–9 years old represented 10.3% of the population in 2010. In the 2006–2010 period, acute respiratory infections and gastroenteritis were the leading causes of morbidity in children older than 5, with 5,202 cases of acute respiratory infections and 1,939 cases of gastroenteritis.

Adolescents (10–14 and 15–19 years old)

Young persons aged 10–14 and 15–19 accounted for 9.8% and 8.9% of the population, respectively, in 2010. Teenage pregnancy decreased from 215 cases (14.9% of pregnancies) in 2008 to 146 (11.7%) in 2010.

The Global School-based Student Health Survey (GSHS) was conducted in Antigua and Barbuda in 2009 among 13–15-year-olds. The survey found that 45.1% of those interviewed had had at least one alcoholic drink in the 30 days preceding the survey, and that the majority (86.5%) had had their first drink before age 14.

Of concern was the finding that 17.4% had considered suicide (12.6% of males and 22.5% of females) and 12.3% (9.3% of males and 15.7% of females) had actually attempted suicide at least once during the 12 months preceding the survey. Of the 37.1% who had ever had sexual intercourse, 68.4% had used a condom the last time they had had sex. Of those who used tobacco, almost 90.0% had tried it before age 14.

Adults (20–64 years old)

Persons aged 20–44 years represented 39.4% of the population and those 45–64, 13.1% in 2010. In 2006–2010, there were 250 deaths in the 25–44 age group and 493 deaths among those 45–64. In 2010, these age groups represented approximately 75% of the labor force. The leading causes of death for this group in 2005–2009 were due to noncommunicable diseases. In rank order, these causes were heart disease, cancer, diabetes, hypertension, and cardiovascular diseases. Hospital admissions averaged 960 persons per annum for 2006–2010, and were mostly as a result of complications from chronic diseases.

There were 55 patients on dialysis in this age group during the reporting period, 24 of which are as a result of complications from diabetes. An average of 44 amputations were performed annually between 2006 and 2010; these are also from complications of diabetes. Contraceptive prevalence decreased from a high of 55.6% in 2006 to 33.7% in 2010. Unmet needs for contraception cannot be predicted as reproductive health is mostly managed through the private health care system.

The Elderly (65 years old and older)

In 2010, persons 65 years old and older accounted for 8.2% of the population; persons aged 80–89 years and those 90 years old and older represented 1.5% and 0.3% of the population, respectively. The number of deaths in the population 65 years and older was 1,570 in 2006–2010. Ill-defined conditions such as old age, senility, and respiratory failure were reported among the leading causes of death in the most elderly population (85–101 years old).

Mortality

During the reporting period, there were 2,537 reported deaths in Antigua and Barbuda. The crude death rate was 4.86 per 1,000 population in 2010. In 2006, 479 deaths were recorded, compared with 507 in 2010. The country’s infant mortality rate increased from 9.18 per 1,000 live births (11 deaths) in 2006 to 10.46 (13 deaths) in 2010. In 2006–2010, chronic diseases were the leading causes of mortality (see Table 2). Data for 2006–2009 show that the three leading causes of death were heart disease, malignant neoplasms, and diabetes mellitus.

Morbidity

Communicable Diseases

Vector-borne Diseases

Dengue fever is endemic in the country, with periodic outbreaks. There were no cases in 2006
and only one in 2007, but there were 52 cases in 2008. In 2009 and 2010 there were two and seven cases, respectively. There were three confirmed cases of imported malaria during 2006–2010. There were no cases of yellow fever in the reporting period.

Vaccine-preventable Diseases

There were no reported cases of diseases targeted by the country’s Expanded Program on Immunization. Full (100%) coverage was achieved with all antigens.

Zoonoses

Between 2006 and 2010, there were only two confirmed cases of leptospirosis, both in males.

HIV/AIDS and Other Sexually-transmitted Infections

Between 2006 and 2009, there were 262 reported cases of HIV: 134 males, 126 females, and 2 with sex unreported. In 2008–2009, there were 133 confirmed HIV cases, with 125 persons between the ages of 15 and 49 and 8 persons older than 49. Between 2006 and 2009, deaths due to HIV/AIDS peaked in 2006, with 18 deaths. For subsequent years (2007–2010), AIDS-related deaths were 10, 15, 12, and 8, respectively. Heterosexual sex was the main mode of transmission.

Tuberculosis

There were 18 cases of tuberculosis in the reporting period. Of the seven cases occurring in 2010, five males and one female were co-infected with HIV.

Emerging Diseases

There were four confirmed cases of influenza A (H1N1) in 2009, but no reported deaths.

### TABLE 2. Ten leading causes of death, by rank, Antigua and Barbuda, 2006 and 2009.

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>2006</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>Causes of death</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Heart disease</td>
<td>1</td>
<td>47</td>
</tr>
<tr>
<td>Malignant neoplasms</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Hypertensive disease</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Accidental and intentional injuries</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Diseases of the respiratory system</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Bacterial diseases</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Certain conditions originating in the perinatal period</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

**Source:** Prepared by the Statistics Division, Government of Antigua and Barbuda, 2011.
Chronic, Noncommunicable Diseases

Chronic, noncommunicable diseases, such as hypertension and diabetes, are the leading causes of morbidity. Persons in the highest-consumption quintiles were more likely to be affected by hypertension, diabetes, and heart disease than were those in lower-consumption ones.

Cardiovascular Diseases

Between 2006 and 2009, heart disease was the leading cause of death among both men and women, accounting for 387 deaths, or 19.1% of all deaths. The Survey of Living Conditions (767 persons) showed that the prevalence of heart conditions in this sample was 7.0% (4). In 2006–2009, cerebrovascular accidents were responsible for 140 deaths, or 6.9% of the total.

Malignant Neoplasms

Between 2006 and 2009, there were 331 deaths due to cancer, 16.3% of all deaths in this period. Malignant neoplasms ranked as the second leading cause of death. Prostate cancer was the leading cause of cancer mortality during those same years, accounting for 26.6% (88 deaths) of cancer deaths. Neoplasms of the female breast accounted for 12.1% (40 deaths); neoplasms of the female reproductive system for 11.2% (37 deaths); and neoplasms of the colon for 9.7% (32 deaths) of cancer deaths.

Diabetes

Data from the Survey of Living Conditions showed that the prevalence of diabetes was 37% among the persons sampled for that survey (4). During the 2006–2009 period, diabetes mellitus accounted for 195 deaths, 9.6% of all deaths.

Chronic Respiratory Diseases

Deaths from respiratory diseases totaled 136, or 6.7% of all deaths in 2006–2009.

Hypertension

Data from the Survey of Living Conditions indicated that the prevalence of hypertension was 69.4% in the sample of persons who participated in the survey (4). Between 2006 and 2009, there were 147 deaths from hypertensive disease, accounting for 7.2% of all deaths.

Nutritional Diseases

Nutritional issues are of grave concern in Antigua and Barbuda, especially with regard to overweight and obesity in adults (see Box 1 and Table 3). In

TABLE 3. Number and percentage of overweight and obese adults attending clinics, Antigua and Barbuda, 2006–2009.

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of persons screened</td>
<td>2,903.00</td>
<td>2,223.00</td>
<td>2,469.00</td>
<td>2,711.00</td>
</tr>
<tr>
<td>No. of persons overweight(^a)</td>
<td>845.00</td>
<td>644.00</td>
<td>809.00</td>
<td>922.00</td>
</tr>
<tr>
<td>Percentage of persons overweight(^a)</td>
<td>29.10%</td>
<td>31.23%</td>
<td>32.77%</td>
<td>34.00%</td>
</tr>
<tr>
<td>No. of persons obese(^b)</td>
<td>1,116.00</td>
<td>696.00</td>
<td>789.00</td>
<td>757.00</td>
</tr>
<tr>
<td>Percentage of persons obese(^b)</td>
<td>38.40%</td>
<td>31.31%</td>
<td>31.96%</td>
<td>27.92%</td>
</tr>
<tr>
<td>No. of persons overweight or obese</td>
<td>1,961.00</td>
<td>1,390.00</td>
<td>1,598.00</td>
<td>1,679.00</td>
</tr>
<tr>
<td>Percentage of persons overweight or obese</td>
<td>67.60%</td>
<td>62.53%</td>
<td>64.72%</td>
<td>61.93%</td>
</tr>
</tbody>
</table>

Source: Antigua and Barbuda, Nutrition Division, Ministry of Health, 2011.
\(^a\) Overweight, body mass index (BMI) > 25 < 30.
\(^b\) Obese, body mass index (BMI) > 30.
2010, among children aged 0–5 years old, 16.1% were found to be overweight and 4.9% were found to be obese. Boys in that age group were at greater risk of overweight and were more obese than were girls.

Accidents and Violence

In 2006–2009, accidental and intentional injuries were responsible for 145 deaths, representing

**BOX 1. Research on adolescents’ dietary habits may provide the key to better health**

A cross-sectional survey, “Nutrition Knowledge, Practices, and Iron Status of Adolescents,” conducted in 2006 among 403 students in eight high schools in Antigua and Barbuda, provides valuable new information on young people’s dietary habits and nutritional status. Prior to this research, such information had been available only on young children and pregnant women.

Conducted by the Ministry of Health in collaboration with the Caribbean Food and Nutrition Institute (CFNI) and Brescia College at the University of Western Ontario, Canada, the survey determined what proportion of these students were overweight, investigated food consumption patterns, and evaluated basic nutrition knowledge.

The prevalence of iron deficiency anemia, using WHO standards, was 24.8% overall, 17.2% among male students and 29.3% among female students. Anemia was more prevalent in Barbuda (38.3%) than in Antigua (22.9%). The prevalence of obesity in the sample was 9.3% in males and 11.6% in females, and 10.7% overall. An additional 7.3% of males, 8.8% of females, and 8.2% overall were overweight.

Of the students classified as being underweight, 53.8% of them were comfortable with their body weight or felt that it was an appropriate weight for their stature. Of the students who were within the normal weight category, 70.5% of them thought that they were about the right weight, 11.4% thought of themselves as underweight, and 18.0% believed that they were overweight. Of those who were at risk for overweight, 63.6% perceived themselves correctly, 33.4% thought they were either the right weight or underweight, and the remaining 3.0% thought they were overweight. A large majority (79.1%) of the students classified as overweight judged themselves to be so.

The survey shows that meat, fish, and poultry were the most frequently consumed staples, with 77.0% of the students reporting having eaten these items either daily or five to six times per week. Of the students who reported consuming legumes frequently (39.7% of those interviewed), they stated that they ate legumes one or two days per week; 23.3% of the students reported they consumed legumes three to four days per week. Only 19.6% of the students on the two islands reported having vegetables daily or on most days of the week.

The survey also asked specifically about breakfast and lunch consumption. Just under half (45.7%) of the students ate breakfast daily; 59.6% had lunch daily. The main reasons for not consuming breakfast were not having enough time to eat (64.9%) and not being able to eat early in the morning (20.3%). Significantly, a few of the students (2.0%) responded that there was not enough food at home. With respect to lunch, 47.0% of the students stated that the main reason for not having that meal was that they were not hungry, while 27.1% said that they did not like what was available and 10.6% reported not having had enough money to purchase what was available.

The study has already proved beneficial to Antigua and Barbuda’s youth. First, interventions targeted to adolescents, dealing with some of the issues that the study investigated, already are under way. Moreover, educational materials on iron-rich diets and healthy lifestyles are being used in selected schools. An evaluation of the latter intervention shows that nutritional knowledge has increased among the students and that some eating patterns—such as a decrease in the consumption of sodas—already have begun to change for the better.
roughly 7.5% of the total deaths (1,929) in the country.

The Global School-based Student Health Survey found that 47.5% of students 13–15 years old (55.1% of boys and 38.4% of girls) had been involved in a physical fight at least once during the year prior to the survey. In addition, 24.9% of the students interviewed reported that they had been bullied on one or more days in the month prior to the survey (10).

Mental Disorders

In 2007, the WHO-AIMS Assessment Instrument for Mental Health Systems was fielded in Antigua and Barbuda (11). The assessment found that the country’s mental health legislation was outdated and there was no mental health policy or plan. The 110-bed Clarevue Psychiatric Hospital provided inpatient care and acute psychiatric care through eight primary health care centers. Services for children were provided by the Child and Family Guidance Clinic, a nongovernmental organization.

The assessment indicated that of the 86 discharges from the Clarevue Psychiatric Hospital, 50.0% were due to schizophrenia, 24.4% to mood (affective) disorders, 18.6% to behavioral disorders, 4.3% to neurotic disorders, and 2.3% to other mental illnesses.

Risk and Protection Factors

Data from the Ministry of Health showed that obesity decreased in the country, dropping from 38.40% in 2006 to 27.92% in 2010; the levels of overweight, on the other hand, rose from 29.10% in 2006 to 34.00% in 2010.

The Physical Activity and Nutrition Program was launched in 2008 by the Medical Benefits Scheme to enhance the health of students in Antigua and Barbuda through increased physical activity and improved dietary habits.

Effective 31 May 2010, all Government offices, vehicles, and premises were designated as no-smoking areas.

HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION

Health Policies

There were no formal health sector reforms during the reporting period, but changes in the health sector were influenced by changes in the wider public sector. For example, in 2007, the Government developed a Business Plan for Health for the 2008–2010 period. The Ministry of Finance required that the plan be put in place as a mechanism for public-sector planning (12). The plan’s priorities were management and organization of the health sector; environmental health; control of communicable diseases; control of noncommunicable diseases; family health; pharmaceutical services; health care financing/hospital management; nutrition; the health information system; and health infrastructure.

The Health System’s Stewardship Role

The Ministry of Health, Social Transformation, and Consumer Affairs has a steering role and is charged with delivering health care.

The Ministry of Health also is charged with monitoring drinking and recreational water quality. Each week, 10 drinking water samples are taken from various sources and sent out for analysis. In addition, 10 samples of bathing-beach water are sent for analysis each week.

The Health System’s Performance

The Pan American Health Organization (PAHO) conducted an evaluation of Antigua and Barbuda's Essential Public Health Functions (EPHF) in 2010 (13). According to this review, EPHF 7 (evaluation and promotion of equitable access to necessary health services) ranked highest, receiving a score similar to the one it received in a similar assessment conducted in 2001. EPHF 1 (monitoring, evaluation, and analysis of health status) and EPHF 5
(development of policies and institutional capacity for public health planning and management) also were highly rated in the current evaluation. EPHF 10 (research in public health) and EPHF 9 (quality assurance in personal and population-based health services) scored low. The Survey of Living Conditions indicated that of the 6,262 persons surveyed, 86% were either very satisfied or satisfied with available health services and only 2.7% were very dissatisfied.

In the reporting period, the Medical Benefits Scheme provided financial assistance, diagnostic services, and pharmaceutical supplies to its contributors as well as persons under 16 years old and those 60 years and older. In addition, it provided medication coverage for nine diseases: asthma, cardiovascular diseases, certified lunacy, diabetes, glaucoma, heart disease, hypertension, leprosy, and sickle cell anemia.

HEALTH LEGISLATION

In 2006–2010, health-related legislation included the 2008 Pesticides and Toxic Chemicals Act, which established the Pesticides and Toxic Chemicals Control Board and seeks to regulated the importation, storage, manufacture, sale, transportation, use, and disposal of pesticides and toxic chemicals; the 2008 Misuse of Drugs Act (amendment); the 2009 Caribbean Accreditation Authority (for medicine and other professions); the 2009 Medical Practitioners Act; the 2009 Mount Saint John’s Medical Center Act; and the 2010 Medical Benefits Act and Regulations. The 1995 Pharmacy Act and Regulations was amended in 2011. The Government also enacted the Trafficking of Persons Prevention Act in 2010.

HEALTH EXPENDITURES AND FINANCING

Public health care system revenue mainly came from the Ministry of Finance and the Medical Benefits Scheme, with private health insurance and user fees contributing less. In 2008, government expenditure on health was US$ 33,842,920 (EC$ 91,375,885), decreasing some in 2009 to US$ 31,795,757 (EC$ 85,848,545). This represented 8.8% and 10.2% of the annual national budget, respectively. In 2010, total public expenditure was 51% of GDP, while public expenditure on health was US$ 39,269,124 (EC$ 106,690,282), which represented 7% of GDP.

The health sector relied on primary health care to reach the population, reduce inequities, and make the health services accessible, effective, and efficient. Primary health care services are provided through nine community clinics (8 in Antigua and 1 in Barbuda) and 18 satellite clinics. The clinics are located within 3.2 km of every major community. The health centers and satellite clinics provided a range of primary care services, including maternal and child health, environmental sanitation, mental health, and chronic disease management.

Secondary and tertiary care has been provided at the Mount St. John’s Medical Center since it opened in 2009. The Center is a 185-bed facility, managed by a board that is responsible for its overall organization and management. Center services include a neonatal intensive care unit, radiology with world-class digital technology such as MRI and CT scanning, and noninvasive cardiology treatment. The Caribbean Medical Council Association (CAMC) accredited the hospital’s new internship program in November 2010.

The Government, through the Ministry of Health, allocates funds within the budget to assist persons requiring treatment outside the country. In 2010, this allocation amounted to US$ 484,149.79 (EC$ 1,307,204.44). The largest amounts expended that year were for radiotherapy treatment for cancer US$ 157,224.00 (EC$ 424,506); cardiopulmonary investigations and surgery US$ 83,391.85 (EC$ 225,158); and limb prostheses, at US$ 64,809.00 (EC$ 177,685). Most Antigua and Barbuda citizens accessed care within the Caribbean, but some were sent beyond the region when necessary.
Antigua and Barbuda participates in the Pharmaceutical Procurement System of the Organization of Eastern Caribbean States. Antigua and Barbuda’s health system also provides antiretroviral drugs for the treatment of HIV infection free of charge.

**KNOWLEDGE, TECHNOLOGY, INFORMATION, AND HUMAN RESOURCE MANAGEMENT**

**Scientific Production in Health**

Research carried out in Antigua and Barbuda during the review period included the Global School-based Student Health Survey and nutrition research that was conducted in collaboration with the Caribbean Food and Nutrition Institute.

In addition, the 2007 Ministry of Health Business Plan (12) identified several flaws in the country’s health information system, including the absence of a health information policy document to govern the procedures for data flow and coverage from entry point to data dissemination; the absence of legislative support for data collection/processing/dissemination and for the protection and respect of confidentiality of data and information; and inadequate staff training for competent operation in an information-gathering environment. Antigua and Barbuda did make some progress in terms of knowledge and information, however—the Ministry of Health, with technical assistance from PAHO, implemented a mental health information system and a system for monitoring HIV/AIDS patients. Among other things, these systems facilitate the accurate forecasting of clients’ needs and the procurement of pharmaceuticals.

**Human Resources**

There were labor shortages in some health professions, including in nursing, laboratory, radiology, and environmental health. In 2010, the ratio of physicians was 12 per 10,000 population, 44 per 10,000 for nurses, and 16 per 10,000 for dentists. For the first two professions, these ratios had increased in comparison to the 2000–2006 period, when there were 2 physicians and 33 nursing and midwifery personnel per 10,000 population.

Two offshore medical schools operated in Antigua and Barbuda: the American University of Antigua and the University of Health Sciences Antigua School of Medicine. The university provides two scholarships annually for a national of Antigua and Barbuda to study medicine or any other discipline that the government considers to be in its national interest. An agreement between the country and Cuba also provides for training Antigua and Barbuda health professionals.

**HEALTH AND INTERNATIONAL COOPERATION**

Antigua and Barbuda accessed funding from various donor agencies and international organizations, especially in the area of HIV/AIDS and for the commissioning and operation of the Mount St. John’s Medical Center.

For financial year 2008/2009, the Government of Antigua and Barbuda received US$ 163,080.77 (EC$ 440,318.07) from the Global Fund to Fight AIDS, Tuberculosis, and Malaria. The funds were used to scale up prevention, care, and treatment to fight against the AIDS epidemic. The Caribbean HIV Alliance provided support for HIV testing and laboratory services. PAHO and the Clinton Foundation provided assistance with laboratory testing for infants of HIV-positive mothers. Support for training has come from the Caribbean HIV/AIDS Regional Training (CHART) Network.

China provided funds to complete the Mount St. John’s Medical Center. The Government of Cuba provided health care professionals to staff the Mount St. John’s Medical Center and the Gray’s Farm and Clare Hall health centers.
SYNTHESIS AND PROSPECTS

While Antigua and Barbuda made several gains in the health of the country’s population, it must take steps to hold on to gains in such areas as child survival, including immunization.

In addition, measures must be undertaken to address the country’s unfinished health agenda. The National Business Plan for Health mentioned specific challenges faced by the health sector, including the retention of nurses, the supply and distribution of human resources, the financing of primary care services, disease surveillance, and the development of policies and legislative support for quality assurance and for health information systems. Clearly, the country needs to put in place policies, systems, and programs to deal with the mounting burden of chronic diseases and reduce their associated morbidity, disability, and mortality.

The country also must be prepared to deal with the health challenges ahead. The fact that the outbreak of influenza A(H1N1) tested the country’s preparedness in terms of its response and the implementation of international health regulations should be a warning.

In addition to dealing with health issues, the country must strengthen its health system. The assessment of the Essential Public Health Functions (1,3) identified areas needing improvement. The financing of the sector and the development of human resources will also be critical.

Finally, the focus on primary health care will need to continue, with its strategies of equity, social participation, and health promotion.

REFERENCES